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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

IN RE THE MATTER OF )  
 )  
TENTATIVE CLEANUP AND ABATEMENT )  
ORDER NO. R9-2011-0001 )  
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**VIDEOTAPED DEPOSITION OF DAVID BARKER**

**Volume II, Pages 209 - 430**

**San Diego, California**

**March 2, 2011**

**Reported By: Anne M. Zarkos, RPR, CRR,  
CSR No. 13095**



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March 17, 2011

In re: *Tentative Cleanup and Abatement*

Deposition of: David Barker, Volume 2  
Date of Deposition: March 2, 2011

Dear Counsel:

The original transcript of the above referenced witness will be sent from our office to Christian Carrigan, Esq., via UPS, on March 17, 2011.

If you have any questions or concerns, please do not hesitate to call this office.

Sincerely,



Karli Peña  
Production Assistant



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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION

IN RE THE MATTER OF )  
 )  
TENTATIVE CLEANUP AND ABATEMENT )  
ORDER NO. R9-2011-0001 )  
 )  
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DEPOSITION OF DAVID BARKER,  
taken by the Attorney for NASSCO, commencing at the hour  
of 9:04 a.m. on Wednesday, March 2, 2011, at  
600 West Broadway, Suite 1800, San Diego, California,  
before Anne M. Zarkos, RPR, CRR, CSR No. 13095, Certified  
Shorthand Reporter in and for the State of California.

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I N D E X

WITNESS: DAVID BARKER, Volume 2

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MS. WITKOWSKI	412

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1224 Attachment 2 of Tentative Cleanup and Abatement Order No. R9-2011-0001, entitled "Polygons Targeted for Remediation," two pages	293
1225 RWQCB Addendum No. 3 to Cleanup and Abatement Order No. 88-79 for Bay City Marine, Inc.; 16 pages	308
1226 SWRCB revised of document entitled "UST Case Closure Summary," nine pages	311
1227 Data table with test results from 2001/2002 and 2009 investigations for Chemicals of Concern; one page	318
1228 Data tables for copper, mercury, HPAH, PCBs, and tributyltin; five pages	319
1229 Donconceptual Work Plan for Campbell Shipyard prepared by Anchor Environmental, dated March 2002; 27 pages	356

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1230	RWQCB Staff Report on the Establishment of Shipyard Sediment Cleanup Levels for NASSCO and Southwest Marine, Inc., dated February 17, 1999; six pages	361
1231	RWQCB Final Report for Shipyard Sediment Cleanup Levels, NASSCO & Southwest Marine Shipyards, dated February 16, 2001; 34 pages	366
1232	RWQCB Addendum No. 1 to Cleanup and Abatement Norder No. 85-91 for Paco Terminals, Inc.; 13 pages	381
1233	RWQCB Staff Report for Cleanup and Abatement Order No. 98-08 for The Aerostructures Group of BF Goodrich Aerospace and The BF Goodrich Company, dated March 26, 1998; 17 pages	387
1234	PowerPoint slides from San Diego Bay Contaminated Marine Sediments Assessment and Remediation Workshop dated June 18, 2002; 27 pages	389

ALL EXHIBITS TO BE BOUND SEPARATELY

1 THE VIDEOGRAPHER: Good morning. The time on 09:04:48  
2 the record is 9:04 a.m. Today's date is March 2nd, 09:04:49  
3 2011. My name is Abel Sibrel with Peterson Reporting, 09:04:53  
4 Video and Litigation Services. The court reporter today 09:04:58  
5 is Anne Zarkos of Peterson Reporting, located at 09:05:01  
6 530 B Street, Suite 350, San Diego, California 92101. 09:05:04  
7 This begins the videotaped deposition of 09:05:09  
8 David Barker, Volume 2, testifying in the matter of 09:05:12  
9 In Re Tentative Cleanup & Abatement Order 09:05:14  
10 No. R9-2011-0001; taken at 600 West Broadway, Suite 1800, 09:05:19  
11 San Diego. 09:05:30  
12 Will counsel please identify yourselves and 09:05:30  
13 state whom you represent. 09:05:34  
14 MR. RICHARDSON: Kelly Richardson of Latham & 09:05:35  
15 Watkins for NASSCO. 09:05:36  
16 MS. TRACY: Jill Tracy for SDG&E. 09:05:39  
17 MS. REYNA: Kristin Reyna for the City of 09:05:44  
18 San Diego. 09:05:46  
19 MR. DART: Matt Dart for BAE. 09:05:46  
20 MS. WITKOWSKI: Jill Witkowski for San Diego 09:05:46  
21 CoastKeeper and Environmental Health Coalition. 09:05:46  
22 MS. FITZGERALD: Leslie Fitzgerald for the 09:05:50  
23 San Diego Unified Port District. 09:05:52  
24 MS. VARCO: Suzanne Varco for Star & Crescent. 09:05:54  
25 MR. CARRIGAN: Cris Carrigan for the San Diego 09:05:58

1 Water Board and for the witness, Mr. Barker. 09:05:58

2 THE VIDEOGRAPHER: Thank you. The court 09:06:02

3 reporter may now swear in the witness. 09:06:02

4 \*\*\* 09:06:02

5 DAVID BARKER, 09:06:02

6 having first been duly sworn, testified as follows: 09:06:13

7 \*\*\* 09:06:13

8 FURTHER EXAMINATION 09:06:13

9 BY MR. RICHARDSON: 09:06:15

10 Q. Good morning, Mr. Barker. 09:06:15

11 A. Good morning. 09:06:17

12 Q. As we were wrapping up yesterday, we were 09:06:17

13 discussing the technological feasibility of the DTR and 09:06:20

14 CAO, and the economic feasibility analysis in the DTR and 09:06:23

15 CAO. And I have a few follow-up questions on that. 09:06:27

16 A. Okay. 09:06:31

17 Q. And to confirm, you are the -- designated as the 09:06:34

18 Cleanup Team's person most knowledge for both 09:06:36

19 technological feasibility and economic feasibility; 09:06:39

20 correct? 09:06:41

21 A. Yes. 09:06:41

22 Q. Yesterday we discussed confined aquatic disposal 09:06:46

23 facilities and near shore confined disposal facilities. 09:06:49

24 A. Yes. 09:06:53

25 Q. And I have a couple questions about the 09:06:54

1 permitting process for those. What would be the agencies 09:06:56  
2 that would be involved in approving that process? 09:06:59

3 A. The -- let me take the first scenario, which 09:07:06  
4 would be confined aquatic disposal facility. And this 09:07:15  
5 would be a containment facility constructed in 09:07:19  
6 San Diego Bay. And the agencies involved, let's see, 09:07:23  
7 would be -- would -- would be -- break my answer up into 09:07:40  
8 two phases. The Phase 1 is construction of the facility. 09:07:42  
9 The construction of the facility would trigger the need 09:07:47  
10 to obtain a 401 Water Quality Certification from the 09:07:54  
11 San Diego Water Board. 09:08:00

12 And the agencies involved in that process would 09:08:06  
13 include the Corps of Engineers and the resource agencies 09:08:10  
14 as well as the San Diego Water Board. And the 09:08:16  
15 certification would be required as part of the process of 09:08:22  
16 obtaining an Army Corps of Engineers 404 permit. 09:08:27

17 In this certification, the board would likely 09:08:36  
18 issue that in the form of waste discharge requirements. 09:08:40  
19 And the requirements would regulate possibly in the same 09:08:45  
20 set of waste discharge requirements both the -- any 09:08:51  
21 dredging associated with the project as well as the -- 09:08:55  
22 any fill that would be put in the bay. 09:08:59

23 And the -- then in the next phase of the 09:09:06  
24 project, which would be the -- for the long-term 09:09:11  
25 regulation of the facility after it was constructed, this 09:09:17

1 would be issued in the form of waste discharge 09:09:22  
2 requirements. And as part of that process, a -- a 09:09:25  
3 monitoring program would be established, and the resource 09:09:35  
4 agencies would be consulted and have input into the 09:09:40  
5 board's process for establishing that program. 09:09:44  
6 Q. And that's for a confined aquatic disposal 09:09:49  
7 facility? 09:09:52  
8 A. Yes. 09:09:53  
9 Q. When you mentioned resource agencies, can you 09:09:53  
10 define what agencies that would consist of? 09:09:56  
11 A. Let's see. On the state side, it would be the 09:09:59  
12 California Department of Fish and Game. And then on the 09:10:02  
13 federal side, it would include NOAA and U.S. Fish and -- 09:10:06  
14 Fish and Wildlife and the Army -- oh, excuse me. I guess 09:10:16  
15 the corps -- well, they have a resource agency branch 09:10:20  
16 within their agency. So Army Corps of Engineers. 09:10:23  
17 Q. Would U.S. EPA also be involved? 09:10:29  
18 A. Potentially, they could be. Although, in the 09:10:34  
19 board's establishment of these facilities in the past, 09:10:37  
20 the EPA has not played a major role. 09:10:41  
21 Q. Would the State Lands Commission be involved? 09:10:47  
22 A. There would be a potential for that. But in the 09:10:51  
23 past, there -- they have not been actively involved. 09:10:54  
24 Q. The Port of San Diego? 09:11:00  
25 A. Port of San Diego, since it possibly is 09:11:05

1 constructed within lands under their jurisdiction might 09:11:10  
2 very well be consulted and be part of the process. 09:11:15

3 Q. What about the California Coastal Commission? 09:11:21

4 A. I'm just going on past experience. I don't 09:11:28  
5 remember them being part of the process, though I guess 09:11:31  
6 there might be -- there -- there might be involvement by 09:11:38  
7 them. 09:11:45

8 Q. Okay. And how about a near shore confined 09:11:50  
9 disposal facility; what agencies would be involved in 09:11:53  
10 that process? 09:11:57

11 A. Near shore confined disposal facility, so 09:11:57  
12 this -- the scenario here would be construction of a -- a 09:12:02  
13 landfill on land. The -- the San Diego Water Board would 09:12:09  
14 issue waste discharge requirements for the establishment 09:12:16  
15 of the landfill and the monitoring program. 09:12:21

16 Q. And I'm sorry to interrupt, Mr. Barker. I want 09:12:27  
17 to be sure we're talking about the same near shore 09:12:30  
18 confined disposal facility. I'm talking about an 09:12:32  
19 in-water facility that's constructed where land is 09:12:34  
20 created. 09:12:36

21 A. Oh, where land -- 09:12:37

22 Q. And remember yesterday you described such a 09:12:37  
23 circumstance involving Convair lagoon potentially for 09:12:40  
24 this site. 09:12:43

25 A. Yes. Okay. 09:12:44

1 Q. So that's -- that's what I will refer to today 09:12:44  
2 as a near shore confined disposal facility. 09:12:45

3 A. Okay. Then I would say the same answer that I 09:12:48  
4 gave on the -- for the first scenario would apply. 09:12:51

5 Q. Okay. 09:12:56

6 A. I might add if the waste is hazardous waste, 09:13:02  
7 there's a potential for Department of DTSC to get 09:13:08  
8 involved. 09:13:16

9 Q. Okay. And then in this circumstance where land 09:13:17  
10 is being created in the tidelands, would there be some 09:13:20  
11 process involved with coastal development? 09:13:24

12 A. I have no personal experience with that. So 09:13:27  
13 I -- to draw on. So it would be kind of a learning 09:13:31  
14 experience for me. But it's possible that that would be 09:13:35  
15 so. 09:13:39

16 Q. Okay. 09:13:41

17 And you described two phases of the -- of the 09:13:42  
18 process. In what order would the agencies consider 09:13:44  
19 the -- whether to grant permits to develop a near shore 09:13:50  
20 confined disposal facility? 09:13:54

21 A. Which agency would rule first? 09:13:59

22 Q. Yeah. I'm trying to understand just what the 09:14:03  
23 process flow is. 09:14:04

24 Do some agencies have to act and then others act 09:14:06  
25 or does everyone act at once? 09:14:08



1           A.     That's a very good question.  The -- I don't           09:14:12  
2     think all of the agencies act at once.  On the -- when           09:14:16  
3     the State issues its 401 Certification, the State           09:14:22  
4     coordinates that issuance with resource agencies.  And           09:14:26  
5     this is issued in advance of the Corps issuing its           09:14:32  
6     404 Permit.           09:14:35  
7  
8           And while we obtain the advice of -- we consult           09:14:38  
9     with U.S. Fish and Wildlife, the Corps, and -- Corps of           09:14:44  
10    Engineers.  But that's not their final say on the           09:14:50  
11    project; although, typically, that's when they're issuing           09:14:57  
12    any of their major concerns, so we kind of know what they           09:15:01  
13    are.  But I think the Corps also consults with them           09:15:05  
14    before it finalizes its decision on the 404 Permit.           09:15:08  
15  
16           Q.     Okay.  So if I understand correctly, the           09:15:12  
17    401 Certification process would start first.           09:15:15  
18  
19           A.     Yes.           09:15:17  
20  
21           Q.     And that would involve the Regional Board, Army           09:15:17  
22    Corps of Engineers, U.S. Fish and Wildlife service,           09:15:20  
23    Department of Fish and Game, essentially the resource           09:15:24  
24    agencies?           09:15:27  
25  
26           A.     Yes.           09:15:28  
27  
28           Q.     And once that process includes, then the Army           09:15:28  
29    Corps of Engineers can then issue its 404 Permit for           09:15:30  
30    dredge fill operations; correct?           09:15:35  
31  
32           A.     Right.  Right, yes.           09:15:36

1 Q. And then presumably at some point after that, 09:15:37  
2 there would have to be some coastal development process 09:15:40  
3 with the agencies that regulate coastal development; 09:15:42  
4 correct? 09:15:45  
5 A. I have no personal experience with that process. 09:15:48  
6 So I can't really give you an accurate answer. 09:15:51  
7 Q. Okay. 09:15:55  
8 A. And then again, what we just talked about was 09:15:57  
9 the 401 Certification. And then there is yet another 09:16:01  
10 permitting process for the -- for after the -- to 09:16:05  
11 regulate the facility after it's constructed. 09:16:11  
12 Q. Is that permitting process done in advance of -- 09:16:14  
13 of the disposal of the contaminated sediment in the bay? 09:16:16  
14 A. Yeah. Typically, it would be in advance, yes. 09:16:21  
15 Q. Okay. And that's the WDR -- 09:16:26  
16 A. Yes. 09:16:29  
17 Q. -- process you described. 09:16:30  
18 A. Yes. Yes. 09:16:31  
19 Q. WDR stands for? 09:16:32  
20 A. Waste discharge requirements under the 09:16:34  
21 California Water Code. 09:16:36  
22 Q. Okay. So if I'm understanding correct, that's 09:16:37  
23 the permit that allows the sediment to be placed in 09:16:40  
24 the -- in the bay? 09:16:43  
25 A. Yeah. 09:16:44

1 Q. And requires the long-term monitoring associated 09:16:45  
2 with it? 09:16:48

3 A. Yes. Right, yes. 09:16:48

4 THE COURT REPORTER: Sir -- 09:16:49

5 MR. RICHARDSON: Do you know -- I'm sorry. 09:16:49

6 THE COURT REPORTER: Try to wait until he's 09:16:55  
7 finished before you answer. 09:16:57

8 THE WITNESS: Okay. 09:16:58

9 THE COURT REPORTER: Thank you. 09:16:59

10 BY MR. RICHARDSON: 09:16:59

11 Q. Do you know roughly how long that permitting 09:17:00  
12 process would take? 09:17:01

13 A. It -- I'm thinking back to Convair Lagoon. And 09:17:07  
14 I don't remember it as being a lengthy permitting 09:17:18  
15 process. It was fairly straightforward since the cleanup 09:17:24  
16 levels had already been set by the board. There wasn't a 09:17:33  
17 lot of controversy associated with it. So I would say it 09:17:40  
18 was a six-month process, something like that. Maybe 09:17:46  
19 less. 09:17:49

20 Q. Okay. And so how long typically does it take to 09:17:52  
21 issue a 401 Cert? 09:17:55

22 A. They can be issued very quickly. I would -- I 09:17:58  
23 mean, there's some statutory deadlines involved in that, 09:18:03  
24 like a 21-day public notice period. I'm guessing 09:18:06  
25 two months, something like that. 09:18:16

1 Q. Two months at best; right? 09:18:18  
2 A. Right. 09:18:22  
3 Q. So there's an application process? 09:18:22  
4 A. Yes. 09:18:25  
5 Q. The Regional Board staff reviews the 09:18:26  
6 application. 09:18:28  
7 A. Right. 09:18:29  
8 Q. Regional Board staff then develops the 09:18:29  
9 conditions under which they deem it to meet 401 of the 09:18:30  
10 Clean Water Act? 09:18:33  
11 A. Right. And -- and then they issue a 09:18:34  
12 certification. 09:18:34  
13 Q. And then that's out for public notice? 09:18:37  
14 A. Yeah. Once the certification -- yeah. It's put 09:18:41  
15 in final form, and then it's -- oh. 09:18:45  
16 The public notice is of the board's intent to 09:18:52  
17 issue the certification. So this notice is issued 09:18:55  
18 earlier on in the process. Once the staff has decided 09:18:58  
19 the application is complete and ready to proceed with 09:19:02  
20 developing the final document, they'll post notice of 09:19:06  
21 that intent on the board's website, and then the 09:19:09  
22 certification is issued. 09:19:14  
23 Q. So there's an application? 09:19:17  
24 A. Yes. 09:19:18  
25 Q. The application is reviewed. 09:19:18

1 A. Yes. 09:19:20

2 Q. The application is deemed complete. 09:19:20

3 A. Yes. 09:19:23

4 Q. There's public notice. 09:19:23

5 A. Yes. 09:19:24

6 Q. And then there's a public comment period. 09:19:25

7 A. Right. 09:19:27

8 Q. And then there's a hearing on the 401 Cert, or 09:19:27

9 it can be issued by staff. 09:19:30

10 A. It can be issued by the executive officer, yes. 09:19:31

11 Q. Okay. 09:19:35

12 A. Without a hearing. 09:19:36

13 Q. That sounds like more than two months to me. Is 09:19:37

14 that the case? 09:19:40

15 A. The -- it's one of these programs where the 09:19:41

16 workload is very high. And the staff resources are low. 09:19:44

17 And it -- the -- just depends on how complex the proposal 09:19:51

18 is and that type of thing. I would say for this type of 09:19:55

19 thing, that might be optimistic. 09:19:58

20 Q. For two months? 09:20:01

21 A. For two months, yeah. 09:20:02

22 Q. So maybe on the -- on the short end, two months. 09:20:04

23 A. Yeah. 09:20:06

24 Q. On the average? 09:20:06

25 A. Oh, I could -- I'd have to consult with my staff 09:20:09

1 to get that. I -- any number I would give would -- I 09:20:13  
2 would just be kind of hazarding a guess. 09:20:21

3 Q. That's fair. I don't want you to guess. 09:20:24  
4 Do you know roughly the maximum amount of time 09:20:27  
5 it would take to issue a 401 Cert? 09:20:29

6 A. Well, yeah. Some of the certifications on the 09:20:32  
7 more complicated projects go on for a year or more. As 09:20:36  
8 part of this process, the -- if habitat is destroyed as 09:20:44  
9 part of construction of whatever the project is, then 09:20:57  
10 there's mitigation required for that. And there is a lot 09:21:01  
11 of -- can be a lot of back and forth as to what that 09:21:06  
12 mitigation would be. 09:21:09

13 Q. And so would there be mitigation associated with 09:21:13  
14 the CDF, confined disposal facility, for the site at 09:21:15  
15 Convair Lagoon? 09:21:20

16 A. There -- yes, there could -- that could trigger 09:21:21  
17 the need for that, yes. 09:21:25

18 Q. Wouldn't you view that process as a fairly 09:21:29  
19 complicated process? 09:21:31

20 A. Yes. It's certainly some controversy associated 09:21:34  
21 with it. So it could be, yes. 09:21:40

22 Q. There's an existing cap at Convair Lagoon? 09:21:44  
23 A. Yes. 09:21:46  
24 Q. And that cap has contamination on top of it? 09:21:46  
25 A. Yes. Yeah, it does. Although, there's a big -- 09:21:49

1       been a lot of investigation underway to deal with the       09:21:56  
2       continued discharges onto the cap. And so that's on the       09:22:03  
3       way to getting resolved. But yeah. Currently, there are       09:22:07  
4       contaminants on top of the cap.       09:22:11  
5           Q.    Do you know how long it took for the       09:22:16  
6       Regional Board to issue the last 401 Certification for       09:22:19  
7       San Diego Bay?       09:22:22  
8           A.    No, I do not. I'm trying to -- oh. Yeah.       09:22:24  
9       There was one that we issued for BAE to conduct dredging       09:22:32  
10      activities, maintenance dredging at their site. And we       09:22:41  
11      did -- had a kind of a expedited review process to try to       09:22:49  
12      meet BAE's time frame for getting that work done. And I       09:22:54  
13      recall it was about a two-month process.       09:23:02  
14           Q.    And did that 401 Certification involve placement       09:23:05  
15      of contaminated sediment back in San Diego Bay?       09:23:07  
16           A.    I -- I don't recall. No, I don't think it did,       09:23:10  
17      no.       09:23:13  
18           Q.    Are there any other 401 Certifications currently       09:23:14  
19      pending for San Diego Bay?       09:23:17  
20           A.    I'm -- I -- I -- I don't know. There well could       09:23:19  
21      be, yes.       09:23:23  
22           Q.    So after the 401 Cert is issued, then there's a       09:23:26  
23      404 permitting process?       09:23:29  
24           A.    Yes.       09:23:31  
25           Q.    How long does that process usually take?       09:23:31

1           A.    I -- I think it follows fairly quickly after the 09:23:33  
2           State issue -- or the board issues its 401 Certification 09:23:43  
3           process.  But I -- I can't give you any firm time frames 09:23:47  
4           based on -- on my experience.  We tend to, once we get 09:23:54  
5           our work done on the certification, the staff moves on to 09:24:00  
6           their next one, and the corps does whatever the corps is 09:24:03  
7           going to do on the project. 09:24:06  
8           Q.    And do you know, is there a public comment 09:24:08  
9           period for the 404 Permit? 09:24:10  
10          A.    I don't know that.  I assume that there probably 09:24:13  
11          is, yes. 09:24:14  
12          Q.    Do you know how long the -- that usually takes 09:24:16  
13          to issue a 404 Permit? 09:24:18  
14          A.    No, I do -- do not know. 09:24:22  
15          Q.    After the 404 Permit is issued, then there's a 09:24:23  
16          process for -- there may be a process for coastal 09:24:26  
17          development permitting, but you're not aware of that; is 09:24:30  
18          that correct? 09:24:33  
19          A.    Yes. 09:24:33  
20          Q.    So that -- you would not be aware of how long 09:24:34  
21          that process takes? 09:24:36  
22          A.    No.  I don't have experience with that.  As 09:24:37  
23          I'm -- now that you're mentioning it, I do remember that 09:24:39  
24          process becoming triggered by the Convair Lagoon project, 09:24:43  
25          getting a coastal permit from the Coastal Commission. 09:24:50



1 Q. Do you recall the nature of that process? 09:24:54  
2 A. No. 09:24:57  
3 Q. Do you recall the time it took for the 09:24:58  
4 Coastal Commission to rule on that? 09:25:00  
5 A. No. I don't know. 09:25:04  
6 Q. Okay. 09:25:09  
7 A. I don't know. 09:25:10  
8 Q. After this coastal development permit process, 09:25:11  
9 then WDRs would be issued for the construction and 09:25:13  
10 long-term monitoring of the CDF; is that correct? 09:25:17  
11 A. Yes. 09:25:22  
12 Q. How long does the process usually take? 09:25:22  
13 A. For the waste discharge requirements, the 09:25:24  
14 process -- well, with the two -- two projects that have 09:25:29  
15 been constructed so far, I remember it being not a 09:25:37  
16 length -- being a fairly quick process. And by quick, I 09:25:43  
17 would say once the complete application was turned in -- 09:25:47  
18 and this -- this would include any documentation for 09:25:55  
19 compliance with CEQA -- that the board drafted the 09:25:59  
20 requirements and got them adopted within a three to 09:26:05  
21 four-month period. 09:26:14  
22 Q. Okay. So if I understand correctly for the WDR 09:26:15  
23 process, there would be an application first? 09:26:18  
24 A. Yes. 09:26:21  
25 Q. The Regional Board staff would review that 09:26:22

1 application. 09:26:27

2 A. Yes. 09:26:27

3 Q. When the Regional Board staff concludes that the 09:26:29

4 application is deemed complete, it would be out for 09:26:30

5 public notice? 09:26:32

6 A. Yes. 09:26:33

7 Q. After the public notice period, the 09:26:33

8 Regional Board's executive officer or the Regional Board 09:26:35

9 will issue a final WDR; correct? 09:26:38

10 A. The waste discharge requirements can only be 09:26:41

11 issued by the board members themselves at their regularly 09:26:44

12 scheduled public hearings, yeah. 09:26:48

13 Q. So there would be an adjudicatory -- 09:26:51

14 A. Yes. 09:26:53

15 Q. -- hearing on the WDRs? 09:26:54

16 A. The draft WDRs, yes. 09:26:55

17 Q. And then if approved by the board, they would be 09:26:58

18 final? 09:27:01

19 A. That's correct. 09:27:01

20 Q. You mentioned the CEQA process. 09:27:02

21 A. Yes. 09:27:04

22 Q. At some point in the process, I guess CEQA may 09:27:05

23 be triggered? 09:27:07

24 A. Yes. When the State issues waste discharge 09:27:08

25 requirements under, I think it's Water Code Section 13261 09:27:11

1 or somewhere in that vicinity, that action triggers -- 09:27:24  
2 the board needs to certify compliance with the 09:27:31  
3 requirements of CEQA in adopting the permit. 09:27:35  
4 Q. And does CEQA have statutorily mandated public 09:27:41  
5 review periods? 09:27:46  
6 A. Yes, it does. 09:27:47  
7 Q. Do you know, Mr. Barker, whether any of these 09:27:51  
8 stages of the permitting process are subject to challenge 09:27:53  
9 by interested parties? 09:27:57  
10 A. I think any of the stages. The typical stage 09:27:59  
11 that is done is where -- where the board has drafted 09:28:07  
12 waste discharge requirements that are proposed for board 09:28:16  
13 adoption. And then we circulate them for review and -- 09:28:19  
14 and set a period for interested persons to submit 09:28:25  
15 comments. 09:28:28  
16 Q. And if interested persons are not happy with the 09:28:30  
17 result at the Regional Board, they have an opportunity to 09:28:32  
18 appeal that decision to the State Board; is that correct? 09:28:35  
19 A. That is correct, yes. 09:28:38  
20 Q. And if they don't like the decision out of the 09:28:39  
21 State Board, they have the opportunity to appeal to a 09:28:41  
22 judge; correct? 09:28:44  
23 A. That is correct. 09:28:44  
24 Q. Do you have any experience permitting a confined 09:28:48  
25 disposal facility in San Diego Bay? 09:28:51

1 09:28:53

2 A. Yes. The Convair Lagoon and the Campbell 09:29:00

3 facility. 09:29:03

4 Q. My understanding is that both of those are 09:29:04

5 confined aquatic disposal facilities -- 09:29:07

6 A. Okay. 09:29:09

7 Q. -- as compared to a near shore confined disposal 09:29:09

8 facility. 09:29:13

9 A. Okay. 09:29:13

10 Q. So I'm -- Sorry. 09:29:13

11 So I'm asking specifically, do you have any 09:29:13

12 experience permitting a near shore confined disposal 09:29:15

13 facility? 09:29:18

14 A. For the type that you've described, no, I do 09:29:19

15 not. 09:29:21

16 Q. If a confined aquatic disposal facility or a 09:29:25

17 near shore confined disposal facility are selected for 09:29:29

18 appropriate repository from the contaminated sediments 09:29:33

19 from the NASSCO site, would dredging be allowed to occur 09:29:37

20 at NASSCO until this permitting process is complete? 09:29:40

21 A. There's a -- there's a possibility that could be 09:29:50

22 done where the material is dredged and staged at some 09:29:51

23 location and stockpiled for disposal. Although, the 09:29:51

24 creation of that stockpile, where the stockpile exceeded 09:30:08

25 a certain number of days, might trigger itself the need 09:30:12

1 to obtain waste discharge requirements for that. There 09:30:16  
2 is -- I'll just stop there. 09:30:27

3 Q. For confined disposal facilities or confined 09:30:29  
4 aquatic disposal facilities, are sediments typically 09:30:32  
5 staged before they're placed into those units? 09:30:36

6 A. The two sites for -- for the aquatic disposal 09:30:40  
7 facility, my experience with that was the -- the 09:30:48  
8 sediments were not dredged out of the bay and stockpiled 09:30:53  
9 on land. They were -- there was some dredging involved, 09:30:57  
10 but it was mostly to concentrate the material that would 09:31:01  
11 be contained within the cap. And so I don't -- don't 09:31:03  
12 remember any staging involved with those. 09:31:08

13 Q. Has a location for staging been identified in 09:31:14  
14 the shipyard matter? 09:31:17

15 A. Not as yet, no. 09:31:21

16 Q. Excuse me. 09:31:22

17 If the permitting process that we described 09:31:31  
18 previously is implemented for a confined disposal 09:31:35  
19 facility, isn't there a reasonable likelihood that that 09:31:39  
20 would delay the actual dredging of the shipyard? 09:31:41

21 A. It could. 09:31:44

22 Q. Would you agree that it's likely? 09:31:46

23 A. I would -- there's certainly a potential for 09:31:53  
24 that, as best I could speculate. It -- it would be 09:31:57  
25 highly dependent on how quickly various parties came into 09:32:11

1 agreement and how quickly people really wanted to move on 09:32:15  
2 it. 09:32:18

3 Q. Would it also depend on what other interested 09:32:20  
4 persons such as the public would view? 09:32:25

5 A. Yes. 09:32:27

6 Q. Maybe neighboring landowners? 09:32:31

7 A. Yes. 09:32:33

8 Q. After the construction of the confined disposal 09:32:37  
9 facility, what agency would have land use authority over 09:32:41  
10 that? 09:32:44

11 MR. CARRIGAN: Vague. Go ahead. You can answer 09:32:48  
12 if you understand the question. 09:32:49

13 THE WITNESS: Yes. The board's waste discharge 09:32:52  
14 requirements could have restrictions on types of land use 09:32:56  
15 activities at the site. And so I have some experience 09:33:05  
16 with that. 09:33:11

17 The -- you were -- the question was, what type 09:33:14  
18 of land use restrictions might there be? 09:33:22

19 BY MR. RICHARDSON: 09:33:25

20 Q. It's actually who would have the authority over 09:33:27  
21 the land use. 09:33:31

22 MR. CARRIGAN: Calls for a legal conclusion. 09:33:32  
23 You can answer if you know. 09:33:34

24 THE WITNESS: You know, if the facility is 09:33:35  
25 constructed on lands under the jurisdiction of the 09:33:38

1 Port District, certainly they would have jurisdiction. 09:33:41  
2 And that's about -- I don't have anything to add to that. 09:33:49  
3 BY MR. RICHARDSON: 09:33:53  
4 Q. Okay. So if I understand correctly, the -- the 09:33:54  
5 Regional Board staff would have some type of restrictions 09:33:57  
6 on the use of -- 09:33:59  
7 A. The waste discharge requirements could -- could 09:34:00  
8 have some restrictions, yes. 09:34:01  
9 MR. CARRIGAN: Let him finish his question 09:34:03  
10 before you answer. Just as a formality. 09:34:05  
11 THE WITNESS: Okay. 09:34:07  
12 MR. CARRIGAN: Okay. 09:34:09  
13 BY MR. RICHARDSON: 09:34:09  
14 Q. And so the Port District or whatever entity has 09:34:10  
15 control over the land use may also have restrictions; 09:34:13  
16 correct? 09:34:16  
17 A. Yes. Or -- yes. As I'm speaking, another 09:34:22  
18 agency could be the State Lands Commission if it's 09:34:27  
19 constructed on lands ultimately owned by the State. 09:34:32  
20 And -- yeah. 09:34:36  
21 Q. So there may be some process with the State 09:34:41  
22 Lands Commission to get approval to construct the -- 09:34:42  
23 A. Yes, possibly so. 09:34:45  
24 Q. You mentioned habitat mitigation earlier. Is it 09:34:48  
25 common for habitat mitigation land to be required if a 09:34:50

1 CDF is selected as the remedy? 09:34:54

2 A. Yes. It's where habitat is removed from the bay 09:35:00

3 as a result of a construction of a project, it's common 09:35:05

4 to have some type of mitigation for that -- be part of 09:35:08

5 the process. 09:35:16

6 Q. So a CDF removes some form of navigable water in 09:35:20

7 the bay; correct? 09:35:26

8 A. Yes, it could, yes. I suppose a scenario might 09:35:28

9 be where the containment facility is exactly on top of 09:35:34

10 the other facility. But it's likely that this would 09:35:37

11 probably be bigger than that, yeah. 09:35:42

12 Q. So there would be some type of offset -- 09:35:44

13 A. Yes. 09:35:46

14 Q. -- for taking that? 09:35:46

15 A. Yes. 09:35:48

16 Q. And then if there's eelgrass in the area, there 09:35:49

17 may be some offset for eelgrass? 09:35:51

18 A. Yes, that's correct. 09:35:55

19 Q. Any other species mitigation that might be 09:35:56

20 required? 09:35:59

21 A. I can't think -- think of any right now. I 09:36:03

22 think, if I recall, it was an eelgrass type of mitigation 09:36:06

23 where eelgrass beds were established in another part of 09:36:12

24 the bay to compensate. 09:36:16

25 Q. So if I understand correctly, throughout this 09:36:19



1 permitting process there would be some negotiation 09:36:21  
2 involving the mitigation that would be necessary -- 09:36:24  
3 A. Yes. 09:36:25  
4 Q. -- for the creation of a CDF? 09:36:26  
5 A. Yes. 09:36:28  
6 Q. Is there a banking system for credits for the 09:36:40  
7 types of systems that would need to be mitigated? 09:36:42  
8 A. Yes, there is. There are mitigation banks that 09:36:44  
9 have been established where a project proponent as part 09:36:47  
10 of a -- 401 Certification has to mitigate for impacts. 09:36:53  
11 And they can purchase mitigation credits from these, what 09:36:59  
12 are called mitigation banks, yeah. 09:37:06  
13 Q. Got it. 09:37:08  
14 And for the type of mitigation that would be 09:37:09  
15 required for a confined disposal facility in 09:37:11  
16 San Diego Bay, are there currently credits available? 09:37:15  
17 A. I'm not aware -- aware of any. These are -- the 09:37:18  
18 ones -- the banks I'm aware of are mostly -- they're 09:37:22  
19 inland facilities. And I'm not aware of a San Diego Bay 09:37:26  
20 mitigation bank. 09:37:30  
21 Q. Okay. 09:37:33  
22 I want to talk for a minute about the design 09:37:33  
23 issues regarding a CAD or a CDF. 09:37:35  
24 A. Okay. 09:37:41  
25 Q. Is it correct that the contaminated sediment 09:37:42

1 must be isolated on all sides, top and bottom? 09:37:44

2 A. It -- the key goal of the project is to separate 09:37:48

3 the material from San Diego Bay waters, basically to -- 09:37:54

4 to separate it from the beneficial uses of San Diego Bay, 09:38:03

5 to fully contain it. 09:38:09

6 Q. Okay. So one of the design issues is ensuring 09:38:10

7 that the -- there's no sea water intrusion, for example, 09:38:13

8 into the CDF? 09:38:16

9 A. Yes. That -- that -- that could be a 09:38:23

10 consideration, yes. 09:38:25

11 Q. Well, if there is sea water intrusion into the 09:38:26

12 CDF contaminated sediments, there would be potential 09:38:29

13 release; correct? 09:38:31

14 A. Potential releases, yes. 09:38:33

15 Q. So I would think it would be very important to 09:38:34

16 ensure that there's no connectivity -- 09:38:36

17 A. Yes. 09:38:38

18 Q. -- between the bay and the CDF. 09:38:38

19 A. Right. Yes. 09:38:39

20 Q. And is that true for groundwater also? 09:38:40

21 A. I don't remember that coming up with groundwater 09:38:43

22 with the Convair Lagoon cap or the Campbell cap. It was 09:38:48

23 mostly dealing with containing the contaminants and 09:38:51

24 separating them from the San Diego Bay marine 09:38:57

25 environment, yes. 09:39:01

1 Q. Okay. But if there is groundwater connectivity 09:39:02  
2 with the contaminated sediments in the CDF, then it would 09:39:06  
3 create a potential exposure pathway; right? 09:39:11  
4 A. Are you referring to connectivity with upland 09:39:14  
5 groundwater sources or -- or... 09:39:16  
6 Q. Correct. 09:39:20  
7 A. Okay. I -- yeah, possibly, there could be a 09:39:20  
8 pathway. A mitigation for that is that the groundwater 09:39:28  
9 along the bay, except for a small portion in South Bay -- 09:39:34  
10 this is on the upland side -- doesn't have beneficial 09:39:39  
11 uses assigned to it. So it's kind of a neutral zone in a 09:39:42  
12 way. 09:39:48  
13 Q. So if there was -- if there were contaminants 09:39:49  
14 migrating from a CDF into groundwater underneath upland 09:39:52  
15 areas, that would not be a concern to the Regional Board? 09:39:57  
16 A. The concern would -- there might be some concern 09:40:03  
17 over some type of nuisance condition that could develop 09:40:07  
18 from that. But the concern with that scenario wouldn't 09:40:10  
19 be the same as if it was an actively used groundwater 09:40:18  
20 aquifer for drinking purposes. 09:40:23  
21 But if it's -- again, these are groundwater 09:40:25  
22 basins that have no beneficial uses assigned to it. So 09:40:29  
23 typically, the board's -- on the upland side when there's 09:40:32  
24 discharges that go into them, it's mostly a risk-based 09:40:38  
25 type of cleanup versus insistence on cleaning all the 09:40:42

1 groundwater up to meet a particular standard. So just 09:40:46  
2 the water quality concerns are less. 09:40:53  
3 Q. Okay. So if there were releases from a CDF into 09:40:55  
4 the groundwater in a nonbeneficial use area -- 09:41:00  
5 A. Yes. 09:41:03  
6 Q. -- would the Regional Board require sampling of 09:41:04  
7 the groundwater? 09:41:07  
8 A. It's possible that we would, yes. 09:41:11  
9 Q. Some type of risk evaluation to determine 09:41:14  
10 whether there are significant risks associated with that 09:41:17  
11 migration? 09:41:20  
12 A. It's -- it is possible, yes. And another 09:41:22  
13 scenario might be where there's a pathway to groundwater, 09:41:28  
14 and then that pathway includes, just due to the tidal 09:41:34  
15 fluctuations, where the groundwater moves the 09:41:39  
16 contaminants to some other location type scenario as 09:41:45  
17 well, possibly for re-entry into the bay. So yeah. 09:41:49  
18 Q. So on -- on balance, it sounds like a design 09:41:55  
19 criteria would be trying to ensure that there's not a 09:41:57  
20 groundwater intrusion. 09:41:59  
21 A. Yes. Certainly a consideration of that pathway, 09:42:01  
22 yes, would be incorporated. 09:42:03  
23 Q. Okay. 09:42:05  
24 And the monitoring that may be required for a 09:42:06  
25 CDF, I assume that there would be some type of water 09:42:09

1 analysis in the area. 09:42:13

2 A. Yes. The -- although it might -- it might be 09:42:18

3 more in the form of sediment monitoring, I think. I -- 09:42:37

4 the primary concerns would be making sure the containment 09:42:44

5 facility is not eroding in some manner. And just having 09:42:48

6 a monitoring system that could detect leakage from the 09:42:54

7 facility in some way. Mussel type of monitoring, it 09:42:59

8 might be considered, sediment monitoring. 09:43:12

9 Q. So by mussel monitoring, you mean sampling 09:43:19

10 mussels -- mussel tissue from mussels that are collected 09:43:23

11 at the sight to see if they're accumulating pollutants? 09:43:24

12 A. Well, it's more mussels are sometimes used as 09:43:30

13 sentential organisms, where they're not necessarily 09:43:32

14 native to the site but are transplanted there and 09:43:36

15 suspended in the water column. And then periodically, 09:43:39

16 say, after three months or something, the mussels are 09:43:44

17 collected and the tissues analyzed to see if there's 09:43:48

18 indication of contaminants in the water column. 09:43:52

19 Q. For a near shore confined disposal facility 09:43:58

20 where land is being created, would there be some 09:44:01

21 potential for aboveground monitoring, for example, of 09:44:04

22 vapors or anything else? 09:44:07

23 A. It's -- I don't want to say no. It's -- it's 09:44:15

24 possible, yes. 09:44:22

25 Q. Would another design consideration be the 09:44:22

1 potential for settlement over time of materials in the 09:44:24  
2 CDF? 09:44:29

3 A. Yes, sloughing or where the containment facility 09:44:30  
4 loses its integrity and form, yes. 09:44:35

5 Q. So that could possibly be erosion by currents in 09:44:40  
6 the bay? 09:44:44

7 A. Yes. 09:44:45

8 Q. Erosion by storm events? 09:44:45

9 A. (Nods head.) 09:44:48

10 Q. Is that also a yes? 09:44:48

11 A. Yes. 09:44:49

12 Q. Erosion by vessel wash? 09:44:51

13 A. Yes. Yeah, physical disturbance from vessel 09:44:56  
14 movement, yes. 09:45:00

15 Q. Issues related to erosion from sea level rise? 09:45:02

16 A. I -- no experience with that. But it's 09:45:12  
17 possible, yes. 09:45:17

18 Q. Has the public responded in any way to the 09:45:22  
19 Regional Board on confined aquatic disposal facilities 09:45:25  
20 and confined near shore disposal facilities? 09:45:29

21 MR. CARRIGAN: Overbroad. Vague. 09:45:33

22 THE WITNESS: I can just answer that from the 09:45:36  
23 two projects I've had experience with. The -- the public 09:45:37  
24 concerns with the Campbell facility were that they didn't 09:45:50  
25 feel the board's cleanup levels were stringent enough, 09:45:55

1 and they wanted the facility design to achieve a more 09:46:00  
2 stringent level by covering more contaminants. So that 09:46:07  
3 was the -- it wasn't with the construction of the 09:46:12  
4 facility. 09:46:16  
5 On Convair Lagoon, I -- there were similar 09:46:20  
6 concerns that came up where -- and this time it was more 09:46:27  
7 from a resource agency that wanted the facility bigger 09:46:29  
8 than what was dictated by the board's cleanup level. So 09:46:33  
9 the -- but both of these projects were for where the 09:46:36  
10 contaminants were in place, not for where the 09:46:42  
11 contaminants were being moved from another part of the 09:46:45  
12 bay to them. 09:46:48  
13 Q. So if I stand -- understand that correctly, for 09:46:52  
14 the Shipyard Sediment Site, the sediment would be dredged 09:46:54  
15 up, moved to somewhere else in the bay, and then placed 09:46:58  
16 there? 09:47:01  
17 A. Yes. 09:47:01  
18 Q. And so have you received any views from the 09:47:02  
19 environmental groups on moving contaminated sediment from 09:47:05  
20 one part of San Diego Bay and moving it to a different 09:47:09  
21 part? 09:47:12  
22 A. No, not as yet, no. 09:47:12  
23 Q. So you don't know how they would view that 09:47:14  
24 process? 09:47:16  
25 A. No, I -- no, I don't know. 09:47:16

1 Q. If a problem occurred at some point in the 09:47:22  
2 future with a confined aquatic disposal facility or a 09:47:23  
3 near shore confined disposal facility, and contamination 09:47:27  
4 is observed outside so that there is a problem, would 09:47:31  
5 there be any way to distinguish the contamination among 09:47:34  
6 the pre-existing pollution at the site as compared to the 09:47:39  
7 NASSCO sediment, as compared to the sediment that's 09:47:43  
8 placed there from the BAE shipyard? 09:47:46  
9 A. It would be -- part of it -- it's kind of a -- 09:47:48  
10 it would not be a straightforward process to do that. It 09:48:07  
11 just depends on how the waste -- the facility's 09:48:11  
12 constructed -- constructed, how the waste is segregated 09:48:14  
13 there, all those types of factors might -- there's a 09:48:18  
14 certain type of PCB waste there. Maybe there's 09:48:26  
15 differences between that and the type of PCBs that are in 09:48:28  
16 NASSCO's or the shipyard sediment. 09:48:32  
17 Q. So a molecule of copper that's found outside of 09:48:37  
18 a CDF -- 09:48:41  
19 A. Mm-hmm. 09:48:42  
20 Q. There would be no way to distinguish that 09:48:42  
21 molecule of copper from something that's pre-existing at 09:48:45  
22 the site, something that came from NASSCO, something that 09:48:48  
23 came from BAE? 09:48:51  
24 A. Right. It would be a difficult process. 09:48:52  
25 Q. If not impossible; right? 09:48:54



1 A. Right. 09:48:56

2 Q. For confined aquatic disposal facilities or near 09:48:59

3 shore confined disposal facilities, would the 09:49:03

4 Regional Board or some other agency require financial 09:49:05

5 assurance for the long-term maintenance and monitoring? 09:49:07

6 A. That's possible. There's a set of regulations 09:49:11

7 that would govern the design of the facility. And the 09:49:15

8 regulations are, I think -- believe they are in either 09:49:23

9 Title 23 or Title 27, depending on if it's considered a 09:49:28

10 hazardous waste facility or a designated waste facility. 09:49:32

11 Both of those are defined terms in California Code of 09:49:38

12 Regulations. And-- and they have financial assurance 09:49:42

13 elements as part of those regulations, yes. 09:49:47

14 Q. We also discussed dredging at length yesterday. 09:49:58

15 I'd like to ask a few follow-up questions -- 09:50:01

16 A. Yes. 09:50:04

17 Q. -- on that technology. 09:50:04

18 Did the Cleanup Team evaluate any difficulties 09:50:06

19 that we've not already discussed concerning the dredging 09:50:11

20 to background conditions? 09:50:15

21 MR. CARRIGAN: Vague. 09:50:17

22 THE WITNESS: I am just thinking back to 09:50:20

23 yesterday. I -- I think we covered the -- the broad 09:50:30

24 spectrum of the issues associated with that. I can't 09:50:33

25 think of anything -- anything else. 09:50:37

1 BY MR. RICHARDSON: 09:50:42

2 Q. For example, there were structural stability 09:50:43

3 concerns around structures; correct? 09:50:45

4 A. Yes. 09:50:48

5 Q. There was an issue of fines, the percent fines, 09:50:48

6 and whether there would be resuspension? 09:50:51

7 A. Yes, right. 09:50:53

8 Q. I have a question about the magnitude of -- of 09:50:55

9 the potential dredging if we go to background. 09:50:58

10 A. Okay. 09:51:01

11 Q. Do you know how many cubic yards of sediment 09:51:02

12 would require to be dredged if the Regional Board ordered 09:51:05

13 cleanup to background conditions? 09:51:09

14 A. I think there are estimates on that in -- in the 09:51:13

15 record. I don't know them off the top of my head. 09:51:16

16 Q. Would you agree that approximately a million 09:51:19

17 cubic yards? 09:51:21

18 A. It sounds -- sounds right. 09:51:23

19 Q. Are you aware of any other sites in 09:51:27

20 San Diego Bay where more than a million cubic yards of 09:51:28

21 sediment were dredged? 09:51:32

22 A. For a cleanup project, no. There's been sizable 09:51:36

23 maintenance dredging projects. But I don't even think 09:51:41

24 they approached a million cubic yards. 09:51:45

25 Q. Would you agree that under these circumstances, 09:51:53

1 dredging a million cubic yards of contaminated sediment 09:51:55  
2 would be technologically infeasible? 09:51:59  
3 MR. CARRIGAN: Vague. 09:52:02  
4 THE WITNESS: I think our position was we've -- 09:52:03  
5 we've mostly approached that from the economic 09:52:12  
6 feasibility side of the equation, just -- and the 09:52:15  
7 benefits associated with that and concluded it was not 09:52:19  
8 feasible from that perspective. 09:52:23  
9 A million cubic yards of dredged material and 09:52:29  
10 disposing of that would be a challenge. There's no 09:52:33  
11 argument there. Not -- and an expensive challenge. And 09:52:37  
12 the board has not had regulatory experience with dealing 09:52:46  
13 with that volume of material and -- and -- and regulating 09:52:50  
14 its disposal. So it would be new territory for the 09:53:00  
15 board, as well. 09:53:04  
16 BY MR. RICHARDSON: 09:53:05  
17 Q. And among those challenges, a significant 09:53:05  
18 challenge would be just the management and handling of a 09:53:07  
19 million cubic yards of sediment; correct? 09:53:12  
20 A. Yes. 09:53:15  
21 Q. Such as finding a place to dewater it? 09:53:15  
22 A. Exactly. Dewatering, staging, the transport of 09:53:18  
23 it, the -- all of those considerations. 09:53:21  
24 Q. The truck trips? 09:53:23  
25 A. Yes. 09:53:24

1 Q. Finding a landfill to take a million cubic 09:53:25  
2 yards? 09:53:27  
3 A. Yes, yes. 09:53:28  
4 Q. Let's talk about the alternative cleanup levels 09:53:34  
5 for a moment. So I'm going to refer you to Finding 31 of 09:53:37  
6 the CAO. 09:53:40  
7 A. Okay. 09:53:41  
8 Q. In Section 31 of the DTR. 09:53:42  
9 A. Okay. Let me just turn to that. 09:53:45  
10 Q. While you're looking for that, as we discussed, 09:53:57  
11 you have been designated as the Cleanup Team's person 09:54:01  
12 most knowledgeable regarding the alternative cleanup 09:54:05  
13 analysis; correct? 09:54:08  
14 A. Yes. 09:54:08  
15 Q. Do you believe you are the Cleanup Team's person 09:54:10  
16 most knowledgeable regarding the cleanup levels? 09:54:13  
17 A. Yes. 09:54:15  
18 Q. And why is that? 09:54:16  
19 A. Just because of my participation over a long 09:54:17  
20 period of time in the development of the levels, my 09:54:22  
21 supervision of the staff that put together the technical 09:54:30  
22 analysis supporting them, yes. 09:54:34  
23 Q. Thank you. And I said Section 31, but I meant 09:54:37  
24 Section 32 of the DTR. 09:54:40  
25 A. Okay. 09:54:42

1 Q. My apologies. 09:54:42

2 A. All right. 09:54:43

3 Q. So you oversaw the development of Section 32 of 09:54:44

4 the DTR; is that correct? 09:54:46

5 A. Yes. 09:54:47

6 Q. And that is also Finding 31 -- sorry -- 32 of 09:54:48

7 the order; correct? 09:54:52

8 A. Finding 32 of the order, that is correct. 09:54:53

9 Q. Great. Thank you. 09:54:58

10 I want to take a moment to discuss the 09:55:02

11 analytical process that was used to develop the 09:55:04

12 alternative cleanup levels. 09:55:07

13 A. Okay. 09:55:09

14 Q. Starting with the development of the surface 09:55:09

15 weighted average concentrations. And we call these 09:55:11

16 capital S-W-A-C, small S, SWACs; correct? 09:55:15

17 A. Yes. 09:55:21

18 Q. So when I say SWAC, you'll know what I'm 09:55:21

19 refer -- referring to? 09:55:23

20 A. Yes. 09:55:24

21 Q. So starting with the development of SWACs for 09:55:25

22 the different polygons at the shipyard site. 09:55:27

23 A. Okay. 09:55:30

24 Q. First, each polygon was based on a sampling 09:55:35

25 point located in the vicinity of that polygon; correct? 09:55:38

1 A. Yes. 09:55:42

2 Q. And is it correct that the Cleanup Team first 09:55:42

3 developed SWACs under current conditions? 09:55:44

4 A. Yes. 09:55:53

5 Q. Then the Cleanup Team ranked those polygons for 09:55:53

6 consideration in the remedial footprint. 09:55:56

7 A. Yes. 09:55:58

8 Q. Then the Cleanup Team performed the economic 09:55:59

9 feasibility analysis that we previously discussed to 09:56:02

10 confirm that alternative cleanup levels are protective; 09:56:04

11 correct? 09:56:07

12 A. That's correct. 09:56:08

13 Q. And then there was an assessment of that 09:56:09

14 protectiveness of cleanup on aquatic dependent wildlife, 09:56:11

15 aquatic wildlife, and human health; correct? 09:56:15

16 A. That's correct, yes. 09:56:19

17 Q. And the assumption was that the remedial 09:56:20

18 footprint area will equilibrate to background conditions; 09:56:22

19 correct? 09:56:26

20 A. The -- the area within the proposed footprint, 09:56:27

21 yes, that's correct. 09:56:35

22 Q. So what does the surface weighted average 09:56:36

23 concentration, or SWAC, of a primary CoC represent? 09:56:39

24 A. It represents the -- the averaging of that 09:56:44

25 constituent over the entire site. It's -- it's kind of a 09:56:52

1 way to -- maybe I'll just stop there. 09:57:01

2 Q. No. I think that's helpful. 09:57:08

3 So the -- is it correct to say that the critters 09:57:10

4 at the shipyard, the aquatic dependent wildlife, and 09:57:14

5 certain other prey species move about the site and about 09:57:18

6 San Diego Bay; correct? 09:57:23

7 A. Yes, that's correct. 09:57:24

8 Q. And so the purpose of the SWAC is to assess the 09:57:26

9 exposure of any one of those critters site-wide; is that 09:57:29

10 correct? 09:57:33

11 A. That is correct. 09:57:34

12 Q. And so referring you to page 32-8 of the DTR. 09:57:41

13 A. Yes. 09:57:49

14 Q. The last full paragraph. 09:57:49

15 A. All right. 09:57:51

16 Q. If you'd take a moment to review that, I just 09:57:52

17 have a few questions on it. 09:57:54

18 A. Okay. 09:58:42

19 Q. In the middle of the paragraph, there's a 09:58:43

20 sentence that reads, "Based on this, a SWAC for sediments 09:58:45

21 is a more appropriate method for evaluating the exposure 09:58:49

22 to chemicals that fish and lobsters incur during forging. 09:58:52

23 In turn, this approach allows more" -- "much more 09:58:56

24 accurate and realistic estimation of the bioaccumulation 09:58:59

25 of chemicals from site sediments and prey items." 09:59:02

1 Do you agree with that sentence? 09:59:05

2 A. Yes, I do. 09:59:08

3 Q. Looking now at page 32-15. 09:59:10

4 A. Okay. Thanks. 09:59:23

5 Q. Can you explain how the Cleanup Team determined 09:59:24

6 whether the alternative cleanup levels that are proposed 09:59:26

7 would result in the post remedial protection of the 09:59:30

8 beneficial use of aquatic dependent wildlife? 09:59:34

9 A. The certain prey species, receptors of concern, 09:59:39

10 were evaluated. And the species were selected in 09:59:50

11 consultation with the resource agencies for 09:59:59

12 San Diego Bay. And -- and -- and then an estimation was 10:00:04

13 made of the -- the exposure of those prey items to the 10:00:11

14 level of contaminants represented by the alter -- 10:00:22

15 alternative cleanup levels through various modeling 10:00:27

16 equations. 10:00:31

17 And -- and a risk evaluation was done in that 10:00:33

18 process. And through the use of a hazard quotient. And 10:00:36

19 a hazard quotient of less than one indicates that the 10:00:44

20 chemical is unlikely to cause adverse ecological effects 10:00:50

21 to the receptor of concern. And then a value greater 10:00:56

22 than one indicates that the receptor's exposure, that 10:01:00

23 some fraction of the population might experience adverse 10:01:09

24 effect. 10:01:13

25 Q. Okay. 10:01:14



1           A.    Okay.  And the -- the calculations and the           10:01:15  
2           analysis of that were done in a very transparent manner       10:01:18  
3           where a reader could read through the text and kind of       10:01:24  
4           follow along.   10:01:27  
5           Q.    Painfully so.   10:01:28  
6           A.    Painfully so.   10:01:30  
7           Q.    I agree with you.   10:01:31  
8                    So that was very helpful.  Thank you.  Thank       10:01:33  
9           you.   10:01:34  
10          A.    Okay.   10:01:35  
11          Q.    So if I understand the process, there's a               10:01:36  
12          NOAEL -- I'm referring, by the way, to page 32-15 in the       10:01:37  
13          middle paragraph.  There's a NOAEL, which is a No           10:01:43  
14          Observed Adverse Effect Level?                               10:01:46  
15          A.    Right.   10:01:48  
16          Q.    Below which adverse effects never occur.               10:01:48  
17          A.    Yes.   10:01:51  
18          Q.    There's a LOAEL, Lowest Observed Adverse Effects       10:01:51  
19          Level?   10:01:55  
20          A.    Right.   10:01:55  
21          Q.    And at that level, it's the lowest concentration       10:01:55  
22          where you do observe effects; correct?                       10:01:59  
23          A.    Right.  Yes.   10:02:01  
24          Q.    So there's some uncertainty between, where the       10:02:01  
25          effects are actually taking place; correct?                   10:02:03

1 A. Yes. 10:02:06

2 Q. And this section, if I understand correctly, 10:02:10

3 used the geometric mean to address that uncertainty. 10:02:11

4 A. Yes, it did. Yes. 10:02:17

5 Q. And as we discussed yesterday, the geometric 10:02:18

6 mean is a more conservative approach than taking the 10:02:20

7 algebraic mean to -- 10:02:24

8 A. Yes. The -- yes, that's correct. 10:02:28

9 Q. So is it your opinion that the use of the 10:02:30

10 geometric mean here is a valid approach -- 10:02:33

11 A. Yes. 10:02:35

12 Q. -- to assessing aquatic dependent wildlife 10:02:36

13 risks? 10:02:39

14 A. Yes, it is. 10:02:40

15 Q. By using the surface weighted average 10:02:40

16 concentrations. 10:02:43

17 A. Yes. 10:02:43

18 Q. And comparing those to the geometric mean? 10:02:44

19 A. Yes. Yes, I think all of this was a realistic 10:02:47

20 and conservative assessment. 10:02:49

21 Q. Are you also aware that the use of the geometric 10:02:51

22 mean TRV is endorsed by U.S. EPA? 10:02:55

23 A. Yes. 10:02:59

24 Q. And that's a more reliable approach than using 10:03:04

25 either the no L or the low L numbers; correct? 10:03:07

1 A. Yes. Yes, it is. 10:03:10

2 Q. Did the Cleanup Team use a geometric mean TRV 10:03:14

3 for the basic risk assessment? 10:03:19

4 A. I -- I don't -- I can't answer that. 10:03:22

5 Q. Do you know if it's been calculated? 10:03:31

6 A. No, I do not. 10:03:34

7 Q. Okay. Let's -- why don't we ask a few more 10:03:37

8 questions, then we'll take a short break. 10:03:43

9 A. Okay. All right. 10:03:46

10 Q. We're going to move into the alternative 10:03:47

11 remedies analysis. 10:03:49

12 A. Okay. 10:03:51

13 Q. So this is Finding 30 -- sorry. This is part of 10:03:58

14 Finding 30 of the -- of the CAO -- 10:04:02

15 A. Okay. 10:04:04

16 Q. -- and -- and DTR. And shows up elsewhere in 10:04:05

17 the document analysis of the alternative cleanup levels 10:04:09

18 and so on. 10:04:14

19 But to confirm, as we discussed previously, you 10:04:16

20 were designated as the Cleanup Team's person most 10:04:16

21 knowledgeable regarding alternative remedies analysis; 10:04:19

22 correct? 10:04:22

23 A. Yes. 10:04:23

24 Q. And that's including dredging, capping, aquatic 10:04:23

25 disposal, and monitoring natural attenuation; correct? 10:04:28

1           A.     Yes. 10:04:31

2           Q.     And do you believe you -- you are the Cleanup 10:04:32

3 Team's person most knowledgeable on these subjects? 10:04:36

4           A.     Yes. 10:04:39

5           Q.     And why is that? 10:04:39

6           A.     Based on my experience in supervising the staff 10:04:43

7 putting the DTR together, as well as at other sites in 10:04:52

8 San Diego Bay. 10:04:55

9           Q.     I want to ask you questions regarding 10:04:57

10 alternative remedies. I'm asking for your response in 10:05:00

11 your capacity as the Cleanup Team's person most 10:05:03

12 knowledgeable on this subject. Do you understand? 10:05:06

13           A.     Yes. 10:05:08

14           Q.     Were you involved in drafting Chapter 30 of the 10:05:10

15 DTR? 10:05:12

16           A.     Yes, or -- yes, reviewing drafts prepared by 10:05:16

17 other staff. 10:05:24

18           Q.     So you had ultimate responsibility for -- 10:05:25

19           A.     Yes. 10:05:26

20           Q.     -- Chapter 30? 10:05:27

21           A.     Yes. 10:05:29

22           MR. CARRIGAN: Counsel, now might be a good time 10:05:29

23 to go off the record. 10:05:31

24           MR. RICHARDSON: Yeah, that's fine. 10:05:32

25           THE VIDEOGRAPHER: Off the record. Time is 10:05:34

1 10:05 a.m. 10:05:36

2 (A recess was taken.) 10:05:43

3 THE VIDEOGRAPHER: Back on the record. Time is 10:25:49

4 10:25 a.m. 10:25:51

5 BY MR. RICHARDSON: 10:25:55

6 Q. Mr. Barker, before we broke, we were discussing 10:25:55

7 the alternative remedies analysis in the DTR. Other than 10:25:58

8 yourself, was there anyone else in the Cleanup Team that 10:26:02

9 was involved in the development of that discussion? 10:26:05

10 A. Yes. Tom Alo of the staff, Julie Chan, 10:26:08

11 Craig Carlisle. 10:26:19

12 Q. Anyone else? 10:26:23

13 A. Those were the principal people. 10:26:31

14 Q. And you supervised the development of this 10:26:35

15 analysis? 10:26:37

16 A. Yes. 10:26:37

17 Q. What was Mr. Alo's role? 10:26:38

18 A. Mr. Alo performed risk -- the risk calculations 10:26:40

19 in it. 10:26:45

20 Q. Anything else that Mr. Alo did? 10:26:50

21 A. And did the research on the modeling equations 10:27:03

22 we used, participated in discussions on what type of -- 10:27:07

23 of assumptions should be made for setting up the modeling 10:27:14

24 equations, et cetera. 10:27:23

25 Q. Anything else that you recall Mr. Alo doing? 10:27:26

1 A. No. 10:27:29

2 Q. What did Ms. Chan do in connection with this 10:27:31

3 analysis? 10:27:33

4 A. Basically assisted me in overseeing Tom's work 10:27:34

5 on it. And just providing another perspective on how the 10:27:38

6 analysis was set up. She also -- there's a set of 10:27:53

7 regulations dealing with criteria that must be met for 10:27:59

8 alternative cleanup levels that go beyond the risk-based 10:28:05

9 equations. 10:28:10

10 For example, where alternative levels have a 10:28:13

11 ceiling where they're supposed to be as close to 10:28:17

12 background as is technologically or economically 10:28:20

13 feasible. So she worked with me in analyzing that side 10:28:24

14 of the issue. 10:28:30

15 Q. Anything else that you recall that she did in 10:28:34

16 connection with this analysis? 10:28:36

17 A. No. 10:28:39

18 Q. And what did Mr. Carlisle do in this analysis? 10:28:41

19 A. Just participated in Cleanup Team discussions on 10:28:44

20 how the analysis was being put up and explained in the 10:28:48

21 DTR. 10:28:53

22 Q. Okay. Anything else that you recall him doing? 10:28:54

23 A. There was a number of spreadsheet calculations 10:29:01

24 that are supporting all of the assumptions that are in 10:29:04

25 the appendices. And actually, now I'm remembering 10:29:07

1 Mr. Carlisle and Barry Pulver on our staff and 10:29:13  
2 Vicente Rodriguez just helped to organize the appendices 10:29:21  
3 and get the spreadsheets in the right format, et cetera. 10:29:26  
4 So it was pretty much a team effort. 10:29:30  
5 Q. Okay. So the roles of Mr. Pulver and 10:29:35  
6 Mr. Rodriguez were largely administrative. 10:29:39  
7 A. Yes, that's correct. 10:29:41  
8 Q. But Mr. Carlisle would have the ownership of the 10:29:42  
9 spreadsheets and manipulate them. 10:29:46  
10 A. Yes, or just -- yeah, reviewing them for 10:29:49  
11 accuracy and that type of thing, yes. 10:29:50  
12 Q. Okay. 10:29:52  
13 A. He worked with Tom Alo in kind of correlating 10:29:55  
14 the spreadsheets, making sure the results of them were 10:29:59  
15 accurately reflected in the -- in the chapter, yeah. 10:30:02  
16 Q. Was there anyone else involved with the 10:30:07  
17 development of this section other than the Cleanup Team? 10:30:09  
18 A. Yes, yes. This was -- we worked with the -- 10:30:12  
19 consulted with resource agencies on the modeling 10:30:26  
20 equations that were used, on some of the assumptions that 10:30:33  
21 were made, to be sure that they were consistent with 10:30:38  
22 them, that it was a conservative scientific-based 10:30:43  
23 analysis. 10:30:46  
24 We also worked with the consultants of the 10:30:48  
25 dischargers named in the order, to collaborate with them 10:30:52

1 where we could to try to come to agreement on how the 10:30:58  
2 analysis should be done, that type of thing. 10:31:03

3 Q. Okay. So there -- would it be fair to say the 10:31:05  
4 resource agencies were involved in ensuring that the 10:31:07  
5 alternative remedies being considered were protected? 10:31:10

6 A. Yes, yeah. Now, they have not provided their 10:31:13  
7 formal comments on the DTR as yet. But we've certainly 10:31:18  
8 tried to coordinate with them along the way, yeah. 10:31:25

9 Q. Okay. 10:31:30

10 In discussing the different types of remedial 10:31:31  
11 alternatives, we discussed dredging yesterday. We 10:31:33  
12 discussed the confined aquatic disposal facilities today 10:31:39  
13 and the confined near shore disposal facilities today. 10:31:42

14 And I had an additional question on the latter 10:31:48  
15 two. Are you aware of any circumstance where the 10:31:50  
16 Regional Board ordered a discharger to establish a CDF or 10:31:57  
17 a CAD as compared to sites where the discharger requested 10:32:01  
18 to construct a CAD or CDF? 10:32:07

19 A. No, no. As a matter of fact, in the Water Code 10:32:12  
20 there is a section in there that basically prohibits the 10:32:15  
21 Regional Board from dictating a method of compliance with 10:32:21  
22 a -- a -- as far as what alternative is selected by a 10:32:25  
23 party to comply with the board's requirements. We don't 10:32:33  
24 have the jurisdiction to say, you must build a confined 10:32:37  
25 disposal facility instead of hauling material to an 10:32:42



1 upland disposal source. 10:32:45

2 Q. So as the Regional Board you have the authority 10:32:47

3 to issue the cleanup levels, and then it's the 10:32:50

4 discharger's responsibility to figure out how to meet 10:32:52

5 those standards? 10:32:55

6 A. Exactly. 10:32:56

7 Q. So again, we've discussed dredging. We've 10:32:57

8 discussed these disposal facilities. Now let's discuss 10:33:00

9 another remedial alternative that was analyzed in the 10:33:05

10 DTR, and that is natural attenuation or natural recovery. 10:33:07

11 A. Yes. 10:33:11

12 Q. What is natural attenuation or natural recovery? 10:33:13

13 A. Natural attenuation would refer to the ability 10:33:16

14 of contaminants to bind to, in this case, sediment 10:33:22

15 particles and to -- in a way that they are not 10:33:31

16 biologically available. And also, it could refer to 10:33:37

17 the -- the dispersion of contaminants over time, the 10:33:46

18 burial of contaminants through natural sediment 10:33:59

19 deposition processes that take place in water bodies. 10:34:03

20 Q. That was very helpful. 10:34:07

21 A. Okay. 10:34:08

22 Q. Thank you. 10:34:08

23 I'll refer you to page 30-1 of the DTR. In the 10:34:09

24 last paragraph, it indicates that natural recovery is a 10:34:15

25 readily -- this is a quote, "Readily employable and 10:34:19

1 proven remediation strategy." 10:34:22

2 A. Let's see. We're on -- 10:34:26

3 Q. Page 30-1. 10:34:27

4 A. Okay. Hold on. 10:34:28

5 Q. The very last paragraph. 10:34:30

6 A. All right. 10:34:31

7 Q. I think I gave you a courtesy copy earlier. 10:34:32

8 A. Okay. Let me see if I can locate that. Hang on 10:34:35

9 a second. 10:34:39

10 Q. Whatever is easier. 10:34:40

11 A. Okay. I'll just find it here. 30-1. And we 10:34:41

12 are in the -- 10:34:45

13 Q. Very last paragraph, full -- full paragraph. 10:34:53

14 A. Okay. Let me just check that. 10:34:54

15 MR. RICHARDSON: Yeah. 10:34:56

16 MS. TRACY: Kelly, what page are you on? 10:34:57

17 MR. RICHARDSON: Page 30-1 of the DTR. 10:34:59

18 MS. TRACY: Thank you. 10:35:00

19 MR. RICHARDSON: And I'm in the last full 10:35:03

20 paragraph. 10:35:04

21 THE WITNESS: Okay. I see that. 10:35:16

22 BY MR. RICHARDSON: 10:35:23

23 Q. Okay. So it says that the natural recovery 10:35:23

24 among other alternatives are readily employable and 10:35:26

25 proven remediation strategies. Do you agree with that? 10:35:29

1 A. Yes. 10:35:33

2 Q. Why does the Cleanup Team believe that natural 10:35:34  
3 recovery is a proven technology? 10:35:36

4 A. It's a strategy -- sometimes at contaminated 10:35:39  
5 sediment sites, it's -- a determination is made it's -- 10:35:44  
6 that it's better to control the source of the problem and 10:35:51  
7 just -- and not disturb the contaminants and let natural 10:36:02  
8 processes take care of any environmental effects 10:36:08  
9 associated with it. And it's -- not all sediment sites 10:36:13  
10 are cleaned up. Some are just documented but just left 10:36:20  
11 in place. 10:36:26

12 Q. So sometimes the remedy itself might cause more 10:36:28  
13 environmental problems than simply allowing -- 10:36:30

14 A. Yes. 10:36:33

15 Q. -- the natural attenuation? 10:36:33

16 A. Yes. As we've discussed, for example, when 10:36:35  
17 sites are dredged, benthic communities are destroyed in 10:36:38  
18 the process. 10:36:43

19 Q. And there's resuspension and air emissions and 10:36:43  
20 traffic issues and other things; correct? 10:36:46

21 A. Yes. Yes, that's correct. 10:36:48

22 Q. In your position at the Regional Board, have you 10:36:50  
23 been involved in any sediment remediation projects in 10:36:51  
24 which natural recovery was employed? 10:36:55

25 A. Yes. Yes, I have. 10:37:04

1 Q. And which ones were those? 10:37:07

2 A. There were -- the two that come to mind are over 10:37:09

3 in the shelter -- or excuse me -- the Commercial Basin 10:37:15

4 portion of the bay at Shelter Island Boatyard and 10:37:19

5 Eichenlaub Marine were two such facilities where the 10:37:25

6 board recognized there were contaminants in the sediment 10:37:32

7 but indicated that it was -- that natural processes would 10:37:36

8 attenuate the problem. 10:37:40

9 Q. And what were the contaminants of concern at 10:37:42

10 those sites, do you recall? 10:37:46

11 A. I believe there's a spreadsheet. 10:37:52

12 Q. In Exhibit 1210, is that the table? 10:37:55

13 A. Yes. I'd like to just look at that to brief 10:37:57

14 my -- it's that big spreadsheet, Chris. Yeah, thank you. 10:38:01

15 Let's see. Those were copper, mercury, and TBT for 10:38:11

16 Shelter Island Boatyard. And the same for 10:38:23

17 Eichenlaub Marine. 10:38:35

18 Q. Okay. And those three chemicals of concern are 10:38:37

19 three of the five primary chemicals of concern at the 10:38:39

20 NASSCO site; correct? 10:38:42

21 A. That's correct, yes. 10:38:44

22 Q. Is this remediation completed? 10:38:46

23 A. Yes. 10:38:48

24 Q. So these sites are closed? 10:38:48

25 A. Yes, they're closed sites. 10:38:50

1 Q. So would you view that as successful? 10:38:51

2 A. In the context of when that decision was made, 10:38:57

3 which was in the early '90s. I guess it's always 10:38:59

4 possible to go back and re-examine a site and establish 10:39:03

5 different criteria, might yield a different decision. 10:39:08

6 Q. Okay. Is -- is the Regional Board opening -- 10:39:12

7 reopening either of those sites? 10:39:14

8 A. There are no plans to do that, no. 10:39:15

9 Q. Okay. Are you aware of any -- I'm sorry. 10:39:17

10 Before we leave this table since we have it open, we're 10:39:22

11 in Exhibit 1210. 10:39:25

12 I also see on this table, Mr. Barker, that for a 10:39:27

13 number of the other Commercial Basin sites, natural 10:39:30

14 degradation, which I assume is a natural attenuation 10:39:34

15 method, was used for TBT. 10:39:38

16 A. Yes. 10:39:41

17 Q. Is that correct? 10:39:42

18 A. Yes. 10:39:42

19 Q. Okay. 10:39:43

20 A. Yeah. I think the board theorized there was a 10:39:43

21 pathway of degradation from tributyltin form back to 10:39:47

22 elemental tin. 10:39:53

23 Q. And those would be the Bay City Marine Site; 10:39:57

24 correct? 10:39:59

25 A. Yes. 10:40:02

1 Q. And the Driscoll Boatyard Site? 10:40:02

2 A. Yes, yes. Now that you've brought that up, 10:40:05

3 that's another example where the board recognized a 10:40:07

4 natural environmental process to address a contaminant of 10:40:10

5 concern. 10:40:18

6 Q. Okay. 10:40:18

7 Are you aware of any California State guidance 10:40:19

8 that addresses the use of natural attenuation as a 10:40:22

9 remedy? 10:40:24

10 A. California State guidance, the guidance I'm 10:40:28

11 aware of is mostly -- deals with attenuation of 10:40:32

12 contaminants in soil overlying groundwater. There may be 10:40:38

13 some fate and transport type guidance the State has for 10:40:47

14 surface water applications of that. But none are really 10:40:54

15 coming to mind. 10:40:59

16 Q. Any guidance issued by the Regional Board for 10:41:00

17 natural attenuation? 10:41:03

18 A. Let's see. There is a very old cleanup policy 10:41:11

19 that's in the Basin plan that might have some reference 10:41:17

20 to that. And I -- I can't recall it in detail. But 10:41:22

21 that's one place that I would look. 10:41:26

22 Q. Okay. Anything else you can think of? 10:41:29

23 A. No. There's -- there's -- no. 10:41:31

24 Q. What type of circumstances do you believe would 10:41:34

25 be appropriate for implementation of some type of natural 10:41:37

1 recovery remedy? 10:41:42

2 A. Circumstances? 10:41:44

3 Q. Site conditions. What type of site conditions 10:41:47

4 would be appropriate for a natural recovery? 10:41:48

5 A. The scenario we're discussing is a contaminated 10:41:52

6 marine sediment site? 10:41:56

7 Q. Correct. 10:41:57

8 A. Okay. I guess the susceptibility of the -- the 10:41:58

9 contaminants of concern to natural, I guess, degradation 10:42:09

10 processes such as for tributyltin, or natural processes 10:42:16

11 might make a contaminant less harmful to marine 10:42:25

12 organisms. The -- the -- any physical -- the 10:42:29

13 considerations on physical disturbances at the site might 10:42:47

14 be a consideration. The levels of contaminant in the 10:42:51

15 sediment would be a consideration. Those are the ones 10:42:57

16 that come to mind immediately. 10:43:05

17 Q. What about situations where significant 10:43:09

18 environmental harm will result from active dredging; 10:43:10

19 would that be a factor? 10:43:14

20 A. Yeah. I -- I think any time dredging of 10:43:16

21 contaminated sediments is done, there needs to be some 10:43:22

22 thought given to balancing the benefits that would accrue 10:43:27

23 from that versus the effects that dredging will have on 10:43:34

24 existing habitat in -- in the bay. 10:43:40

25 Q. Would you also agree that situations where 10:43:44

1 there's minimal risk to -- to human health or aquatic 10:43:46  
2 dependent wildlife or aquatic life would also be a good 10:43:50  
3 circumstance for use of natural recovery? 10:43:54  
4 MR. CARRIGAN: Incomplete hypothetical. You can 10:43:56  
5 answer. 10:43:59  
6 THE WITNESS: I believe that that would be a -- 10:44:00  
7 a consideration in the final decision. It wouldn't 10:44:04  
8 necessarily dictate that no cleanup should occur. But it 10:44:08  
9 would be a consideration, certainly. 10:44:13  
10 BY MR. RICHARDSON: 10:44:15  
11 Q. Okay. And sites where there's an imminent 10:44:15  
12 substantial risk would be less likely to implement a 10:44:19  
13 natural recovery; correct? 10:44:23  
14 A. Yes, that's right. 10:44:25  
15 Q. What about in areas where there's observed 10:44:26  
16 natural recovery occurring; would that be one of the 10:44:29  
17 factors that you would take into consideration? 10:44:33  
18 A. Certainly, that would be a -- a consideration, 10:44:37  
19 yes. 10:44:40  
20 Q. Okay. On page 30-2 of the DTR, in the second 10:44:41  
21 full paragraph, it says -- the very first sentence is 10:44:49  
22 that, "Monitored natural recovery is not a passive 10:44:55  
23 no-action or no-cost remedy." Do you see that? 10:44:58  
24 A. Yes. 10:45:02  
25 Q. Why is that? 10:45:02



1           A.    Because it's -- it's not a -- a remedial method   10:45:09  
2    where the natural recovery is not monitored.  There would   10:45:21  
3    be costs associated with monitoring whether the -- the       10:45:26  
4    theoretical natural recovery is, in fact, occurring.       10:45:32  
5            Other considerations would be physical               10:45:39  
6    disturbances to the site, whether contaminants are       10:45:42  
7    spreading to previously uncontaminated areas at levels     10:45:46  
8    that might be harmful, et cetera.                           10:45:50  
9           Q.    Okay.  So the steps for determining -- sorry.   10:45:52  
10            The steps once monitoring natural attenuation is   10:45:58  
11    selected may include some type of risk evaluation?       10:46:02  
12           A.    Yes.   10:46:06  
13           Q.    Some form of site characterization?           10:46:07  
14           A.    Yes.  Yes.                                       10:46:09  
15           Q.    Maybe predictive modeling?                   10:46:10  
16           A.    Yes, all of that, yes.                       10:46:12  
17           Q.    Okay.  And then some level of monitoring?   10:46:13  
18           A.    Yes.   10:46:15  
19           Q.    Probably long -- longer term monitoring?     10:46:16  
20           A.    Yes, it would.                                   10:46:18  
21           Q.    So why -- why is monitoring so important for a   10:46:20  
22    natural recovery remedy?                                   10:46:23  
23           A.    I think monitoring is important to document that   10:46:27  
24    the natural recovery is -- is occurring.  And also to     10:46:31  
25    ensure that it's resulting in a -- kind of a permanent     10:46:39

1 protection of the -- the beneficial uses. 10:46:46

2 And again, physical disturbances to a site, the 10:46:56

3 contaminants reemerging from burrowing organisms that 10:47:01

4 might bring it to the surface and make it bioavailable 10:47:06

5 again. All of that is a consideration. 10:47:09

6 Q. So all that's why it's a no cost -- not a no 10:47:12

7 cost or no action remedy. 10:47:15

8 A. Exactly. 10:47:17

9 Q. It does involve cost? 10:47:18

10 A. Yes. 10:47:20

11 Q. It does involve actions? 10:47:20

12 A. Yes. 10:47:22

13 Q. Understood. 10:47:23

14 If we look at DTR page 30-3. 10:47:23

15 A. Yes. 10:47:29

16 Q. There's a sentence that says, "Active efforts 10:47:32

17 are underway to control sources" in the middle paragraph. 10:47:34

18 Do you see that? 10:47:37

19 A. Okay. We're on the middle -- 30-3. 10:47:40

20 Q. Yes, paragraph beginning "based on." 10:47:43

21 A. Active effort, yes. 10:47:45

22 Q. What are those efforts to control sources? 10:47:50

23 A. Let's see. This would be sources of discharges 10:47:59

24 to the area, control of point source discharges, the 10:48:18

25 establishment of TMDLs for Chollas Creek. 10:48:26

1 Q. Do you think that those source control measures 10:48:35  
2 will be effective? 10:48:39  
3 MR. CARRIGAN: Vague. 10:48:40  
4 MS. REYNA: Asked and answered. 10:48:45  
5 THE WITNESS: Yes, I do. 10:48:49  
6 BY MR. RICHARDSON: 10:48:51  
7 Q. Are you aware of any sources influencing the 10:48:51  
8 sediment at the site for which active efforts are not 10:48:54  
9 underway? 10:49:00  
10 A. The -- no. I am -- I am not aware. 10:49:08  
11 Q. Further down that paragraph, it states that, 10:49:19  
12 "Complete control of site sources has not yet been fully 10:49:20  
13 demonstrated to a level that would assure adequate rates 10:49:26  
14 of recovery." 10:49:29  
15 Do you know what site sources that statement is 10:49:31  
16 referring to? 10:49:33  
17 A. I -- I believe it's referring to discharges in 10:49:39  
18 the vicinity of the shipyard, the influence of 10:49:45  
19 Chollas Creek on shipyard contaminant levels, discharges 10:49:51  
20 from MS4 storm drains. 10:50:03  
21 Q. Okay. Are you aware of any other sources that 10:50:05  
22 have not been controlled in which you believe would 10:50:08  
23 interfere with the implementation of natural recovery? 10:50:10  
24 A. Not specifically. I'm -- I'm aware of sources 10:50:24  
25 where work is underway on those. 10:50:27

1 Q. Okay. 10:50:33  
2 Reading the last sentence of this paragraph, is 10:50:35  
3 it true that the Cleanup Team rejected proposing 10:50:38  
4 implementation of monitored natural recovery solely on 10:50:41  
5 the basis that complete source control had not been 10:50:44  
6 demonstrated? 10:50:48  
7 A. No. I -- no, no. That was not the -- the only 10:50:49  
8 consideration. 10:50:57  
9 Q. And what were the other considerations? 10:51:01  
10 A. The levels, the types of contaminants in the 10:51:05  
11 sediment, the risks to human health and aquatic dependent 10:51:09  
12 wildlife that the -- were the results of the risk 10:51:22  
13 analysis, the results of the sediment quality triad 10:51:30  
14 analysis and -- that indicated some sites might -- some 10:51:34  
15 sampling areas might -- were like -- indicated adverse 10:51:41  
16 effects to marine organisms were likely. Those kinds of 10:51:51  
17 considerations. And yeah. 10:51:55  
18 Q. So if I understand correctly, the Cleanup Team 10:52:00  
19 did not believe that natural attenuation would result in 10:52:02  
20 correcting the problems that you just noted? 10:52:08  
21 A. Yes, yes. We did not think that would be a 10:52:12  
22 permanent fix to -- as a strategy to address the whole 10:52:15  
23 site. At the same time, we were open in our thinking 10:52:21  
24 that the remedies to address the site might be a mixture 10:52:28  
25 of remedies, where some portion of the site might be 10:52:35

1 dealt with through a natural attenuation type action, but 10:52:38  
2 that that might not be appropriate for the whole site. 10:52:47  
3 Q. Who on the Cleanup Team concluded that natural 10:52:52  
4 attenuation should not be used as a remedy for the site? 10:52:56  
5 A. I don't know that it was a specific person 10:53:00  
6 rather than a -- kind of a consensus decision, yeah. 10:53:03  
7 Q. But you as the person that oversaw the 10:53:14  
8 development of this chapter ultimately had the authority 10:53:16  
9 to make that decision? 10:53:18  
10 A. Yes, yes. Well, again, I -- in the period of 10:53:20  
11 time this was put together, I was answerable to -- well, 10:53:26  
12 part of the time, anyway, answerable to the assistant 10:53:35  
13 executive officer. And then for a period of time, that 10:53:42  
14 position was vacant. And then now I'm answerable to 10:53:45  
15 Mr. Gibson, yeah. 10:53:52  
16 Q. Are there any other reasons that we have not 10:53:57  
17 discussed that monitored natural attenuation was not 10:53:59  
18 selected? 10:54:03  
19 MR. CARRIGAN: Overbroad. 10:54:03  
20 THE WITNESS: I mean, there could be some 10:54:11  
21 reasons that are kind of a subset of the statements that 10:54:14  
22 I've made. For instance, PCBs are an element of concern 10:54:18  
23 where there's a lot of documentation that PCBs can 10:54:25  
24 biomagnify through the food chain and present a risk to 10:54:31  
25 human health. And that's a side -- side -- or a -- you 10:54:35

1 know, a subset of the results of the health risk 10:54:41  
2 calculations, yeah. 10:54:45

3 Q. Okay. So that would fit within the Cleanup 10:54:46  
4 Team's belief that natural attenuation would not result 10:54:49  
5 in protecting those beneficial uses? 10:54:52

6 A. Right, yes. 10:54:56

7 Q. And source control, as discussed here on 10:54:57  
8 page 30-3, is -- is -- 10:55:00

9 A. Could I -- one other thought on what we were 10:55:03  
10 just discussing is the fact that this -- that this site 10:55:07  
11 is at an active shipyard site where vessels and -- 10:55:10  
12 passing over the area that could lead to disturbances of 10:55:17  
13 the sediments. Maybe there would be maintenance dredging 10:55:21  
14 activities conducted for various reasons. And so this -- 10:55:24  
15 this is not a quiescent, quiet area of the bay. So 10:55:31  
16 disturbances are one factor, and physical disturbances 10:55:40  
17 are one factor in determining whether monitored natural 10:55:44  
18 recovery is an appropriate remedy. 10:55:48

19 Q. Thank you for that. That's helpful. And we'll 10:55:55  
20 come back to that. 10:55:56

21 A. Okay. 10:55:58

22 Q. On page 30-3, there's a discussion of source 10:55:59  
23 control as one of the reasons why monitored natural 10:56:01  
24 attenuation was not selected; correct? 10:56:04

25 A. On page? 10:56:06

1 Q. 30-3. We just reviewed that section. 10:56:07  
2 A. Yes. 10:56:10  
3 Q. But isn't the issue of on-site or off-site 10:56:11  
4 source control issues relevant to any remedy that's 10:56:19  
5 selected at the site? 10:56:23  
6 A. Yes -- yes, it is, due to potential for 10:56:24  
7 recontamination, yes. 10:56:26  
8 Q. So you wouldn't begin dredging an area prior to 10:56:29  
9 source control if there's a risk that area could be 10:56:32  
10 recontaminated; right? 10:56:36  
11 MR. CARRIGAN: Incomplete hypothetical. 10:56:38  
12 THE WITNESS: Well, from -- from a very broad 10:56:39  
13 viewpoint, remedial -- source control before remediation 10:56:41  
14 is a -- kind of a -- is the ideal condition to obtain 10:56:50  
15 to -- to avoid the need to go back and re-cleanup a site 10:56:56  
16 after it's already been cleaned up. But there's 10:57:03  
17 different gradations as to when source control conditions 10:57:06  
18 are at a level where it's appropriate to proceed with 10:57:11  
19 cleanup. 10:57:15  
20 BY MR. RICHARDSON: 10:57:17  
21 Q. Can you point me to any federal, state, or local 10:57:19  
22 guidance document or policy that would recommend active 10:57:25  
23 remediation of a site before source control? 10:57:27  
24 A. I think the documents I've read on that were EPA 10:57:32  
25 publications. And they -- they talked -- these documents 10:57:38

1 discussed it in -- in very broad terms. They didn't get 10:57:43  
2 into subtle discussions about situations where source 10:57:53  
3 control was less than 100 percent obtained. Source 10:58:00  
4 control -- I mean, there's different scenarios. Source 10:58:07  
5 control efforts can be underway and coordinated with a 10:58:10  
6 decision to remediate and -- and have that -- and have 10:58:14  
7 that -- the result from that be that the site was not 10:58:19  
8 recontaminated. So yeah. 10:58:23

9 Q. An inability to control the off-site sources, 10:58:32  
10 though, shouldn't be a reason to favor one remedy over 10:58:36  
11 another, should it? 10:58:39

12 MR. CARRIGAN: Vague. Incomplete hypothetical. 10:58:41

13 THE WITNESS: The -- oh. The inability to 10:58:43  
14 control off-site sources. In one -- in one way of 10:58:45  
15 thinking, it would be the same consideration. Are these 10:58:55  
16 off-site sources, whatever remedy is selected, going to 10:59:01  
17 re-deposit contaminants at a site where they accumulate 10:59:04  
18 to levels that would present the need for another 10:59:09  
19 remedial action. So from that perspective, the analysis 10:59:12  
20 would be -- would be the same. 10:59:19

21 I don't know if you would view -- I guess one 10:59:26  
22 could view the possibility of disturbances at a site as 10:59:30  
23 being a -- kind of an off-site type factor that would 10:59:35  
24 say, you know, that would factor into a monitored natural 10:59:43  
25 recovery in a way that -- and it might not be as relevant 10:59:46



1 for another remedial method. 10:59:55

2 BY MR. RICHARDSON: 10:59:59

3 Q. Okay. I'm just -- I don't quite understand 11:00:00

4 that. So -- 11:00:02

5 A. Yeah. 11:00:04

6 Q. If we have off-site sources that are continuing 11:00:04

7 to contaminate a site, it will continue to contaminate 11:00:06

8 the site whether we do natural recovery, dredging, 11:00:09

9 capping, or any other remedy; right? 11:00:12

10 A. Right. That's correct. Yeah. 11:00:14

11 Q. I'm having trouble understanding how that could 11:00:15

12 influence a decision on which remedy to select. 11:00:18

13 A. Oh, you're having trouble where there are 11:00:22

14 off-site sources? 11:00:25

15 Q. Why that would favor any type of dredging. For 11:00:32

16 example -- I'll give you an example. If you dredge the 11:00:34

17 site and there's recontamination, then you may simply 11:00:36

18 have to dredge it again. 11:00:40

19 A. Yes. 11:00:41

20 Q. So that would be an ineffective remedy and you'd 11:00:41

21 have remedy failure. 11:00:45

22 A. Yeah. 11:00:46

23 Q. So if you choose capping, as is the case with 11:00:47

24 Convair Lagoon, where sources weren't controlled and 11:00:50

25 there's additional pollution on top of the cap, there's 11:00:53

1 further remediation necessary. 11:00:56

2 A. Yes. 11:00:58

3 Q. In monitored natural attenuation those 11:00:59

4 pollutants would continue to add to the area that we're 11:00:59

5 trying to naturally attenuate; correct? 11:01:02

6 A. Yes. 11:01:05

7 Q. So to me that, factor doesn't support any of the 11:01:05

8 remedies that could be implemented at a site; correct? 11:01:07

9 MR. CARRIGAN: Vague. 11:01:11

10 THE WITNESS: Other than, say, for example, from 11:01:14

11 just a contaminant level viewpoint, where you dredge and 11:01:19

12 remove contaminants from a site and then that mass of 11:01:25

13 contaminants is out of the system, recontamination might 11:01:30

14 occur at -- at a -- at some rate, where -- but the marine 11:01:39

15 environment might be less stressed in that scenario 11:01:48

16 because a certain mass of pollutants was removed. 11:01:54

17 And yes, source contaminants are still coming 11:01:58

18 into the site, but there's a lower -- they're 11:02:01

19 accumulating at lower levels, if you're kind of following 11:02:05

20 what I'm trying to describe. 11:02:09

21 Q. I think so. 11:02:11

22 A. Okay. 11:02:12

23 Q. So if there's natural attenuation occurring at a 11:02:13

24 rate that has the capacity to assimilate the additional 11:02:15

25 pollution that comes on site, then it would not disfavor 11:02:19

1 natural attenuation; correct? 11:02:23

2 A. Yes, that's -- yes. 11:02:25

3 Q. Okay. DTR page 30-3 again, in that same 11:02:28

4 paragraph at the -- near the end states that, "Natural 11:02:34

5 recovery processes are active at the site, but the 11:02:37

6 natural recovery may not be fully effective in all areas 11:02:41

7 of the Shipyard Sediment Site." 11:02:44

8 A. Yeah. 11:02:46

9 Q. Do you see that? 11:02:46

10 A. Let's see. Hang on. 11:02:47

11 Q. It's in the same paragraph we've been 11:02:51

12 discussing. 11:02:53

13 A. Okay. Yeah. There, I guess that's referring to 11:02:53

14 site characteristics. There could be parts of the site 11:03:05

15 that are in quiet areas of the site, not as subject to 11:03:08

16 physical disturbances, and other areas where there's a 11:03:14

17 lot of physical disturbance. 11:03:18

18 Q. Okay. So natural recovery would be more likely 11:03:23

19 to occur in areas where there's less of the physical 11:03:26

20 disturbances? 11:03:28

21 A. Right. 11:03:29

22 Q. I'll hand you a courtesy copy of the portion of 11:03:36

23 the Tentative Cleanup & Abatement Order. 11:03:39

24 A. Okay. 11:03:44

25 Q. We're looking at Attachment 2 to the order. 11:03:44

1 A. Okay. 11:03:46

2 Q. The polygons targeted for remediation. 11:03:48

3 A. Yes. 11:03:51

4 Q. The statement that -- in the DTR that some areas 11:03:53  
 5 of the site may not have -- strike that. 11:03:58

6 The natural recovery may not be occurring in 11:04:07  
 7 certain areas of the site. 11:04:10

8 A. Yeah. 11:04:12

9 Q. Could you mark on the diagram where you believe 11:04:16  
 10 natural recovery is not occurring? 11:04:19

11 A. I don't know that I could. I could -- I would 11:04:22  
 12 be -- I could point to areas where there's a potential 11:04:31  
 13 for it to not be occurring. The area over in 11:04:33  
 14 Chollas Creek where, I think, there's testing of vessel 11:04:41  
 15 engines in that area -- 11:04:51

16 Q. If I can pause, Mr. Barker, are there any areas 11:04:54  
 17 where you know natural attenuation is not occurring? 11:04:58

18 A. No, no. I don't think we've -- we've not 11:05:01  
 19 studied it in that level of detail. So no. 11:05:05

20 Q. Very fair. So if I could ask you, then, the 11:05:08  
 21 areas that you believe may not be having natural 11:05:11  
 22 attenuation occur. 11:05:14

23 A. Okay. 11:05:16

24 Q. Could you mark -- as you describe them, could 11:05:16  
 25 you mark them on the diagram so I can follow along with 11:05:19

1 you? 11:05:21

2 A. Okay. I would -- I would want to include any 11:05:22

3 area where there is ship traffic moving in and out of -- 11:05:30

4 of dry dock facilities or that type of vessel traffic. 11:05:34

5 Q. Okay. So to your understanding, can you circle 11:05:45

6 on there where that type of activity would be occurring? 11:05:48

7 A. I -- I assume over in NA09, NA15, NA17, and 11:05:52

8 possibly over in NA06. 11:06:05

9 MR. CARRIGAN: Counsel, is your question limited 11:06:09

10 to the NASSCO portion of the site? 11:06:10

11 MR. RICHARDSON: Just the NASSCO portion of the 11:06:12

12 site, correct. 11:06:14

13 BY MR. RICHARDSON: 11:06:15

14 Q. If you could, we're going to come back to this. 11:06:15

15 So if you mind just circling those areas where you 11:06:16

16 think -- 11:06:20

17 A. Okay. 11:06:20

18 Q. -- there could be no natural attenuation 11:06:21

19 occurring? 11:06:24

20 A. Okay. And then -- 11:06:24

21 Q. Can I give you a pen? Is that a pencil or a 11:06:26

22 pen? 11:06:27

23 A. It's a pen. 11:06:28

24 Q. It's a pen. Okay. Nice pen. 11:06:29

25 A. And then over in the NA20, NA22 area. 11:06:35

1 Q. Okay. Will you circle that also? 11:06:44  
2 A. Yeah. 11:06:47  
3 Q. And what's the basis for your belief that those 11:06:47  
4 areas would not have natural attenuation occurring? 11:06:49  
5 A. Over on the Chollas Creek side. It's just 11:06:52  
6 from -- I've -- just general knowledge that NASSCO's 11:06:56  
7 indicated there's testing activities that disturb the 11:07:05  
8 sediment. And I think on one of the triad samples, there 11:07:08  
9 was some measurement to impact the benthic communities, 11:07:13  
10 but the -- there was -- there was a correlation of that 11:07:19  
11 with the physical disturbance in the area, yeah. 11:07:22  
12 Q. Okay. So there are physical disturbances in the 11:07:25  
13 area of NA20 and NA22, in your opinion, from shipyard 11:07:28  
14 activities? 11:07:33  
15 A. Yes. 11:07:33  
16 Q. And would there also be physical disturbances 11:07:35  
17 associated with turbulent flow from Chollas Creek? 11:07:37  
18 A. Yes. Another potential disturbance area might 11:07:44  
19 be NA19, just from ship movements going into the graving 11:07:55  
20 dock there. I'm not knowledgeable on all the pathways 11:08:02  
21 that NASSCO used to move vessels around its yard. But 11:08:10  
22 any area where sediment is stirred up from -- from ship 11:08:14  
23 movements would not be an optimal area for natural 11:08:19  
24 recovery. 11:08:22  
25 Q. That's helpful. Thank you. 11:08:24

1           The DTR states that monitored natural           11:08:27  
2   attenuation may not be fully effective in certain           11:08:29  
3   parts --           11:08:32  
4           A.    Yeah.           11:08:33  
5           Q.    -- of the site.  So the Cleanup Team is not           11:08:33  
6   discounting the possibility that natural attenuation           11:08:36  
7   alone could be an effective remedy at the site; correct?   11:08:39  
8           MR. CARRIGAN:  Document speaks for itself.           11:08:44  
9           THE WITNESS:  I think the Cleanup Team's taken           11:08:49  
10   the position that we don't think the NASSCO portion of           11:08:51  
11   the site that natural recovery alone is an appropriate           11:08:56  
12   remedial action for that site.           11:09:00  
13   BY MR. RICHARDSON:           11:09:03  
14           Q.    But the Cleanup Team doesn't know if it's           11:09:05  
15   actually occurring.  They're just erring on the side of           11:09:08  
16   conservatism; correct?           11:09:10  
17           A.    There's been information submitted from -- in           11:09:13  
18   the exponent report -- report that talks about sediment           11:09:17  
19   deposition processes covering the contaminants up and           11:09:23  
20   gradually over time reducing their bioavailability           11:09:28  
21   through that process.  But other than that, as I said, no           11:09:35  
22   detailed studies beyond that.           11:09:40  
23           Q.    And that's discussed in part on page 20-3 at the           11:09:43  
24   start of that paragraph; correct?  Where it talks about           11:09:47  
25   one- to two-centimeter per year of surface sediment           11:09:50

1 layer. 11:09:54

2 MR. CARRIGAN: 30-3? 11:09:55

3 MR. RICHARDSON: I'm sorry. 30-3, yes. 11:09:59

4 THE WITNESS: Yes, that's correct. 11:10:00

5 BY MR. RICHARDSON: 11:10:01

6 Q. So that sentence reads, "Sedimentation rates in 11:10:05

7 the range of one to two centimeters per year suggests 11:10:08

8 that the surface sediment layer will be actively improved 11:10:11

9 by natural deposition." 11:10:15

10 A. Yes. 11:10:16

11 Q. And you agree with that conclusion? 11:10:17

12 A. Yes. 11:10:22

13 Q. Doesn't that indicate that following source 11:10:23

14 control, any existing contamination would eventually be 11:10:26

15 buried by natural processes? 11:10:34

16 MR. CARRIGAN: Vague. 11:10:36

17 THE WITNESS: I don't know that all 11:10:42

18 contamination would be covered by natural processes. 11:10:43

19 There's been a pathway suggested in the exponent report 11:10:48

20 where that process could -- could be taking -- taking 11:10:51

21 place. But the kind of detailed study to document that 11:11:01

22 that should be the remedial solution for the problem, 11:11:06

23 that information has not been studied in detail. The -- 11:11:14

24 it was the Cleanup Team's opinion that, based on the 11:11:19

25 available information in our consideration of the ship 11:11:23



1 movement traffic in an active shipyard scenario, that 11:11:29  
2 natural recovery by itself was not an appropriate remedy. 11:11:36  
3 Q. Okay. So the concern is that the movement of 11:11:42  
4 ships throughout the shipyard may stir up sediment and -- 11:11:45  
5 and risk the ongoing natural degradation? 11:11:48  
6 A. Yes. And the -- I guess the period of time the 11:11:52  
7 natural recovery would take to remedy adverse effects 11:11:55  
8 would be -- was a consideration. The possibility of 11:12:03  
9 burrowing marine organisms bringing contaminants to the 11:12:09  
10 surface would -- would also be a consideration. The 11:12:14  
11 persistence of the -- some of the contaminants, 11:12:22  
12 particularly PCBs, was consistent -- was a consideration. 11:12:28  
13 Q. And we'll come back to those here in a moment. 11:12:35  
14 A. Okay. 11:12:37  
15 Q. Two sentences later after the sentence I just 11:12:38  
16 described to you, it says, "Elevated chemical 11:12:40  
17 concentrations are generally restricted to a limited 11:12:42  
18 spatial area within the pier areas." 11:12:44  
19 Do you see that statement? 11:12:47  
20 A. Okay. Excuse me. We are in the same paragraph? 11:12:48  
21 Q. In the same paragraph, two sentences after the 11:12:51  
22 previous one we discussed. 11:12:53  
23 A. Okay. Okay. "Elevated chemical concentrations 11:12:55  
24 are generally restricted to a limited spatial area." 11:13:00  
25 Okay. 11:13:05

1 Q. Within the piers; correct? 11:13:05  
2 A. Right. 11:13:07  
3 Q. And do you agree with that statement? 11:13:07  
4 A. Yes. I believe the contamination is -- is 11:13:09  
5 mostly near-shore contamination. 11:13:15  
6 Q. Okay. I want to -- I'm sorry. Do you have 11:13:18  
7 more? 11:13:20  
8 A. No. 11:13:20  
9 Q. I want to look at the next sentence, as well. 11:13:22  
10 "Bioavailability of site chemicals to benthic organisms 11:13:24  
11 appears to be limited based on lack of observed toxicity 11:13:30  
12 or benthic community degradation relative to reference 11:13:33  
13 conditions in most areas." 11:13:36  
14 Do you see that? 11:13:39  
15 A. Yes. 11:13:40  
16 Q. Do you agree with that statement? 11:13:42  
17 A. Yes. I think on the -- I don't recall the 11:13:43  
18 number of stations where likely -- where triad 11:13:47  
19 measurements were taken that yielded where the analysis 11:13:54  
20 indicated likely adverse effects on benthic organisms. 11:14:02  
21 But it was not -- it was a few of the sites, not -- the 11:14:08  
22 vast majority did not have that result. 11:14:14  
23 Q. And do you recall, were there any benthic 11:14:16  
24 effects different than reference at the entire NASSCO 11:14:18  
25 site? 11:14:21

1 MR. CARRIGAN: Vague. Overbroad. 11:14:24

2 BY MR. RICHARDSON: 11:14:25

3 Q. For any of the four benthic community analyses 11:14:25

4 performed at the NASSCO site for all the stations at the 11:14:30

5 NASSCO site. 11:14:33

6 A. Relative to reference. 11:14:34

7 Q. Was there a single one different relative to 11:14:35

8 reference? 11:14:38

9 A. I -- I don't recall that. 11:14:38

10 Q. Can you find it in the DTR for me? 11:14:39

11 A. I guess this would -- this would be back -- I 11:14:45

12 think the results of those calculations are back in the 11:14:50

13 sediment triad results chapter. 11:14:56

14 Q. Correct. 11:15:00

15 A. Yeah. I don't recall where the table was or 11:15:01

16 that type of thing. 11:15:04

17 Q. Okay. I'll refer you to Table 18-12. 11:15:08

18 A. Okay. 11:15:11

19 Q. On page 18-23. 11:15:12

20 A. Okay. 11:15:21

21 Q. Do you see the table? 11:15:22

22 A. Yes. 11:15:23

23 Q. And then the Table 18-13, there's the benthic 11:15:24

24 community line of evidence results. Do you see that? 11:15:28

25 A. Table 18-13, yes. 11:15:30

1 Q. So for all of the stations at NASSCO other than 11:15:37  
2 Stations NA20 and 22, there was no difference than 11:15:42  
3 reference for all benthic community measures; correct? 11:15:46  
4 A. Oh, to the reference. And your -- your 11:15:58  
5 statement was again that the -- with regard to 18-13? 11:16:12  
6 Q. All stations at NASSCO but two showed absolutely 11:16:19  
7 no difference than reference in all benthic community 11:16:23  
8 tests; correct? 11:16:27  
9 MR. CARRIGAN: Document speaks for itself. 11:16:29  
10 THE WITNESS: Let me just -- I'm just trying to 11:16:49  
11 recall my memory on some of this. 11:16:51  
12 BY MR. RICHARDSON: 11:16:54  
13 Q. Maybe if you look at Table 18-12, you can see 11:16:56  
14 the differences from reference are highlighted. 11:16:59  
15 A. Yes, right. 11:17:02  
16 MR. CARRIGAN: Is this preliminary for some 11:17:04  
17 question for Mr. Barker in his capacity -- I mean, we've 11:17:07  
18 covered this ground with the PMK that the Cleanup Team 11:17:09  
19 designated for this topic already. 11:17:12  
20 MR. RICHARDSON: Yes. This is relevant to our 11:17:14  
21 discussion of cleanup methods and natural attenuation. 11:17:15  
22 THE WITNESS: Okay. 11:17:18  
23 BY MR. RICHARDSON: 11:17:19  
24 Q. So do you see on Table 18-12? 11:17:19  
25 A. Yes. Right. 11:17:21

1 Q. Highlighted squares mean that they're different 11:17:22  
2 than reference; correct? 11:17:24  
3 A. Yes. 11:17:25  
4 Q. So all stations, NA1 through NA19 as NASSCO 11:17:25  
5 there was no difference than reference for all benthic 11:17:30  
6 measures? 11:17:34  
7 A. Right. Yes. 11:17:35  
8 Q. And then in Table 20-1. 11:17:35  
9 A. 20-1? 11:17:38  
10 Q. Yeah. 11:17:40  
11 A. Okay. Hang on. Okay. 11:17:40  
12 Q. We looked at this table yesterday, Mr. Barker. 11:17:50  
13 A. Okay. 11:17:53  
14 Q. And we had looked at the benthic 11:17:54  
15 macroinvertebrate total abundance and benthic 11:17:56  
16 macroinvertebrate total richness -- 11:17:59  
17 A. Yes. 11:18:00  
18 Q. -- and all of the toxicity tests. 11:18:00  
19 A. Yes. 11:18:02  
20 Q. And we had concluded yesterday that none of 11:18:03  
21 those CoCs had any statistical relationship to any of 11:18:06  
22 those metrics; correct? 11:18:12  
23 A. Yes. 11:18:14  
24 Q. So my question -- my question to you, 11:18:14  
25 Mr. Barker, is that in light of all these characteristics 11:18:18

1 that we just discussed, the active deposition of 11:18:21  
2 sediments at the site of one to two centimeters per year, 11:18:25  
3 the limited elevation of concentrations in most of the 11:18:29  
4 shipyard, the limited bioavailability, no impact shown to 11:18:31  
5 correlate to benthic risks at the site, wouldn't all of 11:18:37  
6 those factors support natural recovery? 11:18:40  
7 MR. CARRIGAN: Incomplete hypothetical. 11:18:43  
8 Misstates facts in evidence. 11:18:45  
9 THE WITNESS: I mean, those would all be 11:18:51  
10 considerations in a decision for natural recovery in the 11:18:52  
11 scenario you've described are favorable considerations. 11:18:58  
12 There are other factors dealing with the human health 11:19:04  
13 risk and the conclusions of the risk analysis for effects 11:19:12  
14 to aquatic dependent wildlife that... 11:19:22  
15 BY MR. RICHARDSON: 11:19:28  
16 Q. So this gets back to your concern that monitored 11:19:28  
17 natural attenuation won't result in the protection of the 11:19:31  
18 beneficial uses. 11:19:34  
19 A. Yes. 11:19:35  
20 Q. And then you raised another concern about the 11:19:36  
21 movement of ships at the shipyard and the potential 11:19:37  
22 disturbance of the sediment; correct? 11:19:40  
23 A. Yes. 11:19:42  
24 Q. Were there any -- but beyond those factors, is 11:19:42  
25 there anything else that would affect your conclusion 11:19:45

1 whether to adopt monitored natural attenuation? 11:19:47

2 MR. CARRIGAN: Asked and answered. 11:19:51

3 THE WITNESS: At the -- the stations where there 11:19:57

4 were likely results predicted for impacts to -- for 11:20:00

5 biological effects, part of that decision was on other 11:20:09

6 legs of the triad, other than just whether or not the 11:20:14

7 benthic community was similar to reference. And the 11:20:18

8 Cleanup Team wasn't of the mind that -- that effects to 11:20:32

9 benthic organisms would be fully addressed by natural 11:20:42

10 recovery being the selected method for the whole site. 11:20:46

11 MR. RICHARDSON: Okay. 11:20:50

12 THE WITNESS: I'm not sure if I'm answering your 11:20:53

13 question or not. 11:20:55

14 MR. RICHARDSON: I think, David -- or 11:20:56

15 Mr. Barker, we should come back to that. 11:20:57

16 A. Okay. 11:20:59

17 Q. I -- I understand we're out of tape. So if we 11:20:59

18 could take a short break. 11:21:01

19 A. Okay. 11:21:02

20 Q. Okay. Thank you. 11:21:03

21 A. All right. 11:21:03

22 MR. RICHARDSON: Off the record. 11:21:03

23 THE VIDEOGRAPHER: This ends Videotape No. 1 in 11:21:05

24 the deposition of David Barker. The time off the record 11:21:08

25 is 11:21 a.m. 11:21:10

1 (A recess was taken.) 11:21:20

2 THE VIDEOGRAPHER: This begins Videotape No. 2 11:42:18

3 in the deposition of David Barker. The time on the 11:42:20

4 record is 11:42 a.m. 11:42:23

5 BY MR. RICHARDSON: 11:42:26

6 Q. Mr. Barker, before the break I was asking you 11:42:27

7 about certain characteristics and whether they are 11:42:29

8 favorable to the potential effectiveness of natural 11:42:34

9 recovery. So I want -- I want to review those quickly 11:42:36

10 and make sure that I understand what your testimony is. 11:42:38

11 Those characteristics at the shipyard, one was 11:42:43

12 active deposition of sediments that we discussed, one to 11:42:47

13 two centimeters per year. 11:42:49

14 A. Right. 11:42:52

15 Q. A second one was the limited elevated 11:42:53

16 concentrations of chemicals around certain areas of the 11:42:57

17 shipyard. Third was the limited bioavailability of the 11:43:00

18 chemical to benthic organisms. 11:43:03

19 Do you agree that those characteristics are 11:43:07

20 favorable to the potential effectiveness of natural 11:43:10

21 recovery at the site? 11:43:16

22 A. Yes, I do. 11:43:21

23 Q. You mentioned before the break that you had a 11:43:24

24 couple concerns, though, about natural attenuation. And 11:43:27

25 one was the ship traffic in the shipyard and the 11:43:30



1 potential for disturbances related to that; correct? 11:43:36  
2 A. Yes. 11:43:39  
3 Q. And the concern there is, I guess, if ships move 11:43:39  
4 around, it may stir up the sediment and could cause 11:43:42  
5 further impacts. 11:43:45  
6 A. Right. 11:43:46  
7 Q. Are you aware of any studies that have been 11:43:51  
8 conducted to assess the extent to which physical 11:43:53  
9 disturbances are occurring at the site? 11:43:55  
10 A. No, I am not. 11:43:59  
11 Q. You previously marked on -- and we should label 11:44:03  
12 this as an exhibit. What are we at, 1224? 11:44:10  
13 THE COURT REPORTER: Yes. 11:44:15  
14 MR. RICHARDSON: So could we label this as 1224. 11:44:15  
15 (Exhibit 1224 was marked.) 11:44:15  
16 BY MR. RICHARDSON: 11:44:22  
17 Q. I'm labeling, Mr. Barker, the 11:44:22  
18 tentative cleanup & abatement order diagram that you 11:44:25  
19 marked on previously as Exhibit 1224 to make it easier to 11:44:26  
20 refer to. 11:44:30  
21 A. Okay. 11:44:31  
22 Q. You previously marked on that diagram areas 11:44:32  
23 where you expected there to be physical disturbances; 11:44:34  
24 correct? 11:44:36  
25 A. Yes. Oh, excuse me, there was -- I wanted to 11:44:37

1 mark NA19, as well. 11:44:45

2 Q. Okay. And on there did you also mark NA20 and 11:44:50

3 NA22 by Chollas Creek? 11:44:55

4 A. Yes, yes. Yes, I did. 11:45:02

5 Q. Okay. 11:45:04

6 A. Okay. This is mostly just due to some 11:45:07

7 uncertainty, again, with where the ship traffic actually 11:45:18

8 is. But I see a dotted line extending out to NA28 that 11:45:22

9 might be for some type of dry dock facility there that -- 11:45:32

10 so ships moving in and out of that facility might impact 11:45:40

11 other polygons there that we haven't discussed. 11:45:44

12 Q. Okay. So the floating dry dock goes up and 11:45:50

13 down, which would potentially disturb the sediments in 11:45:53

14 the area? 11:45:56

15 A. Right. And a ship moving in and out of a 11:45:57

16 floating dry dock. Another activity might -- maintenance 11:46:00

17 dredging that might be conducted at various areas of the 11:46:07

18 site. 11:46:10

19 Q. Are you aware of any maintenance dredging that's 11:46:11

20 occurred at NASSCO at all? 11:46:14

21 A. I believe in past years, not frequently, but 11:46:17

22 NASSCO has done maintenance dredging there. 11:46:20

23 Q. Do you recall if that was related to the 11:46:28

24 floating dry dock expansion? 11:46:30

25 A. I -- I don't recall. It may have been. 11:46:32

1 Q. Are you familiar with the term "mature benthic 11:46:43  
2 community"? 11:46:44

3 A. I have heard the term. 11:46:51

4 Q. Okay. Have you heard the term "Stage 3 benthic 11:46:52  
5 community"? 11:46:54

6 A. Yes, in terms of the -- I hope I'm pronouncing 11:46:59  
7 this correctly -- the SPI profile or -- I can't remember 11:47:04  
8 the exact acronym for that. I could look it up. 11:47:13

9 Q. Okay. Would that be the sediment profile 11:47:17  
10 imaging, SPI? 11:47:19

11 A. Yeah, SPI. Yes, exactly. 11:47:21

12 Q. Great. So mature Stage 3 benthic community is 11:47:22  
13 the last successional stage of the development of the 11:47:25  
14 benthic community; correct? 11:47:28

15 A. Right. 11:47:31

16 Q. So generally where you see a mature Stage 3 11:47:32  
17 benthic community, it means there's a healthy benthic 11:47:33  
18 community; correct? 11:47:37

19 A. It could be that, yes. 11:47:39

20 Q. Is there a Stage 4 benthic community? 11:47:40

21 A. I'm not aware of that. I -- I could turn to the 11:47:44  
22 part of the report that discusses that. 11:47:46

23 Q. Okay. Let's -- let's do that. Let's look at 11:47:48  
24 page 32-38 of the DTR. 11:47:52

25 A. Thirty -- oh, it's in the next. 11:48:03

1 Q. It's a diagram of the shipyard site. 11:48:07  
2 A. Okay. 11:48:11  
3 Q. Do you see that? 11:48:13  
4 A. Yes, uh-huh. 11:48:14  
5 Q. It may be helpful to put the Exhibit 1224 next 11:48:15  
6 to it so you can compare the two. 11:48:18  
7 A. Okay. 11:48:22  
8 Q. Do you see in Figure 32-3 on page 32-38 that a 11:48:23  
9 solid triangle represents areas where there's a Stage 1 11:48:31  
10 and Stage 3 benthic community? 11:48:35  
11 A. Yes. You're asking me to look at the legend? 11:48:38  
12 Q. Yes. 11:48:45  
13 A. Yes, right. 11:48:46  
14 Q. I'm asking you to familiarize yourself with the 11:48:46  
15 section of the DTR, including this figure. 11:48:49  
16 A. Okay. All right. 11:48:50  
17 Q. Am I correct in that you supervised the drafting 11:48:53  
18 of this section of the DTR? 11:48:56  
19 A. Yes. 11:48:59  
20 Q. Do you see that throughout most of the NASSCO 11:49:05  
21 shipyard there are Stage 3 mature benthic communities? 11:49:07  
22 A. Yes. 11:49:14  
23 MR. CARRIGAN: Document speaks for itself. 11:49:14  
24 BY MR. RICHARDSON: 11:49:16  
25 Q. That was yes? 11:49:16

1 A. Yes. I do. 11:49:20

2 Q. There are some areas, though, where there are 11:49:22  
3 only Stage 1 benthic communities, particularly along 11:49:24  
4 Chollas Creek and along certain portions of the shipyard. 11:49:31  
5 Do you see those locations? 11:49:37

6 A. Where there are only Stage 1, yes. Uh-huh. 11:49:39

7 Q. Okay. And you previously testified, correct, 11:49:42  
8 that you -- that you would anticipate there would be 11:49:46  
9 physical disturbances along NA20 and NA22; correct? 11:49:50

10 A. NA-- yes, that's correct. 11:49:54

11 Q. Based on this information concerning the 11:50:05  
12 successional stages of the benthic communities, wouldn't 11:50:07  
13 you agree that ship disturbances result in localized 11:50:13  
14 issues in portions of the site, but there is no evidence 11:50:17  
15 of significant physical disturbances throughout the site? 11:50:20

16 MR. CARRIGAN: Incomplete hypothetical. 11:50:23  
17 Document speaks for itself. 11:50:24

18 THE WITNESS: If I may, I'd like to read -- 11:50:35  
19 re-read the text in the DTR that summarized 11:50:37  
20 interpretation of this table. 11:50:43

21 Q. Okay. 11:50:44

22 A. Just -- I think it's just half a paragraph or 11:50:45  
23 so. 11:50:47

24 Q. Absolutely. Take your time. 11:50:47

25 A. Okay. And the -- the question was? 11:51:56

1 MR. RICHARDSON: Can you read that back? 11:52:23  
2 (The record was read.) 11:52:25  
3 MR. CARRIGAN: Renew objections. 11:52:25  
4 THE WITNESS: I believe the analysis there 11:52:36  
5 indicated in areas, yeah, where there was known physical 11:52:38  
6 disturbance only Stage 1 communities were observed such 11:52:42  
7 as the engine test area we -- we discussed earlier over 11:52:46  
8 on the Chollas Creek side at Piers 4 and 5. 11:52:51  
9 BY MR. RICHARDSON: 11:52:57  
10 Q. And those are described as limited areas; 11:52:57  
11 correct? 11:53:00  
12 A. Yes. 11:53:00  
13 Q. And that the SPI analysis showed that there were 11:53:00  
14 healthy mature Stage 3 communities present throughout 11:53:03  
15 both shipyards; correct? 11:53:06  
16 A. That's correct, yes. 11:53:08  
17 Q. I have a courtesy copy for you of an excerpt 11:53:21  
18 from the Exponent report 2003. 11:53:25  
19 A. Exponent report for 2003. Okay. 11:53:29  
20 Q. Yeah. And that is Master Exhibit 4. I'm having 11:53:31  
21 you look at page 15-3. 11:53:47  
22 A. Okay. 11:53:51  
23 Q. The first full paragraph on that page says, "If 11:53:55  
24 off-site sources were to be controlled, natural recovery 11:53:58  
25 of benthic macroinvertebrate communities would be 11:54:01

1 expected to occur within a three to five-year period." 11:54:05  
2 Do you see that? 11:54:07  
3 A. Uh-huh. 11:54:09  
4 Q. Do you have any reason to disagree with that 11:54:11  
5 finding? 11:54:13  
6 A. The -- I would say that finding needs more 11:54:22  
7 study. I would not agree or disagree with it. 11:54:26  
8 Q. Okay. So we'd need further analysis to 11:54:36  
9 determine whether Exponent was correct in their 11:54:38  
10 assessment? 11:54:40  
11 A. Yes, that's right. 11:54:41  
12 Q. And some of that assessment would involve the 11:54:46  
13 factors we discussed previously, correct, such as 11:54:48  
14 sedimentation rate and physical disturbances and so on? 11:54:51  
15 A. Yes, exactly. 11:54:55  
16 Q. If we assume that sedimentation rate, as 11:54:56  
17 discussed in the DTR, is roughly two centimeters per 11:54:58  
18 year, if my math is correct, after five years that would 11:55:03  
19 be roughly ten centimeters; correct? 11:55:06  
20 A. Uh-huh. 11:55:09  
21 Q. Almost all marine organisms at the site live 11:55:12  
22 within the upper ten centimeters; correct? 11:55:16  
23 A. The vast majority do. There might be some 11:55:20  
24 burrowing organisms that go deeper than that. 11:55:23  
25 Q. So wouldn't this deposited layer, if there 11:55:30

1 were -- strike that. 11:55:35

2 If there were source control, wouldn't the 11:55:37

3 deposited layer that occurs over five years allow for the 11:55:41

4 development of a healthy benthic community? 11:55:45

5 MR. CARRIGAN: Incomplete hypothetical. Lacks 11:55:48

6 foundation. 11:55:50

7 THE WITNESS: Yeah. Let me -- let me think on 11:55:59

8 that a second, if you would. Yeah, it -- yeah, it could. 11:56:01

9 The -- I don't know that ten centimeters is a -- an 11:56:34

10 assured protective barrier to the beneficial uses of the 11:56:51

11 bay. 11:56:57

12 For example, in Convair Lagoon, the cap is -- 11:56:59

13 the aqueous cap is 3 feet thick, which is more than ten 11:57:03

14 centimeters. So it's a -- it's a contained, engineered 11:57:08

15 structure to assure, you know, maintenance of a certain 11:57:11

16 thickness cover and -- and permanent segregation of the 11:57:17

17 waste from the beneficial uses of the bay. 11:57:22

18 That same assurance from -- in natural recovery 11:57:24

19 situations doesn't -- doesn't exist because it's -- it's 11:57:28

20 not within an engineered containment structure. You're 11:57:37

21 relying on natural processes and the environment. And it 11:57:41

22 gets down to the -- I think the assurance of the decision 11:57:49

23 makers as to what degree of risk are the -- is acceptable 11:57:53

24 for possible future effects from the contaminants that 11:58:00

25 are left in place there. 11:58:04



1 BY MR. RICHARDSON: 11:58:08

2 Q. Okay. Thank you. That's helpful. 11:58:08

3 The DTR indicates that there are mature benthic 11:58:12

4 communities throughout the shipyard. 11:58:15

5 A. Yeah. 11:58:17

6 Q. Assuming source control is achieved, with the 11:58:18

7 addition of sedimentation for five years, would you 11:58:21

8 expect there to be continued mature benthic communities? 11:58:26

9 MR. CARRIGAN: Incomplete hypothetical. 11:58:31

10 THE WITNESS: Yeah, there -- there could be 11:58:37

11 continued healthy communities there, depending on, you 11:58:38

12 know, under your scenario there's source control. And I 11:58:42

13 guess I'm considering there's not harmful levels of 11:58:47

14 contaminants deposited at the site, et cetera. 11:58:50

15 BY MR. RICHARDSON: 11:58:54

16 Q. How long is the implementation of the proposed 11:58:57

17 remedy under the cleanup and abatement order expected to 11:59:01

18 take? 11:59:05

19 A. I think it was -- I'd have to refer to the -- 11:59:06

20 there is a schedule in the order. 11:59:09

21 Q. Okay. I'll give you a courtesy copy of that 11:59:12

22 schedule. It's Section 35. 11:59:14

23 A. Okay. Okay. It's -- right now it's scheduled 11:59:16

24 to take five years to complete it. 11:59:29

25 Q. And did you oversee the development of 11:59:34

1 Section 35 of the DTR? 11:59:37

2 A. Yes. 11:59:39

3 Q. So if we assume source control and we assume 11:59:49

4 that there is some sedimentation occurring at the site, 11:59:52

5 there's no reason to expect that a dredging remedy would 11:59:59

6 be implemented more quickly than natural attenuation; 12:00:02

7 right? 12:00:06

8 A. There -- part of the reason for extending the 12:00:24

9 schedule was based on endangerment of the lease turned 12:00:30

10 from the dredging activity. There's a possibility that 12:00:38

11 the resource agencies would just do the site-specific 12:00:43

12 considerations, allow dredging in the window of 12:00:50

13 September 15th through March 31st, so that more 12:00:53

14 dredging could occur where that five-year schedule could 12:00:57

15 be compressed less. So there's -- I just wanted to bring 12:01:04

16 that out. 12:01:09

17 The -- and then the other thing is, it's 12:01:12

18 really -- I don't -- an analysis has not been done to 12:01:20

19 show exactly how long natural recovery would take to 12:01:30

20 attain the same sediment quality conditions that's 12:01:39

21 envisioned under the cleanup abatement order as dredging 12:01:45

22 has been -- as the dredging would obtain. So I don't 12:01:50

23 think I can answer your question precisely as to which 12:01:55

24 would take longer, that type of thing. 12:01:59

25 Q. Okay. But I'm asking with the assumptions that 12:02:02

1 are in the DTR of sedimentation rate, and from the SPI 12:02:04  
2 data that we have that there are already mature benthic 12:02:09  
3 communities throughout the shipyard. 12:02:12  
4 A. Yeah. 12:02:15  
5 Q. I'm asking, is it true that it's possible that 12:02:15  
6 natural attenuation could occur over the course of the 12:02:18  
7 next five years? 12:02:21  
8 MR. CARRIGAN: Incomplete hypothetical. 12:02:23  
9 THE WITNESS: Well, I guess -- well, the line of 12:02:29  
10 risk we're talking about is the line dealing with benthic 12:02:32  
11 organisms. 12:02:37  
12 MR. RICHARDSON: Correct. 12:02:41  
13 THE WITNESS: And there are -- there are other 12:02:41  
14 lines of risk with human health, aquatic dependent 12:02:42  
15 wildlife that to meet all those concerns might take a 12:02:47  
16 longer period of time than five years, but maybe five 12:02:50  
17 years might be a process that could deal with the effects 12:02:54  
18 to benthic organisms. 12:03:01  
19 BY MR. RICHARDSON: 12:03:05  
20 Q. And if there's source control and there's 12:03:05  
21 ongoing sedimentation at rates approximating those in the 12:03:07  
22 DTR, wouldn't it protect the other beneficial uses, as 12:03:13  
23 well? 12:03:17  
24 MR. CARRIGAN: Incomplete hypothetical. Vague. 12:03:18  
25 THE WITNESS: Yeah. Any -- any natural process 12:03:26

1 that is making the -- reducing the exposure of the 12:03:28  
2 contaminants and making them less bioavailable would 12:03:34  
3 improve the protection for all of the beneficial uses 12:03:39  
4 over time. 12:03:43  
5 BY MR. RICHARDSON: 12:03:43  
6 Q. The question is how long of a time it would 12:03:44  
7 take? 12:03:46  
8 A. Yes. And -- and again, the permanence of the 12:03:46  
9 remedy. 12:03:52  
10 Q. Okay. 12:03:53  
11 A. Yeah. 12:03:53  
12 Q. You mentioned the schedule may be compressed. 12:03:53  
13 Have we assessed -- has the Cleanup Team assessed how 12:03:56  
14 much the schedule can be compressed from the five-year 12:03:59  
15 period? 12:04:02  
16 A. I've had some limited discussions with the 12:04:02  
17 Army Corps of Engineers and the U.S. Fish and Wildlife on 12:04:06  
18 whether they would be willing to consider dredging within 12:04:12  
19 the window. And they said that they would. 12:04:15  
20 They had a lot of -- of conditions on that, but 12:04:21  
21 that they recommended when the parties get ready to 12:04:28  
22 actively seek 401 Certification and the dredging 12:04:34  
23 requirements, that early consultation processes be 12:04:38  
24 initiated to get in their early review on that. And it 12:04:43  
25 could lead to permission from those agencies to conduct 12:04:50

1 dredging in those -- for a part or maybe even all of 12:04:55  
2 those seasons. 12:04:59

3 Q. So there are certain seasons where historically 12:05:01  
4 dredging has not occurred -- 12:05:04

5 A. Yes. 12:05:06

6 Q. -- because of protection of the least tern? 12:05:06

7 A. Yes, exactly. 12:05:08

8 Q. And so now for the site, the resource agencies 12:05:09  
9 may conclude that there would not be an impact on the 12:05:12  
10 least tern so that -- 12:05:15

11 A. Yeah. 12:05:16

12 Q. -- so the dredging can occur? 12:05:16

13 A. Yeah. They indicated there was some potential 12:05:17  
14 for that. 12:05:19

15 Q. Is that because least terns aren't found at the 12:05:21  
16 shipyard? 12:05:25

17 MR. CARRIGAN: Calls for speculation. 12:05:26

18 THE WITNESS: I think it's on a seasonal basis 12:05:26  
19 that the they make this decision; that they were careful 12:05:28  
20 to say that this dredging window, September 15th 12:05:35  
21 through March 31st, is not a federal regulation. It's 12:05:40  
22 just a consideration that they have out, and they discuss 12:05:43  
23 some scenarios that would -- where they could loosen 12:05:47  
24 their interpretation of that. 12:05:51  
25 One thing they brought up was that if the 12:05:55

1 dredging activity was located a certain distance away 12:05:58  
2 from known least tern nesting areas would be a 12:06:01  
3 consideration for them. 12:06:06  
4 Q. Are there any known least tern nesting areas at 12:06:09  
5 the shipyard? 12:06:12  
6 A. I -- in my conversation with them, I was kind of 12:06:13  
7 surprised to learn that they -- they were indicating they 12:06:19  
8 didn't think there were. But it was only a very 12:06:21  
9 preliminary discussion. And I don't have any detailed 12:06:25  
10 knowledge on the locations of where they are. 12:06:28  
11 Q. So they did not think there were? 12:06:31  
12 A. Yeah. They were indicating some potential for 12:06:33  
13 possibly allowing dredging within that window, yeah. 12:06:36  
14 Q. You testified earlier that -- that dredging 12:06:45  
15 would destroy the existing benthic community at the site; 12:06:49  
16 correct? 12:06:52  
17 A. Yes. 12:06:52  
18 Q. And after looking at the diagram in Section 32, 12:06:54  
19 30 -- Figure 32-3, there are mature benthic communities 12:07:02  
20 throughout the shipyard; correct? 12:07:07  
21 A. Yes. 12:07:09  
22 Q. And based on the benthic community table 12:07:11  
23 that's -- analysis tables that we looked -- analysis 12:07:14  
24 tables that we looked at previously, there are healthy 12:07:16  
25 benthic communities existing at NASSCO that are 12:07:20

1 indistinguishable from reference; correct? 12:07:24

2 A. Correct, yes. 12:07:26

3 Q. And natural recovery would not involve the 12:07:27

4 destruction of those existing benthic communities; 12:07:32

5 correct? 12:07:34

6 A. To my knowledge, no. 12:07:35

7 Q. Assuming all else equal, isn't that one more 12:07:41

8 factor to support natural recovery over dredging? 12:07:44

9 MR. CARRIGAN: Vague. 12:07:48

10 THE WITNESS: The factor that existing habitats 12:07:52

11 are not disrupted as a result, yes, it is -- it is a 12:07:54

12 factor. I might augment my answer a little bit, is that 12:07:59

13 when benthic habitat is destroyed as a result of 12:08:16

14 dredging, it's not a permanent destruction. Benthic 12:08:19

15 communities re-establish themselves over time. 12:08:23

16 BY MR. RICHARDSON: 12:08:26

17 Q. Got it. And when benthic communities 12:08:27

18 re-establish over time, is there some risk that invasive 12:08:29

19 species will become the dominant species? 12:08:32

20 A. I -- I don't have personal knowledge on that. 12:08:38

21 But it -- I suppose that could happen. 12:08:43

22 Q. Okay. Mr. Barker, we previously entered into an 12:08:59

23 exhibit -- as an exhibit the Bay City Marine cleanup and 12:09:03

24 abatement order. It's exhibit 1214, I believe. 12:09:07

25 A. Okay. 12:09:12

1 Q. I'm happy to give you another courtesy copy if 12:09:19  
2 you'd like. You've got it there. 12:09:22  
3 A. Okay. Got it. 12:09:24  
4 Q. And that's the cleanup and abatement order for 12:09:35  
5 the Bay City Marine site in San Diego Bay; correct? 12:09:37  
6 A. Correct. 12:09:40  
7 Q. And you were involved in the Bay City Marine 12:09:41  
8 site? 12:09:43  
9 A. Yes. 12:09:43  
10 Q. And you're familiar with the details of the 12:09:44  
11 cleanup that occurred there? 12:09:45  
12 A. I'm familiar with the -- up to the point where 12:09:49  
13 the cleanup order was adopted by the board. And then the 12:09:53  
14 oversight of the actual cleanup efforts was shifted to 12:10:00  
15 another unit of the board. And I have less knowledge on 12:10:02  
16 all the activities that took place at that time. 12:10:06  
17 Q. Okay. Well, I'd like to introduce as 12:10:14  
18 Exhibit 1224, Addendum No. 3 to that order. 12:10:17  
19 THE COURT REPORTER: It's 1225. 12:10:34  
20 MR. RICHARDSON: 1225. Thank you. 12:10:37  
21 (Exhibit 1225 was marked.) 12:10:38  
22 BY MR. RICHARDSON: 12:10:47  
23 Q. Are you familiar with this addendum? 12:10:48  
24 A. Let me review it just for a second. 12:10:50  
25 Q. Absolutely. 12:10:52



1 A. Yes, I am familiar with it. 12:11:10  
2 Q. If you could turn to page 5 and you look at 12:11:18  
3 paragraph 17 -- 12:11:21  
4 A. Okay. 12:11:22  
5 Q. -- for me, and I'll have a few questions for you 12:11:22  
6 on that. 12:11:24  
7 A. Page 5, number 17. Okay. 12:11:26  
8 Q. So TBT levels at this site decreased markedly 12:11:45  
9 over some relatively short period of time; correct? 12:11:49  
10 A. That's correct. 12:11:53  
11 Q. And the following page, page 6, paragraph B, the 12:11:54  
12 first sentence indicates that TBT undergoes rapid natural 12:12:00  
13 degradation in the environment. Do you see that? 12:12:05  
14 A. Yes. 12:12:08  
15 Q. So the Bay City Marine site, TBT, tributyltin, 12:12:15  
16 was not treated as a CoC for purposes of the cleanup 12:12:25  
17 order; correct? 12:12:30  
18 A. Yes. 12:12:31  
19 Q. And is that because natural degradation would 12:12:31  
20 occur for TBT? 12:12:34  
21 A. Yes. 12:12:35  
22 MR. CARRIGAN: Document speaks for itself. 12:12:35  
23 THE WITNESS: Yes. At -- at that time, that was 12:12:38  
24 the board's view, yes. 12:12:40  
25

1 BY MR. RICHARDSON: 12:12:42

2 Q. Does the board believe that TBT no longer 12:12:46

3 undergoes natural degradation? 12:12:49

4 MR. CARRIGAN: Calls for speculation. The board 12:12:53

5 that sits -- 12:12:58

6 MR. RICHARDSON: Staff. 12:12:59

7 MR. CARRIGAN: -- and adjudicates? 12:13:00

8 MR. RICHARDSON: Apologies. Yeah. Thank you 12:13:00

9 for clarification. 12:13:00

10 BY MR. RICHARDSON: 12:13:01

11 Q. Does the Cleanup Team believe that TBT undergoes 12:13:01

12 rapid natural degradation? 12:13:05

13 A. I don't believe the DTR discusses that with 12:13:13

14 respect to TBT. I don't -- I don't think that got a lot 12:13:18

15 of discussion in the -- in the process. 12:13:27

16 Q. At the Bay City Marine site, was the site ever 12:13:29

17 remediated for TBT? 12:13:32

18 A. I don't believe so. I believe the -- the focus 12:13:35

19 of the remediation was on the remaining constituents 12:13:37

20 called out by the cleanup order. 12:13:43

21 Q. And the order, to your knowledge, has not been 12:13:45

22 reopened to address TBT concerns at the site? 12:13:47

23 A. No. 12:13:50

24 Q. So this is an example of one of those instances 12:13:55

25 that you discussed previously where the Regional Board 12:13:57

1 concluded that natural attenuation was an appropriate 12:14:02  
2 remedy? 12:14:05  
3 A. Yes, that's correct. For part, not all the 12:14:05  
4 constituents of concern. But for one of the -- I think 12:14:11  
5 there were three constituents. 12:14:14  
6 Q. And monitored natural attenuation or natural 12:14:28  
7 recovery is used throughout the state from time to time 12:14:30  
8 to close contaminated sites; correct? 12:14:33  
9 A. Yes. 12:14:38  
10 Q. I'll introduce this as Exhibit 1226. 12:14:41  
11 (Exhibit 1226 was marked.) 12:14:44  
12 BY MR. RICHARDSON: 12:15:09  
13 Q. Mr. Barker, I'm handing you a case closure 12:15:10  
14 summary from the State Water Resources Control Board for 12:15:13  
15 a site on Bodega Highway. Do you see that? 12:15:18  
16 A. Yes. 12:15:23  
17 Q. Are you familiar with the site? 12:15:25  
18 A. No. 12:15:31  
19 Q. Okay. Would you turn to page 5. 12:15:31  
20 A. Okay. 12:15:37  
21 Q. Turn your attention to the first full paragraph 12:15:42  
22 of the page. After you've had a chance to review that, 12:15:44  
23 I'll have a few questions for you. 12:15:47  
24 A. On page 5; correct? 12:15:49  
25 Q. Yeah, the first full paragraph on page 5. 12:15:50

1 A. Okay. Okay. 12:15:53

2 Q. And then do you see the diagram or chart that's 12:16:19

3 labeled "Groundwater Concentrations in Trench"? 12:16:23

4 A. Yes, I do. 12:16:26

5 Q. What is "biodegradation"? 12:16:37

6 A. I would consider that the -- the -- the uptake 12:16:41

7 of constituents and -- where natural processes degrade 12:16:50

8 the constituents, maybe change the chemical form of the 12:17:05

9 constituents over time. 12:17:10

10 Q. To a less toxic or nontoxic degree? 12:17:14

11 A. Yes. 12:17:17

12 Q. And this -- these two charts show what appear to 12:17:19

13 be pollutant concentration of benzene over time. Would 12:17:22

14 you agree? 12:17:28

15 MR. CARRIGAN: I'd like to record to reflect 12:17:29

16 that this document is a draft report. Go ahead. 12:17:30

17 THE WITNESS: Yeah. This document is indicating 12:17:42

18 that benzene levels in the groundwater are decreasing 12:17:46

19 over time. Yeah. At -- yeah. Based on that one chart 12:17:50

20 there. 12:17:59

21 BY MR. RICHARDSON: 12:17:59

22 Q. Understood. And so where natural attenuation 12:17:59

23 processes are occurring such as biodegradation, you would 12:18:02

24 expect to see a decline in the concentrations over time; 12:18:06

25 correct? 12:18:08

1 MR. CARRIGAN: Incomplete hypothetical. 12:18:09

2 THE WITNESS: Yes, I would. Yeah. 12:18:13

3 BY MR. RICHARDSON: 12:18:15

4 Q. But isn't it also common that there would be 12:18:16

5 some data variability as there is in this chart that 12:18:19

6 shows some concentrations going up and other 12:18:22

7 concentrations going down? 12:18:24

8 MR. CARRIGAN: Incomplete hypothetical. 12:18:25

9 THE WITNESS: Yes. In groundwater quality 12:18:29

10 trends, it's quite common to see fluctuations in data 12:18:30

11 sets over time. But trends can nevertheless emerge from 12:18:34

12 that. 12:18:40

13 BY MR. RICHARDSON: 12:18:40

14 Q. So as an expert in -- in remediation of sites, 12:18:41

15 you would be looking for a similar trend to determine 12:18:43

16 whether natural attenuation were occurring at a site; 12:18:46

17 correct? 12:18:49

18 MR. CARRIGAN: Incomplete hypothetical. 12:18:51

19 THE WITNESS: That certainly would be one level. 12:18:54

20 One consideration is seeing the concentration of the 12:18:58

21 substance decreasing, yes. 12:19:02

22 BY MR. RICHARDSON: 12:19:05

23 Q. Albeit in the presence of some variability? 12:19:06

24 A. Yes. 12:19:08

25 Q. We previously discussed today what a surface 12:19:21

1 area weighted average concentration or SWAC is; correct? 12:19:25

2 A. Yes. 12:19:30

3 Q. And we discussed how SWACs were used in the DTR 12:19:30

4 to determine the appropriate cleanup approach; correct? 12:19:34

5 A. Yes. 12:19:36

6 Q. And my understanding is that the goal is to 12:19:37

7 ensure the organisms that are exposed to areas throughout 12:19:40

8 the site aren't exposed at levels that could create risks 12:19:44

9 to them or to anything else in the food chain. 12:19:48

10 A. Right. 12:19:50

11 Q. How is a SWAC calculated? 12:19:52

12 A. Rather than -- I'd like to turn to the area of 12:19:56

13 the DTR just to freshen my memory on that. But 12:20:00

14 basically, it's a surface weighted average concentration, 12:20:04

15 the general approach was that -- I think there were 12:20:11

16 66 sample sites, something like that, 65, 66. 12:20:15

17 The -- each -- there was a -- a methodology 12:20:23

18 for -- to represent the geospatial picture of that data 12:20:32

19 through a technique called Tyson polygons. And in simple 12:20:48

20 terms, the way the process worked is the polygons were 12:20:59

21 developed, and each sample site was assumed to represent 12:21:07

22 a certain geospatial area within the site. 12:21:14

23 And then a -- based on that, a site-wide 12:21:19

24 concentration was determined, a weighted average 12:21:28

25 concentration, through the whole site. I could probably 12:21:33

1 get more precise with that by referring to the DTR. But 12:21:36  
2 in general terms, that was it. 12:21:40  
3 Q. I think that's very helpful. 12:21:42  
4 A. Okay. 12:21:43  
5 Q. So I'm -- I'm going to try to do this in 12:21:44  
6 layman's terms. 12:21:45  
7 So in layman's terms, you take a concentration 12:21:47  
8 of a station. 12:21:48  
9 A. Yeah. 12:21:49  
10 Q. And you multiply it by the area that that 12:21:49  
11 station represents. 12:21:51  
12 A. Right. 12:21:52  
13 Q. And you sum that up for whatever the study area 12:21:53  
14 includes. 12:21:56  
15 A. Exactly. 12:21:56  
16 Q. And you divide by the total area. 12:21:57  
17 A. Yes. 12:22:00  
18 Q. Okay. So in Master Exhibit 1, the cleanup and 12:22:00  
19 abatement order, could you look at Table 2, the 12:22:07  
20 alternative cleanup levels. 12:22:12  
21 A. Table 2? 12:22:15  
22 Q. Table 2. 12:22:16  
23 A. Of the? 12:22:17  
24 Q. Of the -- on page 15 of Master Exhibit 1. 12:22:17  
25 A. Okay. 12:22:27

1 Q. Do you see that? 12:22:32  
2 A. Yes. 12:22:33  
3 Q. And on that table, do you see that alternative 12:22:33  
4 cleanup levels on a SWAC basis? 12:22:36  
5 A. Table 2, yes, I see -- see that. 12:22:45  
6 Q. The SWAC levels? 12:22:46  
7 A. Yes. 12:22:47  
8 Q. You'll want to keep that in front of you as we 12:22:48  
9 go through the next phase of questions. 12:22:50  
10 A. Okay. 12:22:52  
11 MR. RICHARDSON: In fact, you know what, 12:22:53  
12 actually now is a good breaking point. It's a little bit 12:22:53  
13 earlier than we anticipated. 12:22:55  
14 THE WITNESS: Okay. 12:22:56  
15 MR. RICHARDSON: Would you like to take lunch 12:22:56  
16 now? 12:22:57  
17 THE WITNESS: Sure. 12:22:58  
18 MR. RICHARDSON: If I engage, I think we're 12:22:59  
19 going to be probably be another half hour, 45 minutes at 12:23:00  
20 least. 12:23:04  
21 THE WITNESS: Okay. Yeah, that would be fine 12:23:05  
22 with me. 12:23:06  
23 MR. RICHARDSON: Okay. So why don't we go off 12:23:06  
24 record. 12:23:06  
25 THE VIDEOGRAPHER: Off the record. Time is 12:23:07



1	12:23 p.m.	12:23:08
2	(A recess was taken.)	12:23:21
3	THE VIDEOGRAPHER: Back on the record. Time is	01:31:44
4	1:31 p.m.	01:31:46
5	BY MR. RICHARDSON:	01:31:48
6	Q. Before the break, Mr. Barker, we were looking at	01:31:54
7	the cleanup and abatement order, Master Exhibit 1,	01:31:57
8	Table 2. Do you see that?	01:32:03
9	A. Yes, I do.	01:32:05
10	Q. I have a courtesy copy if you want, either one	01:32:06
11	of you.	01:32:09
12	A. Okay.	01:32:10
13	Q. And this table represents the post remedial	01:32:14
14	surface weighted average concentrations cleanup levels	01:32:19
15	for the site; correct?	01:32:24
16	A. Yes.	01:32:26
17	Q. And there are five chemicals of concern listed:	01:32:30
18	Copper, mercury, HPAHs, PCBs, and tributyltin; correct?	01:32:33
19	A. Right.	01:32:40
20	Q. Earlier, we discussed the supplemental triad	01:32:41
21	study that was conducted in July 2009. Do you recall	01:32:48
22	that study?	01:32:53
23	A. Yes, I do.	01:32:54
24	Q. And that we often refer to as the "now testing"?	01:32:55
25	A. Yes.	01:32:58

1 Q. And that study looked at five stations that 01:33:01  
2 previously had been sampled during the 2001/2002 period; 01:33:03  
3 correct? 01:33:08  
4 A. Yes. 01:33:09  
5 Q. And are those stations listed in DTR page 32-33? 01:33:11  
6 A. DTR page? 01:33:27  
7 Q. 32-34. Sorry. 01:33:28  
8 A. Okay. 01:33:32  
9 Q. And it's those five stations SW-06, SW-19,  
10 SW-30, NA-23, and NA-24? 01:33:37  
11 A. Yes. 01:33:41  
12 Q. I'll introduce this as Exhibit 1227. 01:33:58  
13 (Exhibit 1227 was marked.) 01:34:00  
14 BY MR. RICHARDSON: 01:34:15  
15 Q. Mr. Barker, this table summarizes the data from 01:34:24  
16 the 2001/2002 investigation at these five stations, as 01:34:29  
17 well as the 2009 investigation results for these five 01:34:34  
18 stations for the five primary CoCs. Do you see that? 01:34:39  
19 A. Yes. 01:34:44  
20 Q. I can represent that this chart is an accurate 01:34:45  
21 summary of the data collected from both of those studies. 01:34:47  
22 A. Okay. 01:34:55  
23 Q. The chart also includes the surface areas for 01:34:55  
24 each of the five stations in the second column. Do you 01:34:57  
25 see that? 01:35:01

1           A.    Yes. 01:35:07

2           Q.    The chart also includes a representation of the 01:35:13

3           percentages, percent changes, in the SWACs from 2001 01:35:18

4           sampling, 2002 sampling events to the 2009 sampling 01:35:23

5           events. Do you see that? 01:35:27

6           A.    Yes. 01:35:29

7           Q.    We'll mark this as Exhibit 1228. 01:35:47

8                     (Exhibit 1228 was marked.) 01:35:49

9           BY MR. RICHARDSON: 01:35:59

10          Q.    Mr. Barker, I'm handing you a series of tables 01:36:03

11          that are marked in the lower right-hand corner A through 01:36:08

12          E; A, B, C, D, E. Do you see that in the lower 01:36:13

13          right-hand corner? 01:36:20

14          A.    Yes, I do. 01:36:21

15          Q.    Would you verify that you -- the document I 01:36:22

16          handed you has all those pages, A through E? 01:36:23

17          A.    Yes, it has all of the pages A through E. 01:36:32

18          Q.    I'll represent to you that I've taken this data 01:36:37

19          and that it accurately represents the data collected from 01:36:39

20          the 2001/2002, as well as the 2009 studies. 01:36:42

21          A.    Okay. 01:36:48

22          Q.    Let's start with the page labeled "A" in the 01:36:49

23          right-hand corner. 01:36:52

24          A.    All right. 01:36:53

25          Q.    This shows the concentrations of the five 01:36:59

1 stations and the percent change in the surface weighted 01:37:01  
2 average concentration for those stations. Do you see 01:37:06  
3 that? 01:37:09  
4 A. Yes. 01:37:09  
5 Q. The concentrations on a surface weighted basis 01:37:12  
6 changed from 183 BPM to 167 BPM. Do you see that? 01:37:16  
7 A. Yes. 01:37:23  
8 Q. Are you aware of any active remediation of these 01:37:23  
9 polygons between 2001 and 2009? 01:37:26  
10 A. Oh, 2009. No, I'm not aware. 01:37:36  
11 Q. Wouldn't you agree that this data suggests that 01:37:45  
12 there has been some natural attenuation occurring in 01:37:47  
13 these areas of the shipyard? 01:37:52  
14 MR. CARRIGAN: Incomplete hypothetical. 01:37:54  
15 THE WITNESS: It -- it could suggest that. I 01:37:57  
16 would caveat that answer with the observe -- observation 01:38:09  
17 that sediment contaminant levels can fluctuate up and 01:38:12  
18 down even when the same sediment at the same point is 01:38:25  
19 sampled at the same time. 01:38:29  
20 BY MR. RICHARDSON: 01:38:34  
21 Q. Very fair. And we'll come back to that. 01:38:35  
22 A. Okay. 01:38:37  
23 Q. Would you also look at Table 2 in -- sorry -- in 01:38:39  
24 the cleanup and abatement order. 01:38:46  
25 A. Table -- 01:38:48

1 Q. Master Exhibit 1. 01:38:49  
2 A. Okay. 01:38:50  
3 Q. Just keep that in front of you. 01:38:51  
4 A. All right. Okay. 01:38:52  
5 Q. What is the surface weighted average 01:38:54  
6 concentration on a post remedial basis for copper? 01:38:56  
7 A. Is -- would be 159 milligrams per kilogram. 01:39:04  
8 Q. And that's the concentration at which after 01:39:09  
9 remediation occurs we'd like to see the site? 01:39:11  
10 A. Yes. 01:39:13  
11 Q. And so the surface weighted average 01:39:17  
12 concentration in these areas that were sampled in 2009 01:39:19  
13 are 167.8. And our ultimate goal for the site is 159; is 01:39:23  
14 that correct? 01:39:30  
15 MR. CARRIGAN: Misstates the document. 01:39:31  
16 THE WITNESS: Okay. The pre-remedial SWAC you 01:39:33  
17 indicated was 167 for copper? 01:39:39  
18 BY MR. RICHARDSON: 01:39:42  
19 Q. The -- the 2009 -- 01:39:43  
20 A. Oh, the -- 01:39:44  
21 Q. I'm sorry. I'll be more clear. 01:39:44  
22 If you look on Exhibit 1228. 01:39:47  
23 A. Okay. 01:39:49  
24 Q. Page A, the 2009 data shows that the surface 01:39:50  
25 weighted average concentration at that sampling event was 01:39:55

1 167.8. 01:39:58

2 A. Yes. 01:40:00

3 Q. On Table 2 of the cleanup and abatement order, 01:40:02

4 Master Exhibit 1, the cleanup levels for the site on a 01:40:04

5 surface weighted average concentration basis are 159 for 01:40:09

6 copper; correct? 01:40:13

7 A. Correct. 01:40:15

8 Q. So because these numbers are fairly close to 01:40:17

9 each other, wouldn't you agree that the site remedial 01:40:22

10 goals in Table 2 would be met within some reasonable 01:40:28

11 time? 01:40:32

12 MR. CARRIGAN: Vague. Incomplete hypothetical. 01:40:33

13 THE WITNESS: Oh, could be met at those five 01:40:38

14 stations? 01:40:41

15 MR. RICHARDSON: (Nods head.) 01:40:45

16 THE WITNESS: Yeah. If this data is, in fact, 01:40:58

17 that reductions are caused -- being caused by natural 01:41:04

18 recovery. And if that were to continue, it's -- it's 01:41:07

19 possible that the concentrations would eventually 01:41:15

20 decrease below the SWAC levels at those five sites. 01:41:21

21 Although, I don't know that that would be -- 01:41:29

22 result in the attainment -- the permanent attainment of 01:41:40

23 the SWAC. It would -- for the reasons we discussed 01:41:43

24 earlier, where contaminants, site physical disturbances 01:41:48

25 could result in -- in the re-exposure of contaminants to 01:41:59

1 the beneficial uses of the bay. 01:42:06  
2 BY MR. RICHARDSON: 01:42:09  
3 Q. Okay. We'll -- we'll come back to that, as 01:42:10  
4 well. 01:42:13  
5 A. All right. 01:42:13  
6 Q. But assuming that the reduction of 16 parts per 01:42:14  
7 million that occurred from 2002 to 2009 is a result of 01:42:20  
8 natural attenuation, then wouldn't you agree that it 01:42:24  
9 would continue to naturally attenuate to the cleanup 01:42:29  
10 goals within some reasonable time? 01:42:32  
11 MR. CARRIGAN: Incomplete hypothetical. 01:42:36  
12 THE WITNESS: That's a possibility, yes. 01:42:42  
13 BY MR. RICHARDSON: 01:42:44  
14 Q. Well, let's -- let's look at the page labeled B 01:42:44  
15 in the right-hand corner of Exhibit 1228. 01:42:50  
16 A. Level -- 01:42:57  
17 Q. It's the second page. It should say "B" -- "B" 01:42:58  
18 as in boy in the lower right-hand corner. 01:43:00  
19 A. Okay. Got it. 01:43:03  
20 Q. So this table lists the mercury concentrations 01:43:05  
21 at these five stations sampled in 2001, 2002, as well as 01:43:09  
22 2009. Do you see that? 01:43:15  
23 A. Yes. 01:43:18  
24 Q. I'll represent to you that now that all the data 01:43:19  
25 in all the five tables came from the studies conducted in 01:43:22

1 2001, 2002, and 2009, and are accurate. 01:43:25

2 A. Okay. 01:43:29

3 Q. The surface weighted average concentration 01:43:35

4 during the 2001/2002 study period for these five stations 01:43:36

5 was 1.5 milligrams per kilogram. Do you see that? 01:43:42

6 A. Yes, I see that. 01:43:49

7 Q. And the surface weighted average concentration 01:43:50

8 in 2009 was 0.8. Do you see that? 01:43:52

9 A. Yes. 01:43:55

10 Q. This amounts to a reduction in mercury 01:43:56

11 concentrations at these locations on a surface weighted 01:43:58

12 average basis of 49 percent. Do you see that? 01:44:02

13 A. Yes. 01:44:05

14 Q. As was the case with copper, wouldn't you agree 01:44:08

15 that this shows natural attenuation is already occurring 01:44:12

16 at the site? 01:44:16

17 MR. CARRIGAN: Incomplete hypothetical. 01:44:17

18 THE WITNESS: It -- it could so -- show that. 01:44:22

19 There might be other factors at play that could also 01:44:25

20 influence contaminant levels that are factors other than 01:44:29

21 natural attenuation, such as sediment site where there's 01:44:38

22 been some physical disturbance to it, causing sediment to 01:44:46

23 redistribute itself and affect levels, et cetera, at a 01:44:51

24 site. 01:44:58

25 BY MR. RICHARDSON: 01:44:58



1 Q. Okay. And I think you previously testified that 01:44:59  
2 physical disturbances could act to worsen conditions at 01:45:01  
3 the site. Here -- here physical disturbances could 01:45:05  
4 actually cause an improvement at the site? 01:45:08  
5 A. Or -- I mean, at a particular station, it might 01:45:11  
6 show that contaminant levels went down, but the 01:45:15  
7 contaminants that were at the station may have been 01:45:22  
8 redeposited at other locations in the bay, perhaps 01:45:28  
9 affecting previously uncontaminated areas. 01:45:35  
10 Q. Is there any evidence that that's occurring at 01:45:39  
11 these five stations that were sampled? 01:45:41  
12 A. I don't know that it would be possible to 01:45:44  
13 analyze that effect based on this data. But I -- I -- 01:45:50  
14 I'd have to look at a map and see exactly where these 01:46:02  
15 stations are and do a more thorough analysis of it. 01:46:05  
16 Maybe it would involve getting more sediment data at 01:46:13  
17 other locations, as well. But... 01:46:23  
18 Q. Was there a further answer, Mr. Barker? I 01:46:50  
19 didn't want to interrupt you. 01:46:52  
20 A. I mean, hypothetically speaking, if a source is 01:46:55  
21 controlled and there is sediment deposition occurring at 01:46:59  
22 a site, eventually contaminants would be buried by that 01:47:07  
23 sediment, absence other complicating factors and reasons. 01:47:13  
24 Q. Okay. I understand. So sedimentation would be 01:47:18  
25 one of the natural processes -- 01:47:21

1 A. Yes. 01:47:23

2 Q. -- that could attenuate the pollution. 01:47:23

3 A. Exactly. 01:47:26

4 Q. Let's look back at Table 2 and look at the 01:47:26

5 mercury surface weighted average cleanup level. 01:47:30

6 A. Okay. 01:47:33

7 Q. Do you see that? 01:47:41

8 A. Yes, I see it. 01:47:42

9 Q. And is that 0.68 milligrams per kilogram? 01:47:43

10 A. Yes, that's correct. 01:47:47

11 Q. And the 2009 surface weighted average 01:47:48

12 concentration at these polygons is 0.8? 01:47:51

13 A. Yes, that's correct. 01:48:02

14 Q. So the site conditions for these five polygons 01:48:03

15 are approaching the cleanup level of 0.68; correct? 01:48:06

16 A. It would seem so from this information, yes. 01:48:14

17 Q. Okay. If you'd turn to "C." On Exhibit 1228, 01:48:16

18 page C, we have a table showing the HPAH concentrations 01:48:28

19 in the 2001, 2002 and 2009 sampling events. 01:48:33

20 Do you see that the surface average weighted 01:48:43

21 concentration for this area in 2001/2002 was 2,823? 01:48:46

22 A. I do. 01:48:51

23 Q. And the 2009 sampling shows that the surface 01:48:51

24 weighted average concentration at that time was 2,293? 01:48:54

25 A. Yes. 01:48:59

1 Q. And that this represented a decrease of about 01:49:01  
2 18.8 percent? 01:49:03  
3 A. Yes. 01:49:05  
4 Q. Would you agree that this data shows natural 01:49:06  
5 attenuation of HPAHs at these five stations? 01:49:08  
6 MR. CARRIGAN: Incomplete hypothetical. 01:49:12  
7 THE WITNESS: It -- that's one -- one 01:49:15  
8 possibility to explain the trend of the data, yes. 01:49:19  
9 BY MR. RICHARDSON: 01:49:23  
10 Q. Okay. 01:49:23  
11 If we look at Table 2, the alternative cleanup 01:49:23  
12 levels, what is the cleanup level for HPAHs on a surface 01:49:27  
13 weighted average concentration basis? 01:49:32  
14 A. It's 2,451 micrograms per kilogram. 01:49:34  
15 Q. So the 2009 data of 2,293 micrograms per 01:49:42  
16 kilogram is actually lower than the required surface 01:49:48  
17 weighted average concentration of the alternative cleanup 01:49:52  
18 levels for HPAHs; correct? 01:49:56  
19 A. Yes, at -- at -- at -- those five sites, yes. 01:49:59  
20 Q. So would you agree that the site-wide cleanup 01:50:03  
21 goal for these five sites on a SWAC basis have already 01:50:07  
22 been achieved through natural attenuation? 01:50:13  
23 MR. CARRIGAN: Incomplete hypothetical. 01:50:15  
24 THE WITNESS: I -- I don't know -- 01:50:18  
25 MR. CARRIGAN: Misstates the document and the 01:50:19

1 data in the document. 01:50:21

2 THE WITNESS: I don't know that I could agree 01:50:24

3 with that. The -- the SWAC base levels in Table 2 are 01:50:25

4 based on site weighted average levels over the 01:50:34

5 approximately 65 polygon areas of the site that were -- 01:50:44

6 and reflects averaging over all of those areas. 01:50:56

7 And it's -- and while the magnitude of the 01:50:59

8 number from the -- on the SWAC basis of the five stations 01:51:07

9 shows a number less than the number that was based on 01:51:12

10 averaging over many -- a much larger area, the five 01:51:18

11 station SWAC is less than that number. But whether that 01:51:24

12 means the intent of the SWAC-based goals have been met, 01:51:28

13 I -- I think you would need to look at -- at the whole 01:51:36

14 picture, basically. 01:51:40

15 BY MR. RICHARDSON: 01:51:42

16 Q. So if I understand correctly, you're saying that 01:51:45

17 we'd want to know whether throughout the site -- 01:51:48

18 A. Yes. 01:51:52

19 Q. -- we're seeing -- 01:51:52

20 A. The same. 01:51:53

21 Q. -- a similar natural attenuation that's 01:51:53

22 occurring -- appears to be occurring at these five 01:51:55

23 stations? 01:51:57

24 A. Yes, yes, we would. 01:51:58

25 Q. If we are seeing natural attenuation at the 01:52:00

1 other stations consistent with what's observed in these 01:52:03  
2 five stations, then would you agree that the target level 01:52:07  
3 would be met through natural attenuation? 01:52:09  
4 MR. CARRIGAN: Assumes facts not in evidence. 01:52:12  
5 THE WITNESS: Yeah. Again, if source control is 01:52:17  
6 adequate and there is sediment deposition taking place at 01:52:22  
7 all locations throughout the study area, you -- you could 01:52:28  
8 see a -- a reduction in the SWAC levels at the site to 01:52:34  
9 levels below those specified in the cleanup and abatement 01:52:44  
10 order, Table 2. 01:52:49  
11 Then I think the -- along with that observation 01:52:52  
12 and the data, I think the attention would shift to the 01:52:58  
13 permanence of the achievement of the cleanup goals. 01:53:04  
14 Is -- would site disturbances re-expose contaminants and 01:53:07  
15 where -- where the -- where -- to the extent that the -- 01:53:23  
16 that natural deposition was not a permanent success, 01:53:28  
17 remedial success. 01:53:34  
18 BY MR. RICHARDSON: 01:53:37  
19 Q. Great. And we'll come back to that. 01:53:38  
20 A. Okay. 01:53:40  
21 Q. Moving to the next chart on page D of 01:53:43  
22 Exhibit 1228. This table lists the PCB concentrations 01:53:48  
23 from the 2001/2002 study, and from the 2009 study. 01:53:59  
24 Do you see that? 01:54:03  
25 A. Yes, I see that. 01:54:04

1 Q. And looking at the chart, the surface weighted 01:54:06  
2 average concentration for PCBs in the first study in 01:54:09  
3 2001/2002 was 247 nanograms per gram; is that right? 01:54:14  
4 A. Yes, that's correct. 01:54:23  
5 Q. And the 2009 surface weighted average 01:54:26  
6 concentration for these five stations is 188.7. 01:54:29  
7 Do you see that? 01:54:34  
8 A. Yes. 01:54:35  
9 Q. This represented a decrease of approximately 01:54:36  
10 24 percent. Do you see that? 01:54:39  
11 A. I do, yes. 01:54:41  
12 Q. Wouldn't you agree that this data also shows 01:54:44  
13 natural attenuation is already occurring at the site on a 01:54:47  
14 SWAC basis for PCBs? 01:54:50  
15 MR. CARRIGAN: Incomplete hypothetical. 01:54:52  
16 THE WITNESS: It's similar to my other 01:54:56  
17 responses. I would say that it's possible that the 01:54:58  
18 reduction in levels is occurring from natural recovery. 01:55:02  
19 There could be other factors at play. I -- I would note 01:55:12  
20 that, for example, at NA23, it shows PCBs increasing at 01:55:16  
21 that station. And you would -- and if natural recovery 01:55:25  
22 were occurring uniformly across the five stations, you 01:55:36  
23 wouldn't -- I would think ideally you would not see an 01:55:41  
24 increase in PCB concentrations. 01:55:45  
25 Q. But Mr. Barker, didn't you testify with respect 01:55:47

1 to Exhibit 1226 in looking at the chart on page 5 that 01:55:50  
2 there is some natural variability that occurs even in the 01:55:54  
3 presence of natural attenuation? 01:55:57  
4 A. Yes. 01:56:00  
5 Q. So is the mere presence of a single data point 01:56:01  
6 that exceeds the prior data point doesn't mean natural 01:56:04  
7 attenuation is not occurring; correct? 01:56:08  
8 A. Yeah. That fact alone doesn't mean that 01:56:19  
9 sediment isn't being deposited at the site. 01:56:21  
10 Q. You want to look at the whole data set; right? 01:56:24  
11 A. Right, yes. 01:56:27  
12 Q. Okay. 01:56:28  
13 If we can look at Table 2, what is the post 01:56:28  
14 remedial alternative cleanup level on a SWAC basis for 01:56:31  
15 PCBs? 01:56:35  
16 A. It's 194 micrograms per kilogram. 01:56:37  
17 Q. So isn't it true that the -- for these five 01:56:42  
18 stations, the surface weighted average concentration in 01:56:44  
19 2009 is below the post remedial alternative cleanup 01:56:46  
20 levels for PCBs? 01:56:52  
21 A. That the 2009 SWAC calculated at the five 01:56:57  
22 stations, yes, that -- that number is less than the 01:57:00  
23 194 micrograms per kilogram. 01:57:08  
24 Q. Okay. 01:57:12  
25 Let's look at page E of Exhibit 1228. This 01:57:12

1 table is a list of the tributyltin or T -- TBT 01:57:22  
2 concentrations at these five stations from the 2001/2002 01:57:27  
3 study and the 2009 study. 01:57:32  
4 A. Yes. 01:57:34  
5 Q. Do you see that? 01:57:34  
6 A. Yes. 01:57:35  
7 Q. Looking at the chart, it shows that the surface 01:57:36  
8 weighted average concentration for TBT in the 2001/2002 01:57:40  
9 time frame was 82.1 micrograms per kilogram. Do you see 01:57:47  
10 that? 01:57:51  
11 A. Yes. 01:57:51  
12 Q. And the 2009 data shows that the surface 01:57:51  
13 weighted average concentration for TBT at that time was 01:57:55  
14 23.3 micrograms per kilogram. Do you see that? 01:57:59  
15 A. Yes. 01:58:03  
16 Q. And this represents a decrease of approximately 01:58:03  
17 72 percent. Do you see that? 01:58:06  
18 A. Yes. 01:58:08  
19 Q. Wouldn't you agree that this data shows that 01:58:10  
20 natural attenuation is already occurring at the site for 01:58:12  
21 TBT? 01:58:15  
22 MR. CARRIGAN: Incomplete hypothetical. 01:58:16  
23 THE WITNESS: Attenuation as you're using the 01:58:23  
24 word, that could include degradation of waste products. 01:58:26  
25 Yes, it does suggest that could be occurring here, yes. 01:58:32



1 BY MR. RICHARDSON: 01:58:35

2 Q. I'd like to refer you back to Table 2 of the 01:58:37

3 cleanup and abatement order. 01:58:42

4 A. Okay. 01:58:43

5 Q. And I'm at Table 2. What is the surface 01:58:44

6 weighted average concentration cleanup level for 01:58:46

7 tributyltin? 01:58:49

8 A. 110 micrograms per kilogram. 01:58:51

9 Q. So would you agree that the 2009 data shows that 01:58:53

10 the site has lower TBT concentrations on a surface 01:58:56

11 weighted average concentration basis for these five 01:59:00

12 stations than the alternative cleanup level? 01:59:04

13 A. Yes, that the calculated SWAC for the five 01:59:07

14 stations in 2009 yielded a result less than the 01:59:13

15 110 micrograms per kilogram. 01:59:21

16 Q. And isn't -- I'm sorry. Go ahead. 01:59:24

17 A. Just alternative cleanup level in the order. 01:59:27

18 Q. Thank you. 01:59:31

19 And isn't that consistent with your findings at 01:59:32

20 the boatyard site in Exhibit 1210 that TBT does naturally 01:59:34

21 degrade? 01:59:40

22 A. It -- it -- yeah. It provides some reason for 01:59:41

23 further inquiry into the observation there to, you know, 01:59:54

24 that that is a possibility. Yeah. 01:59:58

25 Q. Okay. And that possibility was realized at the 02:00:03

1 Bay City Marine site; correct? 02:00:05  
2 MR. CARRIGAN: Vague. 02:00:08  
3 MR. RICHARDSON: I agree. Let me rephrase to 02:00:10  
4 make sure the record's clear. 02:00:12  
5 BY MR. RICHARDSON: 02:00:13  
6 Q. Isn't it true that the Regional Board staff 02:00:13  
7 concluded that TBT would naturally degrade at the 02:00:17  
8 Bay City Marine site? 02:00:19  
9 A. Let me get that exhibit in front of me. Hang on 02:00:23  
10 a second. I want to qualify my answer. 02:00:27  
11 Q. It's Exhibit 1210. 02:00:31  
12 MR. CARRIGAN: 1214? 02:00:33  
13 MR. RICHARDSON: I think it's 1210. 02:00:34  
14 MR. CARRIGAN: 1210 is the one with the chart on 02:00:36  
15 it, isn't it? 02:00:40  
16 MR. RICHARDSON: Correct. That's it. 02:00:41  
17 MR. CARRIGAN: Oh, okay. 02:00:44  
18 THE WITNESS: There was a -- I think there was 02:00:45  
19 an exhibit where we had the complete order for Bay City 02:00:47  
20 Marine. That's it. Let me just glance at this a second. 02:00:52  
21 MR. RICHARDSON: Which exhibit -- 02:01:00  
22 MR. CARRIGAN: 1214. 02:01:01  
23 THE WITNESS: I just want to -- I just wanted to 02:01:02  
24 refresh my memory on our basis for the findings that we 02:01:36  
25 had on degradation of tributyltin. The -- 02:01:40

1 BY MR. RICHARDSON: 02:01:47

2 Q. You may be wanting to refer to Exhibit 1225, 02:01:48

3 then. 02:01:51

4 A. Okay. 02:01:51

5 Q. Finding No. 8 -- 18 -- 18B, as in boy. 02:01:52

6 A. Oh, 18B. Okay. Yeah. Okay. 02:01:56

7 Yeah. The data for making these conclusions was 02:02:09

8 limited at the time but nonetheless, we made them. One 02:02:18

9 thing that we did not do is there was not post 02:02:26

10 remediation monitoring at any of the Commercial Basin 02:02:29

11 sites to verify that the assumptions being made to derive 02:02:34

12 the cleanup levels were, in fact, occurring at the site 02:02:44

13 after the cleanup. 02:02:47

14 For example, that there were -- that the 02:02:49

15 degradation of tributyltin down to elemental tin, that 02:02:54

16 wasn't verified with on-site post remedial sampling. It 02:02:59

17 was -- conclusions were drawn that that would occur, and 02:03:04

18 the cleanup order was issued. 02:03:09

19 Q. Okay. 02:03:11

20 A. So whether it actually occurred there or not, we 02:03:11

21 never got data to indicate whether it did or did not. 02:03:14

22 Q. But there was an independent finding that TBT 02:03:18

23 undergoes rapid -- 02:03:21

24 A. Yes. 02:03:23

25 Q. -- natural degradation in the environment 02:03:23

1 correct? 02:03:24

2 A. Yes, that's correct. 02:03:25

3 Q. And this data that we're seeing on Exhibit 1228, 02:03:26

4 page E, is consistent with that finding, isn't it, where 02:03:29

5 we see a 72 percent reduction in TBT over the course of 02:03:35

6 seven years? 02:03:39

7 A. Yeah. Yes. It -- it indicates that trend is -- 02:03:40

8 that that might be the reason for that trend there, yes. 02:03:46

9 Could be other reasons, but maybe that's a primary 02:03:50

10 reason. 02:03:53

11 Q. Okay. Looking at this data collectively, we 02:03:54

12 sample the total of five stations in the 2009 testing; 02:03:58

13 correct? 02:04:02

14 A. Yes. 02:04:02

15 Q. The post remedial SWAC numbers for at least 02:04:08

16 these five areas have been met for three of the CoCs; 02:04:12

17 correct? 02:04:16

18 MR. CARRIGAN: At the five stations? 02:04:23

19 MR. RICHARDSON: At the five stations, right. 02:04:25

20 THE WITNESS: Let's see. So -- so far we 02:04:27

21 examined tributyltin and copper, mercury, PCBs. And one 02:04:28

22 of those was not below the level, I think. And the other 02:04:39

23 three were, yeah. 02:04:44

24 BY MR. RICHARDSON: 02:04:46

25 Q. Okay. So of the two that were not, copper, the 02:04:47

1 goal is 159. And we are at 167. 02:04:49

2 A. Yeah. 02:04:53

3 Q. Which seems marginally above the goal? 02:04:54

4 A. Right. 02:04:56

5 Q. And then the second one is mercury at .8, when 02:04:57

6 the cleanup level is .7 or .68, which again seems 02:04:59

7 marginally above the goal; correct? 02:05:03

8 A. Uh-huh. 02:05:06

9 Q. Was that yes? 02:05:06

10 A. Yes. 02:05:07

11 Q. And then the remaining three are all below the 02:05:07

12 alternative cleanup levels; correct? 02:05:10

13 A. Yes. 02:05:13

14 Q. Yesterday we discussed Exhibit 1206, which was 02:05:22

15 the directive of the Regional Board to conduct the 02:05:31

16 assessment at the shipyard site that ultimately resulted 02:05:36

17 in the 2001/2002 test data; correct? 02:05:39

18 A. Correct. 02:05:42

19 Q. And in that study, if you recall from our 02:05:43

20 discussion yesterday, it required an evaluation of the 02:05:46

21 potential natural processes that could support a no 02:05:50

22 action alternative, including dispersal of contaminants 02:05:57

23 by natural processes and natural detoxification of 02:06:02

24 contaminated sediments, restricting access to the site, 02:06:04

25 monitoring of water sediments and organisms. 02:06:08

1 Do you recall that? 02:06:15

2 A. Yes. 02:06:16

3 Q. So NASSCO was directed to look at this. The 02:06:18

4 work plan listed the factors that NASSCO was supposed to 02:06:21

5 consider in evaluating natural attenuation. NASSCO then 02:06:24

6 dutifully did so and came up with the 2003 report that is 02:06:31

7 Master Exhibit 4. I'm giving you an excerpt of that as a 02:06:42

8 courtesy copy. 02:06:51

9 A. Okay. 02:06:52

10 Q. The paragraph in the center of that page starts 02:06:53

11 "a comparison." Do you see that? 02:06:55

12 A. Let's see. Okay. I see it, yes. 02:07:00

13 Q. Do you recall what Exponent recommended for the 02:07:05

14 remedial alternative to be applied at the NASSCO 02:07:07

15 shipyard? 02:07:10

16 A. I believe they called for monitored natural 02:07:11

17 recovery. 02:07:17

18 Q. And is it correct that dredging would destroy 02:07:27

19 the existing benthic communities at the site? I believe 02:07:32

20 you've already testified on this. I'm just confirming 02:07:38

21 your testimony. 02:07:40

22 A. Right. Not permanently. I mean, yes, destroy 02:07:41

23 them initially, and they may re-establish themselves 02:07:43

24 later, yes. 02:07:47

25 Q. And you testified that you don't know what type 02:07:48

1 of species would re-establish after the -- 02:07:49  
2 A. That's correct. 02:07:52  
3 Q. -- benthic community was destroyed; is that 02:07:52  
4 correct? 02:07:55  
5 A. Correct. 02:07:56  
6 Q. So the work plan required NASSCO to look at 02:07:56  
7 natural attenuation. NASSCO did the study under Regional 02:07:58  
8 Board's direction. NASSCO's consultant, Exponent, 02:08:02  
9 recommended that natural attenuation be selected as the 02:08:07  
10 remedy. The 2009 data suggests on all five accounts, all 02:08:10  
11 the CoCs that were studied, that natural attenuation is 02:08:15  
12 occurring. 02:08:20  
13 Do you agree, then, that natural attenuation is 02:08:25  
14 at least a viable remedial alternative for the NASSCO 02:08:27  
15 site? 02:08:30  
16 MR. CARRIGAN: Misstates facts in evidence. 02:08:31  
17 THE WITNESS: No. The -- the staff -- I mean, 02:08:41  
18 when we looked at the Exponent report, we -- we were not 02:08:45  
19 in agreement that the entire remediation effort could 02:08:50  
20 be -- that -- could be addressed through natural 02:08:57  
21 recovery. 02:09:01  
22 We weren't ruling it out for, perhaps, certain 02:09:02  
23 areas of the site where, for example, where dredging 02:09:09  
24 could not occur and removal, that natural recovery might 02:09:16  
25 be employed. But we did not believe the site was an 02:09:22

1 appropriate site to address with natural recovery as the 02:09:27  
2 sole remedial alternative. 02:09:34  
3 BY MR. RICHARDSON: 02:09:37  
4 Q. And I can appreciate, Mr. Barker, that you 02:09:37  
5 didn't have the benefit in 2003 of the 2009 data. 02:09:39  
6 A. Yes. 02:09:43  
7 Q. But now that you do have the benefit of the 2009 02:09:44  
8 data, that does show significant reductions in the CoCs, 02:09:46  
9 indeed some of the CoCs below the alternative cleanup 02:09:50  
10 levels that are ordered to be met in the cleanup and 02:09:53  
11 abatement order. 02:09:55  
12 A. Right. 02:09:56  
13 Q. Doesn't that now mean that at least it's a 02:09:56  
14 potentially viable option to remediate the site through 02:09:59  
15 monitored natural attenuation? 02:10:02  
16 MR. CARRIGAN: Misstates facts in evidence. 02:10:06  
17 THE WITNESS: I -- I believe our concerns with 02:10:08  
18 the disturbances at the site are -- would still -- and 02:10:10  
19 the fact that we believe those disturbances are such 02:10:18  
20 that -- that we would probably still reach the same -- we 02:10:21  
21 would reach the same conclusion that natural recovery 02:10:32  
22 should not be used as the sole remedial alternative for 02:10:36  
23 the site. 02:10:44  
24 BY MR. RICHARDSON: 02:10:47  
25 Q. On several occasions you've raised this concern 02:10:54



1 about the potential for physical disturbances. 02:10:57

2 A. Yes. 02:11:01

3 Q. And I'm trying to understand that better. If I 02:11:01

4 recall, you testified that where there are physical 02:11:05

5 disturbances such as NA-20 and NA22, we see benthic 02:11:11

6 communities that are not mature. They're Phase 1 or 02:11:15

7 Stage 1 benthic communities. 02:11:17

8 A. Correct. 02:11:21

9 Q. But throughout most of the shipyard, as is 02:11:21

10 reported in the DTR and consistent with your prior 02:11:22

11 testimony, most of the shipyard has mature Stage 3 02:11:25

12 benthic communities. And I thought you suggested that 02:11:28

13 that meant there would not be physical disturbance or at 02:11:31

14 least not significant physical disturbance in those 02:11:35

15 areas. Isn't that correct? 02:11:37

16 A. I guess it -- relative to areas at the site 02:11:43

17 where there have been physical disturbances, I guess 02:11:49

18 the -- it's a more healthier benthic community at the 02:11:53

19 locations that -- where -- that were away from known 02:11:59

20 physical disturbances. 02:12:06

21 Q. And those areas that were away from known 02:12:07

22 physical disturbances indicate no difference compared to 02:12:10

23 reference conditions for the benthic communities; 02:12:12

24 correct? 02:12:15

25 A. Yes. I believe that was what the data -- data 02:12:16

1 indicated. 02:12:20

2 Q. Okay. We'll come back to a few of those issues. 02:12:21

3 But for now why don't we move on to another topic, 02:12:24

4 remediation of other sediment sites throughout San Diego 02:12:32

5 and California. 02:12:35

6 A. Okay. 02:12:36

7 Q. As we discussed previously, you have been 02:12:36

8 designated as the Cleanup Team's person most 02:12:38

9 knowledgeable regarding other sediment remediations in 02:12:40

10 San Diego and California; correct? 02:12:43

11 A. Correct. 02:12:45

12 Q. As we discussed, you've been designated as the 02:12:47

13 Cleanup Team's person most knowledgeable. Do you believe 02:12:49

14 that you are the Cleanup Team's person most 02:12:54

15 knowledgeable? 02:12:56

16 A. Yes. 02:12:57

17 Q. And why is that? 02:12:57

18 A. Just due -- primarily due to my work experience 02:13:00

19 on this project, as well as other sediment cleanup sites 02:13:06

20 on San Diego Bay. 02:13:13

21 Q. And from Exhibit 1210, my understanding is you 02:13:20

22 worked on most, if not all, the sites listed in this. 02:13:23

23 A. Yes, that's correct. 02:13:27

24 Q. Are you familiar with Resolution 92-49? 02:13:40

25 A. Yes. 02:13:43

1 Q. This is Master Exhibit 5. Do you have a copy 02:13:51  
2 there? 02:13:56  
3 MR. CARRIGAN: It's -- what's the title of it? 02:13:59  
4 MR. RICHARDSON: It's the 92-49. 02:14:01  
5 MR. CARRIGAN: I don't. That's the one thing 02:14:03  
6 you didn't provide me with a copy of. 02:14:04  
7 MR. RICHARDSON: A courtesy copy? I'm not sure 02:14:06  
8 I have extra copies of this. Can we get the 02:14:07  
9 Master Exhibit 5? 02:14:09  
10 THE COURT REPORTER: That was not in our 02:14:14  
11 exhibits, actually. 02:14:15  
12 MR. RICHARDSON: Okay. 02:14:16  
13 MR. CARRIGAN: 1208 is the one -- 02:14:17  
14 MR. RICHARDSON: 1208, did I give you that? 02:14:20  
15 MR. CARRIGAN: It might have gotten introduced. 02:14:21  
16 MR. RICHARDSON: Oh, yes, I did. I -- I 02:14:24  
17 introduced it as 1208. I think you can have my copy. I 02:14:24  
18 just want to make sure that I did not interlineate. 02:14:31  
19 MR. CARRIGAN: It doesn't say NASSCO is liable 02:14:34  
20 on it, does it? If it does, you better not hand it over 02:14:36  
21 to me. 02:14:40  
22 MR. RICHARDSON: I'm looking closely. No. This 02:14:41  
23 is a clean copy. I wrote 1208 on the top but -- 02:14:43  
24 MR. CARRIGAN: Thank you. 02:14:46  
25 MR. RICHARDSON: You're welcome. And we should 02:14:48

1 be sure this gets introduced as Master Exhibit 5. 02:14:50  
2 BY MR. RICHARDSON: 02:15:05  
3 Q. So you're familiar with this document? 02:15:06  
4 A. Yes. 02:15:08  
5 Q. Would you look at paragraph 7? 02:15:10  
6 A. Paragraph 7. Okay. 02:15:13  
7 Q. Can you explain to me what paragraph 7 is 02:15:23  
8 intended to do? 02:15:27  
9 MR. CARRIGAN: Calls for a legal conclusion. 02:15:29  
10 THE WITNESS: The intent of paragraph 7 is 02:15:44  
11 establishing that it is in the interest of the people of 02:15:46  
12 the state for the State Water Board to provide guidance 02:15:52  
13 through the Resolution 92-49 to -- to the boards. 02:16:00  
14 BY MR. RICHARDSON: 02:16:11  
15 Q. So it's a consistency provision. 02:16:11  
16 A. Yes, a consistency provision. 02:16:13  
17 Q. So the goal is regardless of the type of 02:16:15  
18 discharge, the State wants to ensure that there are 02:16:17  
19 standard policies and procedures applicable to 02:16:19  
20 investigations and cleanup of sites? 02:16:21  
21 A. Exactly. That's -- that is true. 02:16:23  
22 Q. Okay. So let's look at Section 2A-9. It's on 02:16:24  
23 page 7 of 21. 02:16:32  
24 A. Okay. 2A. 02:16:39  
25 Q. Paragraph 9. 02:16:46

1 A. 2A -- okay. 02:16:46

2 Q. I'll give you a minute to read it and refresh 02:16:51  
3 your recollection. 02:16:53

4 A. Okay. 02:16:58

5 Q. Okay. So this states that, "The Regional 02:16:59  
6 Water Board shall prescribe cleanup levels which are 02:17:01  
7 consistent with appropriate levels set by the Regional 02:17:06  
8 Water Board for analogous discharges that involve similar 02:17:09  
9 waste, site characteristics, and water quality 02:17:12  
10 considerations." Do you see that? 02:17:16

11 A. Yes. 02:17:17

12 Q. So in essence, would you agree that 02:17:18  
13 Resolution 92-49 requires the Regional Boards to treat 02:17:20  
14 similar sites similarly? 02:17:24

15 MR. CARRIGAN: Calls for a legal conclusion. 02:17:28

16 THE WITNESS: It suggests that that -- it should 02:17:33  
17 be a goal, yes. 02:17:35

18 BY MR. RICHARDSON: 02:17:37

19 Q. This is back to the consistency purpose of 02:17:37  
20 92-49; right? 02:17:39

21 A. Right. 02:17:42

22 Q. Did the Cleanup Team follow Resolution 92-49 02:17:43  
23 when it evaluated what cleanup levels to set for the 02:17:46  
24 site? 02:17:50

25 A. Yes, pretty much yes. The -- in evaluating 02:17:57

1 cleanup levels and the alternative levels, the staff 02:18:02  
2 followed the principles in Resolution 92-49. I might 02:18:07  
3 point out there's a lot of material in Resolution 92-49 02:18:14  
4 that deals with soil and groundwater that wasn't directly 02:18:18  
5 applicable. And so we -- we looked at what -- what we 02:18:21  
6 felt was applicable and followed those principles. 02:18:27  
7 Q. Is the Cleanup Team required to follow 92-49 at 02:18:33  
8 the site? 02:18:36  
9 MR. CARRIGAN: Calls for a legal conclusion. 02:18:37  
10 THE WITNESS: Yes. We believe that the setting 02:18:39  
11 of cleanup levels needs to be consistent with the 02:18:45  
12 principles in Resolution 92-49. As part of the process, 02:18:49  
13 we actually asked for a legal opinion from the State 02:18:58  
14 Board Office of Chief Counsel. And I -- I think in the 02:19:00  
15 administrative record, that was one of the documents that 02:19:04  
16 was included, was a legal opinion that they issued 02:19:10  
17 that -- where they concluded that the policy was 02:19:13  
18 applicable to the sediment cleanup site. 02:19:18  
19 BY MR. RICHARDSON: 02:19:24  
20 Q. As we go through the additional lines of 02:19:28  
21 questions here, you may want to just keep that one 02:19:30  
22 paragraph 9 in front of you. I'll keep referring back to 02:19:32  
23 it. 02:19:35  
24 A. Okay. All right. 02:19:35  
25 Q. Is it fair to say that the Cleanup Team 02:19:35

1 evaluated other sites in San Diego Bay where sediment 02:19:38  
2 cleanup levels had been established to see if the 02:19:43  
3 shipyard site had analogous discharges that involved 02:19:47  
4 similar waste, had similar characteristics, and had 02:19:50  
5 similar water quality considerations? 02:19:53  
6 A. Yes. Very much so. The staff board -- well, 02:19:55  
7 the staff focused on levels that had been set at the 02:20:03  
8 Campbell Shipyard. And actually, there was an effort 02:20:14  
9 during the 1990s to examine assigning those same levels 02:20:17  
10 to the Shipyard Sediment Site, in cleaning up the site to 02:20:22  
11 reach those goals. And for various reasons, that was 02:20:27  
12 ultimately determined not to -- to be not appropriate and 02:20:35  
13 that a site-specific study needed to be done. 02:20:39  
14 Q. And we'll go through that in more detail here in 02:20:44  
15 a moment. So that was sites in San Diego Bay. 02:20:46  
16 Did you undertake a similar process for sites 02:20:48  
17 elsewhere in California? 02:20:50  
18 A. I don't -- I don't recall that. I just recall 02:20:53  
19 San Diego Bay. And we may have done some document 02:20:58  
20 searches. I think there was a shipyard up in the 02:21:03  
21 San Francisco Bay area that we at least looked at. Those 02:21:08  
22 are the only two that I remember. 02:21:15  
23 Q. I'm sorry. The San Francisco Bay Shipyard, and 02:21:23  
24 what was the second site? 02:21:27  
25 A. Well, the Campbell Shipyard Site. 02:21:28

1 Q. Oh, Campbell. 02:21:30

2 A. And as -- in -- in producing the latest version 02:21:31

3 of the DTR, there was at various areas in the document, 02:21:36

4 there's footnotes that indicated that such and such a 02:21:42

5 factor was consistent with what was being done at a -- at 02:21:45

6 various sites around the country, up in Oregon and 02:21:51

7 Washington area or back in the Hudson River in New York. 02:21:55

8 So yeah. 02:22:00

9 Q. So in general, for the analysis of 92-49 in 02:22:02

10 paragraph 9 where it says similar sites should be treated 02:22:07

11 similarly -- 02:22:11

12 A. Yeah. 02:22:11

13 Q. -- your analysis included the San Francisco Bay 02:22:11

14 Shipyard and the Campbell Shipyard; is that correct? 02:22:15

15 A. Yeah, primarily so. Yeah. 02:22:21

16 Q. Any others? 02:22:23

17 A. I would say within the DTR, the sites that are 02:22:28

18 called out in that document. I don't recall the names of 02:22:35

19 all of them. But certainly they would be included in a 02:22:38

20 complete response, should be. 02:22:44

21 Q. But you don't recall what those are off the top 02:22:48

22 of your head? 02:22:50

23 A. Names of them, no, I don't. But they are 02:22:51

24 footnoted at various places in the DTR. 02:22:53

25 Q. Looking at paragraph 9 again, how does the 02:23:00



1 Cleanup Team interpret the phrase "analogous discharges"? 02:23:04  
2 MR. CARRIGAN: Calls for a legal conclusion. 02:23:09  
3 THE WITNESS: I would say analogous discharges 02:23:10  
4 would be discharges with the same types of 02:23:14  
5 characteristics. Certainly, we were -- paid close 02:23:18  
6 attention to the Campbell shipyard discharge because 02:23:28  
7 there were obvious similarities with that facility and 02:23:31  
8 NASSCO and BAE. 02:23:35  
9 BY MR. RICHARDSON: 02:23:42  
10 Q. Paragraph 9 also refers to analogous site 02:23:42  
11 characteristics or similar site characteristics. What 02:23:47  
12 would be the characteristics that the Cleanup Team looked 02:23:51  
13 at? 02:23:54  
14 A. This would be -- I -- I think with site 02:23:56  
15 characteristics, we probably focused more on 02:23:59  
16 San Diego Bay, Campbell Shipyard Site. It's the same 02:24:03  
17 water body, same type of sediment there, that type of 02:24:07  
18 thing. 02:24:11  
19 Q. Same historic uses? 02:24:12  
20 A. Yes. 02:24:14  
21 Q. Same types of commercial and industrial 02:24:17  
22 activities? 02:24:20  
23 A. Types of -- the level of the activities may have 02:24:23  
24 differed. Campbell shipyard is not the same size, for 02:24:25  
25 example, as NASSCO. But again, similarities in the 02:24:29

1 operations, yes. 02:24:34

2 Q. Okay. And another similar site characteristic 02:24:36

3 that you may look at, not necessarily you did look at, at 02:24:38

4 Campbell or any other site, but types of characteristics 02:24:41

5 you would look at, would you look at the receptors at the 02:24:46

6 site? 02:24:48

7 A. Yes. 02:24:49

8 Q. And you said water body, what water body? 02:24:51

9 A. Yes. 02:24:54

10 Q. Other geographic conditions? 02:24:55

11 A. Yes. Yeah, we consider that. 02:24:57

12 Q. Geologic and hydrogeologic conditions? 02:25:01

13 A. Yeah, certainly that would -- I don't recall -- 02:25:06

14 I believe, yeah, we did look at that. There was a fairly 02:25:11

15 complete assessment report for the Campbell site done 02:25:15

16 that had extensive technical information in it. 02:25:20

17 Q. But you would deem it important to look at the 02:25:23

18 geologic and hydrogeologic -- 02:25:26

19 A. Yes. 02:25:28

20 Q. -- conditions in assessing whether sites are 02:25:28

21 similar? 02:25:31

22 A. Yes. 02:25:31

23 Q. You would also look at sediment characteristics? 02:25:31

24 A. Yes. 02:25:35

25 Q. Such as fines? 02:25:35

1	A. Yes, the pattern and distribution of	02:25:36
2	contaminants, et cetera.	02:25:38
3	Q. Okay. 92-49, paragraph 9, also refers to	02:25:43
4	similar water quality considerations.	02:25:47
5	A. Paragraph 9. Okay.	02:25:51
6	Q. And so which factors would the Cleanup Team use	02:25:54
7	in assessing whether a site is similar with respect to	02:25:57
8	water quality considerations?	02:26:00
9	A. Well, the types of beneficial uses assigned to	02:26:02
10	the water body. The types of applicable water quality	02:26:08
11	standards that would apply to the water body, whether the	02:26:17
12	water body was an enclosed bay, an estuary kind of	02:26:25
13	similarity.	02:26:36
14	Q. Would you also look at beneficial uses?	02:26:36
15	A. Yes.	02:26:39
16	Q. The level of contamination relative to	02:26:39
17	background?	02:26:42
18	A. Yes, that could be a consideration, yes.	02:26:42
19	Q. How about the presence of municipal storm water	02:26:45
20	outfalls?	02:26:49
21	A. Yes, yeah.	02:26:55
22	Q. Potential sources of urban runoff?	02:26:56
23	A. Yeah.	02:27:00
24	Q. Other potential sources of contamination?	02:27:01
25	A. Now we're -- we're saying where we would	02:27:08

1 compare -- in our comparison of analogous sites, yeah, 02:27:13  
2 all of those factors could enter into the comparison. 02:27:18  
3 Q. Any others you can think of for that? 02:27:22  
4 A. No. 02:27:24  
5 Q. Okay. In paragraph 9 also refers to similar 02:27:24  
6 wastes. 02:27:28  
7 Can you tell me what waste characteristics that 02:27:30  
8 the Cleanup Team evaluates when determining whether a 02:27:33  
9 site involves similar wastes? 02:27:37  
10 A. The source of the wastes, what type of 02:27:39  
11 activities are occurring that are generating the waste, 02:27:41  
12 and are those activities similar or similar chemicals and 02:27:46  
13 products used in -- in the activity, that kind of thing. 02:27:53  
14 Q. The type of CoCs that are involved? 02:27:57  
15 A. Yes. 02:28:00  
16 Q. Just a few more minutes, and then we'll take a 02:28:06  
17 break. 02:28:09  
18 A. Okay. 02:28:10  
19 Q. I'm sorry. Actually, now is a good time to take 02:28:16  
20 a break. We're heading into a new line of questions. So 02:28:19  
21 does that work for you? 02:28:19  
22 A. All right. Yes. 02:28:20  
23 Q. Five minutes? 02:28:20  
24 A. It's fine. Yes. 02:28:21  
25 THE VIDEOGRAPHER: This ends Videotape No. 2 in 02:28:22

1 the deposition of David Barker. The time off the record 02:28:24  
2 is 2:28 p.m. 02:28:27  
3 (A recess was taken.) 02:28:30  
4 THE VIDEOGRAPHER: This begins Videotape No. 3 02:45:45  
5 in the deposition of David Barker. The time on the 02:45:47  
6 record is 2:45 p.m. 02:45:50  
7 BY MR. RICHARDSON: 02:45:52  
8 Q. Mr. Barker, if you would, would you look at 02:45:55  
9 Exhibit 1210? 02:45:57  
10 A. Exhibit 1210. Okay. 02:46:00  
11 Q. These are the verified responses and objections 02:46:03  
12 to NASSCO's second set of special interrogatories. 02:46:05  
13 A. All right. 02:46:09  
14 Q. Do you see that? 02:46:10  
15 A. Yes. 02:46:11  
16 Q. After page 14, there is a verification page. Is 02:46:11  
17 this your signature on the verification page? 02:46:15  
18 A. Yes, it is. 02:46:18  
19 Q. Do you understand that by verifying these 02:46:19  
20 responses, you represent that you know the contents and 02:46:21  
21 declare the information contained in them to be true and 02:46:24  
22 correct? 02:46:27  
23 A. Yes, I do. 02:46:27  
24 Q. And attached to Exhibit 10 is a table that we've 02:46:29  
25 been referring to throughout these two days of 02:46:31

1 deposition. You verified the information contained in 02:46:36  
2 that table was true and correct, as well. 02:46:39  
3 A. Yes. 02:46:41  
4 Q. And according to the response to 02:46:46  
5 Interrogatory 14, the sites in this chart are the sites 02:46:48  
6 in San Diego Bay where contaminated sediment has been 02:46:52  
7 remediated. Do you agree with that? 02:46:56  
8 A. Yes. 02:46:59  
9 Q. In looking at this chart, Exhibit A to 02:47:08  
10 Exhibit 1210, do any of these sites involve analogous 02:47:11  
11 discharges to the NASSCO site? 02:47:18  
12 A. Yes, they do. Or yes, somewhat analogous, yeah. 02:47:21  
13 Q. I mean analogous in the sense that under 02:47:29  
14 paragraph 9 of Exhibit 1208 that they are analogous sites 02:47:31  
15 for purposes of 92-49. 02:47:38  
16 MR. CARRIGAN: Calls for a legal conclusion. 02:47:41  
17 THE WITNESS: Yes. There are some -- some -- 02:47:43  
18 some characteristics that would warrant examination. 02:47:45  
19 BY MR. RICHARDSON: 02:47:52  
20 Q. Okay. Let's look at the Campbell Shipyard Site. 02:48:02  
21 A. Okay. 02:48:05  
22 Q. Do you agree that the Campbell shipyard site 02:48:10  
23 involves analogous discharges? 02:48:13  
24 A. Yes. 02:48:16  
25 Q. To the NASSCO site? 02:48:16

1 A. Yes, some similarities, yes, right. 02:48:19  
2 Q. So they're both shipyards; correct? 02:48:23  
3 A. Right. 02:48:26  
4 Q. They had similar historic operations; correct? 02:48:28  
5 A. Yes, right. 02:48:30  
6 Q. Similar NPDS permits? 02:48:32  
7 A. (Nods head.) 02:48:35  
8 Q. Correct? 02:48:36  
9 A. Yes. 02:48:36  
10 Q. Do you agree that the Campbell site involves 02:48:39  
11 similar wastes? 02:48:42  
12 A. Yes. I -- I think there -- there would be a lot 02:48:48  
13 of similarity between the wastes. They -- there may be 02:48:51  
14 differences in the variety of the waste, but there would 02:48:55  
15 certainly be common elements for sure. 02:48:58  
16 Q. And on Exhibit A to Exhibit 1210, the pollutants 02:49:01  
17 of concern listed for the Campbell Industries Shipyard 02:49:05  
18 Site were the same as those for the NASSCO site; correct? 02:49:12  
19 A. I think there -- there are some differences. 02:49:17  
20 Q. Okay. All five primary CoCs at the NASSCO site 02:49:22  
21 are included within the Campbell site; correct? 02:49:26  
22 A. I believe so, yes. 02:49:29  
23 Q. Okay. Do you agree that the Campbell site 02:49:30  
24 involved similar site characteristics to the shipyard 02:49:35  
25 site? 02:49:38

1 A. Some similar characteristics, yeah. 02:49:42  
2 Q. Such as? 02:49:46  
3 A. The same water body. The same type of sediment 02:49:50  
4 on the -- although the distribution of the sediment 02:49:59  
5 particle sizes, there may have been differences in that. 02:50:06  
6 But -- so those would be the two things, same type of 02:50:10  
7 receptors, as we discussed previously, receptors of 02:50:17  
8 concern. 02:50:23  
9 Q. Located geographically fairly close to each 02:50:24  
10 other; right? 02:50:26  
11 A. Yes. 02:50:27  
12 Q. It's less than a mile? 02:50:27  
13 A. Yes. 02:50:29  
14 Q. And the Campbell site was approximately 13 acres 02:50:30  
15 of water; correct? 02:50:32  
16 A. I -- I -- I don't know that to be a fact. That 02:50:37  
17 sounds right. I'd have to consult our documents to see. 02:50:39  
18 Q. I'll introduce this as 1229. 02:50:54  
19 (Exhibit 1229 was marked.) 02:50:57  
20 BY MR. RICHARDSON: 02:51:16  
21 Q. Mr. Barker, I'm handing you the conceptual work 02:51:19  
22 plan for the Campbell Shipyard Site. Do you see that? 02:51:22  
23 A. Okay. 02:51:28  
24 Q. And the number in the lower right-hand corner, 02:51:30  
25 the Bates number indicates this was produced by the 02:51:33



1 Cleanup Team; correct? 02:51:35

2 MR. CARRIGAN: I'll represent to you, David, 02:51:41

3 that's what that Bates number means. 02:51:42

4 THE WITNESS: Okay. Then that is correct. 02:51:45

5 BY MR. RICHARDSON: 02:51:46

6 Q. All right. Thank you. If we look at page 02:51:47

7 ending in three digit numbers 811. 02:51:49

8 A. 811. I have it. Yes. 02:51:58

9 Q. In the first paragraph, this indicates that 02:52:00

10 there was approximately 13 acres of tidelands; correct? 02:52:03

11 A. Yes, it does. 02:52:07

12 Q. And at 18-32, there's a diagram showing the site 02:52:10

13 in relation to other areas in San Diego Bay. 02:52:16

14 Do you see that? 02:52:22

15 A. On page 18-32. Okay. And this -- your comment 02:52:25

16 on that? 02:52:46

17 Q. Do you see where the Campbell site's located? 02:52:48

18 A. Yes, I do. 02:52:51

19 Q. And do you know where the NASSCO shipyard is 02:52:52

20 located? 02:52:53

21 A. Yes, I do. 02:52:54

22 Q. And can you see that based on the scale shown in 02:52:55

23 the bottom of the page that it's less than a mile between 02:52:58

24 the two sites? 02:53:00

25 A. Yes. 02:53:02

1 Q. So they're geographically located close to each 02:53:03  
2 other. 02:53:05  
3 A. Yes. 02:53:06  
4 Q. And there's approximately 13 acres of submerged 02:53:06  
5 tidelands at Campbell. Do you know the approximate water 02:53:12  
6 area of the NASSCO leasehold? 02:53:17  
7 A. I could consult the DTR. I think that figure is 02:53:20  
8 listed there. 02:53:23  
9 Q. Okay. And it's about 40 acres; does that sound 02:53:24  
10 right? 02:53:28  
11 A. That sounds right. 02:53:29  
12 Q. So a little bit larger but same order of 02:53:30  
13 magnitude as Campbell? 02:53:32  
14 A. Yes. 02:53:35  
15 Q. Okay. And if we look at Exhibit 1209, this is 02:53:38  
16 the cleanup and abatement order issued to Campbell 02:54:08  
17 shipyard. Do you see that? 02:54:12  
18 A. Yes, I do. 02:54:30  
19 Q. Okay. If you'd look at paragraph 27 on page 14 02:54:31  
20 of the order, which is Bates labeled last three digits 02:54:37  
21 360. 02:54:42  
22 A. 360. Okay. 02:54:44  
23 Q. Paragraph 27. 02:54:47  
24 A. All right. 02:54:49  
25 Q. Do you see this indicates that there are storm 02:54:49

1 drain outfalls located in the area of the Campbell 02:54:54  
2 shipyard? 02:54:58  
3 A. Yes, I see that. 02:55:08  
4 Q. Okay. And there's a total of four, one within 02:55:09  
5 the Campbell shipyard immediate area, and three in the 02:55:12  
6 immediate area around the shipyard; correct? 02:55:15  
7 A. Yes. 02:55:18  
8 Q. And then at the NASSCO Shipyard Site, there are 02:55:18  
9 also MS4 discharges, as well; correct? 02:55:21  
10 A. Yes. 02:55:24  
11 Q. That would be SW9. 02:55:25  
12 A. Yes. 02:55:27  
13 Q. Plus storm water discharges that drain into 02:55:27  
14 Chollas Creek. 02:55:32  
15 A. That's correct, yes. 02:55:33  
16 Q. Okay. Do you agree that Campbell site involves 02:55:36  
17 similar water quality considerations as the shipyard -- 02:55:39  
18 as the NASSCO site? 02:55:41  
19 A. Yes, I do. 02:55:45  
20 Q. And so that's both in the same water body; 02:55:49  
21 correct? 02:55:52  
22 A. Same types of beneficial uses and water quality 02:55:52  
23 standards, similar receptors of concern. 02:55:55  
24 Q. Would you also agree it has similar potential 02:56:10  
25 for recontamination? 02:56:13

1           A.    There is -- the last time I reviewed the                   02:56:18  
2    Campbell site, it's been some years.  And we -- at that           02:56:24  
3    time that order was issued, we weren't paying as much           02:56:32  
4    attention to recontamination from MS4 drains as perhaps           02:56:36  
5    we should have.  The storm water program was kind of in           02:56:42  
6    its infancy at that time.   02:56:47  
7           Q.    So if you look at page 8 --                           02:56:59  
8           A.    Okay.   02:57:00  
9           Q.    -- of Exhibit 1229.                                   02:57:01  
10          A.    Exhibit 8.   02:57:03  
11          Q.    I'm sorry.  Page 8 of Exhibit 1229.  This is       02:57:04  
12          back to the conceptual work plan.                           02:57:09  
13          A.    Okay.  Oh, excuse me.  All right.  Exhibit.  All   02:57:11  
14          right.   02:57:34  
15          Q.    Under Section 2.4, doesn't this indicate that       02:57:34  
16          there was a potential recontamination from Switzer Creek   02:57:38  
17          between the Campbell leasehold and Tenth Avenue Marine   02:57:43  
18          Terminal?   02:57:46  
19          A.    Okay.  Yes, it does.                                   02:57:54  
20          Q.    And isn't that similar to the shipyard site in       02:57:56  
21          that the -- there is potential of recontamination at       02:57:58  
22          NASSCO from Chollas Creek adjacent to the NASSCO           02:58:02  
23          shipyard?   02:58:05  
24          A.    Yes, somewhat similar, yes.  There may be some       02:58:06  
25          differences, whereas Switzer Creek emptied, I believe,     02:58:16

1 into the Campbell site more directly than Chollas Creek, 02:58:21  
2 which is -- well, I guess it flows through part of 02:58:25  
3 NASSCO's leasehold. But it's off to the -- to the 02:58:30  
4 immediately adjacent to it. 02:58:34  
5 Q. Isn't it true that for the -- the Campbell 02:58:37  
6 Shipyard Site, the discharge was to the south of that 02:58:39  
7 shipyard as well? 02:58:42  
8 A. Yes. That is true. 02:58:44  
9 Q. Okay. So based on our discussion of the 02:58:45  
10 similarities between the Campbell Shipyard Site and the 02:58:49  
11 NASSCO site, would you agree that it should be considered 02:58:52  
12 an analogous site for purposes of your analysis under 02:58:56  
13 Resolution 92-49, paragraph 9? 02:59:00  
14 MR. CARRIGAN: Calls for a legal conclusion. 02:59:02  
15 THE WITNESS: Yeah. I -- I believe there are 02:59:05  
16 similar -- similarities between the -- the sites where 02:59:07  
17 certainly cleanup work at the Campbell site should be -- 02:59:12  
18 is kind of a relevant consideration. 02:59:18  
19 BY MR. RICHARDSON: 02:59:25  
20 Q. Okay. I'll introduce this as Exhibit 1230. 02:59:26  
21 (Exhibit 1230 was marked.) 02:59:41  
22 BY MR. RICHARDSON: 02:59:55  
23 Q. Mr. Barker, I'm handing you a staff report on 02:59:55  
24 the establishment of shipyard sediment cleanup levels -- 02:59:58  
25 A. Okay. 03:00:01

1 Q. -- for NASSCO and Southwest Marine, dated 03:00:01  
2 February 17, 1999. Do you see that? 03:00:04  
3 A. Yes. 03:00:07  
4 Q. Do you recall this document? 03:00:07  
5 A. Yes, I do. 03:00:08  
6 Q. Did you work on the preparation of this 03:00:09  
7 document? 03:00:10  
8 A. Let's see. I -- I had staff under my 03:00:11  
9 supervision that was working on it, yes. 03:00:21  
10 Q. Would you look at page -- Bates page last three 03:00:30  
11 numbers 257. 03:00:34  
12 A. 257. Okay. 03:00:35  
13 Q. The very last full paragraph. 03:00:37  
14 A. Yes. I see that. 03:00:40  
15 Q. The staff report notes that it was appropriate 03:00:43  
16 to apply cleanup levels developed for Campbell site to 03:00:45  
17 the NASSCO and Southwest Marine sites. 03:00:48  
18 A. Yes. 03:00:50  
19 Q. And that it's based on similarities between 03:00:51  
20 physical, biological, and chemical conditions. 03:00:53  
21 A. Yes. 03:00:56  
22 Q. At Campbell and NASSCO. 03:00:56  
23 A. Yes. 03:00:58  
24 Q. And the fact that Campbell Shipyard is 03:01:00  
25 physically located in San Diego Bay just north of NASSCO? 03:01:02

1 A. Yes. 03:01:08

2 Q. Do you see the bullets under that paragraph? 03:01:09

3 A. Yep. 03:01:14

4 Q. Where it notes, "Campbell and NASSCO are 03:01:15

5 comparable in terms of site activities, waste materials, 03:01:17

6 and matrices"? 03:01:20

7 A. Yes. 03:01:22

8 Q. That Campbell and NASSCO are similar -- sorry -- 03:01:23

9 the same hydrodynamic and biogeographic zones. 03:01:24

10 A. Yes. 03:01:29

11 Q. And that Campbell and NASSCO are influenced by a 03:01:29

12 similar suite of pollutants from off site? 03:01:31

13 A. Yes. 03:01:34

14 Q. On page 658. 03:01:36

15 MR. CARRIGAN: 258? 03:01:45

16 MR. RICHARDSON: Sorry. Two -- 258. Page 258. 03:01:46

17 MR. CARRIGAN: The very next page. 03:01:49

18 MR. RICHARDSON: The very next page. 03:01:50

19 BY MR. RICHARDSON: 03:01:53

20 Q. The very last sentence of the first paragraph, 03:01:54

21 do you see that? It begins "it is appropriate." 03:02:00

22 A. The very last sentence of the first. 03:02:09

23 Q. Yeah, the first paragraph discusses 03:02:09

24 Shelter Island Boatyard. 03:02:10

25 A. Yeah. I got it. 03:02:14

1 Q. The very last paragraph says it's appropriate to 03:02:14  
2 apply the Shelter Island Boatyard mercury cleanup levels, 03:02:14  
3 4.2 milligrams per kilogram, to the NASSCO site. 03:02:18  
4 A. Yes. 03:02:22  
5 Q. And then it lists the explanations for that. 03:02:22  
6 A. Yes. Okay. 03:02:24  
7 Q. Do you see that? 03:02:25  
8 A. Yes, I do. 03:02:26  
9 Q. And the boatyards are similar to the shipyards 03:02:26  
10 in terms of site activities, waste materials, and 03:02:30  
11 matrices? 03:02:30  
12 A. Yes. 03:02:31  
13 Q. The boatyards and shipyards are both in 03:02:32  
14 San Diego Bay? 03:02:34  
15 A. Uh-huh. 03:02:35  
16 Q. And that the data from the 11 stations used to 03:02:35  
17 derive Shelter Island Boatyard mercury level is 03:02:39  
18 comparable to the 15 stations used to derive the Campbell 03:02:39  
19 cleanup levels? 03:02:44  
20 A. Yes. 03:02:45  
21 Q. Do you agree that the analysis in these last two 03:02:48  
22 pages we've been discussing was the -- your staff's 03:02:51  
23 attempt to comply with the provisions of 92-49 that 03:02:55  
24 similar sites be treated similarly? 03:03:00  
25 A. Yes. And it was kind of an attempt to also 03:03:03



1 expedite cleanup of the site by taking advantages of a 03:03:11  
2 biological study, effect study done at one site and 03:03:18  
3 weighing the benefits of just applying those results at 03:03:26  
4 another site and obtaining a -- a quicker cleanup in the 03:03:29  
5 process. 03:03:34  
6 Q. Okay. We'll come back to that. 03:03:36  
7 A. Okay. 03:03:38  
8 Q. Would you agree that the cleanup levels for the 03:03:40  
9 shipyard site are significantly lower than the levels 03:03:43  
10 established for Campbell and Shelter Island? 03:03:55  
11 MR. CARRIGAN: Vague. 03:03:59  
12 THE WITNESS: If I could just examine that -- 03:04:00  
13 MR. RICHARDSON: It will be Exhibit 8 to 03:04:05  
14 Exhibit 1210. 03:04:07  
15 THE WITNESS: That big spreadsheet. 03:04:08  
16 MR. RICHARDSON: Yeah. 03:04:09  
17 MR. CARRIGAN: I keep thinking I have that out. 03:04:10  
18 THE WITNESS: Okay. 03:04:12  
19 MR. CARRIGAN: Oh, there it is. 03:04:24  
20 THE WITNESS: Okay. Got it. All right. 03:04:26  
21 Cleanup levels at Campbell, yes, they are -- they are -- 03:04:33  
22 the proposed levels at the shipyard site are more 03:04:44  
23 stringent than the Campbell levels, yes. 03:04:49  
24 BY MR. RICHARDSON: 03:04:51  
25 Q. Okay. I'll introduce this as 1231. 03:04:55

1 (Exhibit 1231 was marked.) 03:05:02

2 MR. CARRIGAN: I'm going to leave 1210 out. 03:05:15

3 MR. RICHARDSON: What's that? 03:05:17

4 MR. CARRIGAN: I said I'm going to leave 1210 03:05:18

5 out. 03:05:19

6 MR. RICHARDSON: Yes. Please do. 03:05:20

7 BY MR. RICHARDSON: 03:05:32

8 Q. Mr. Barker, I've handed you the final Regional 03:05:32

9 Board report for the shipyard sediment cleanup levels for 03:05:35

10 NASSCO dated February 16th, 2001. Do you see that? 03:05:38

11 A. Yes, I do. 03:05:42

12 Q. Are you familiar with this document? 03:05:46

13 A. I recall the document. I haven't looked at it 03:05:47

14 in a long time. 03:05:50

15 Q. Was it developed under your direction? 03:05:53

16 A. Yes, it was. 03:05:56

17 Q. Between 1999 draft report that we just looked at 03:06:06

18 and this 2001 final report, did the staff recommendation 03:06:09

19 to use the Campbell and Shelter Island cleanup levels 03:06:14

20 change? 03:06:17

21 A. I'd have to freshen my memory. I believe what 03:06:23

22 happened is a -- a peer review panel was set up to peer 03:06:28

23 review the -- the issue of was it appropriate to use the 03:06:36

24 Campbell cleanup levels at the NASSCO and BAE shipyard 03:06:47

25 site. And there were, as I recall -- recall, there were 03:06:51

1 three reviewers on this panel. And they each submitted 03:06:57  
2 an opinion on that. 03:07:02  
3 Q. And if you -- I'm sorry. 03:07:05  
4 A. That's all. 03:07:07  
5 Q. Okay. If you'd look at page 19 of the report. 03:07:08  
6 A. Okay. 03:07:12  
7 Q. With Bates number 988. 03:07:13  
8 A. 988. 03:07:16  
9 Q. There's a discussion, I believe, of the peer 03:07:18  
10 review panel you're referring to. 03:07:20  
11 A. Yes. 03:07:22  
12 Q. So did that peer review panel include 03:07:22  
13 Mr. Steve Bay of Southern California Coastal Water 03:07:24  
14 Research Project? 03:07:26  
15 A. Yes. 03:07:29  
16 Q. And the review panel also included Russell Ferry 03:07:30  
17 of Moss Landing Marine Laboratories. 03:07:32  
18 A. Yes. 03:07:37  
19 Q. And Todd Thornberg of Hart Krauser? 03:07:37  
20 A. Yes. 03:07:40  
21 Q. And they peer reviewed the validity of using the 03:07:40  
22 Campbell and Shelter Island cleanup levels for the NASSCO 03:07:43  
23 site; correct? 03:07:47  
24 A. Yes. 03:07:47  
25 Q. On the next page, I understand this to be a 03:07:52

1 summary of each of those peer reviewer's thoughts on -- 03:07:58  
2 on that issue. 03:08:00  
3 A. Yes. 03:08:02  
4 Q. And if I understand Mr. Bay's conclusion of 03:08:03  
5 SCCWRP, he concluded that using the Campbell cleanup 03:08:07  
6 levels was appropriate. There was insufficient data to 03:08:10  
7 allow him to conclude whether he should apply the 03:08:16  
8 Campbell and -- strike that. Start that one over. 03:08:19  
9 MR. CARRIGAN: I was just going to say document 03:08:24  
10 speaks for itself. Go ahead. You can characterize it, I 03:08:26  
11 guess. 03:08:29  
12 THE WITNESS: Yeah. 03:08:30  
13 BY MR. RICHARDSON: 03:08:30  
14 Q. Did Mr. Bay conclude that there was insufficient 03:08:30  
15 data to allow him to find that we should use the Campbell 03:08:33  
16 cleanup levels at NASSCO? 03:08:37  
17 A. Yes. I -- I believe -- believe that was the 03:08:48  
18 results of his review. 03:08:50  
19 Q. Okay. And did Mr. Ferry conclude that the AET 03:08:54  
20 approach was not appropriate for either Campbell or the 03:08:58  
21 NASSCO site? 03:09:01  
22 A. Let's see. I vaguely recall that. But I'd -- 03:09:06  
23 I'd have to review this in more detail to -- I know there 03:09:17  
24 was a question on the number of stations. And perhaps 03:09:22  
25 that -- the adverse effects threshold procedure was 03:09:26

1 criticized by Mr. Ferry. But I -- without reading this, 03:09:36  
2 I would -- I would -- would just be speculating. I think 03:09:44  
3 that's correct, but I -- I don't know that. 03:09:48  
4 Q. But the AETs were eventually used at the 03:09:49  
5 Campbell shipyard site; correct? 03:09:52  
6 A. That's correct. Yes, that's correct. 03:09:55  
7 Q. And then the third peer reviewer, Mr. Thornberg 03:09:58  
8 at Hart Krauser, is it correct that he concluded that it 03:10:05  
9 was appropriate to use the Campbell levels for the 03:10:07  
10 shipyard site? 03:10:10  
11 A. I believe that's correct, yes. 03:10:10  
12 Q. So we had one expert say don't use them; one 03:10:11  
13 expert said don't use them; and one expert said, "I need 03:10:14  
14 more data before I decide"; is that correct? 03:10:17  
15 A. Yes, yes. 03:10:20  
16 Q. Experts. 03:10:21  
17 A. Yes. 03:10:22  
18 Q. So if you look at page -- I'm sorry. Just a 03:10:27  
19 moment -- 975, Bates No. 975. 03:10:36  
20 Do you recall what staff's final recommendation 03:10:48  
21 was to the executive officer and Regional Board after 03:10:52  
22 reviewing these three different peer reviews of the LAET 03:10:54  
23 approach? 03:11:00  
24 A. I'd have to review it. I -- I -- I think that 03:11:04  
25 our recommendation led to the -- a decision to develop 03:11:07

1 site-specific levels there. 03:11:13

2 Q. So it sounds like, in essence, you agreed with 03:11:21

3 one of the expert's findings that -- that we should-- we 03:11:24

4 have insufficient data and need more analysis. 03:11:27

5 A. Yes, yes. In the end we kind of reluctantly let 03:11:31

6 go of the proposal to use Campbell levels at the site. 03:11:35

7 Q. Who reluctantly let go of using Campbell's? 03:11:44

8 A. The staff did. But on balance, based on the 03:11:49

9 concerns being expressed, we felt that it was no longer a 03:11:55

10 viable alternative to use those levels at the site; that 03:12:02

11 there was too much criticism of that from experts working 03:12:08

12 in the field, and to the point where we felt our board 03:12:14

13 would not be comfortable moving forward with that 03:12:22

14 proposal. 03:12:25

15 Q. By "experts in the field," do you mean 03:12:27

16 Russell Ferry of Moss Landing? 03:12:32

17 A. Yes, and Steve Bay, yes. 03:12:34

18 Q. My understanding is Steve Bay simply concluded 03:12:36

19 there was insufficient data to determine whether 03:12:38

20 Campbell Shipyard AETs applied. 03:12:40

21 A. I -- again, I haven't read through the document. 03:12:43

22 I -- he may have also had some concern about the possible 03:12:48

23 differences at the site that might yield a different AET 03:12:58

24 result if the tests were conducted right at NASSCO's site 03:13:03

25 versus the Campbell site. 03:13:11

1 Q. So Mr. Bay and Mr. Thornberg did not object to 03:13:13  
2 the AET approach; only Russell Ferry of Moss Landing did; 03:13:17  
3 correct? 03:13:24  
4 A. The more you're asking me this, the more I'm 03:13:25  
5 thinking I want to read this document to refresh my 03:13:28  
6 memory. The AET approach is -- I don't think either 03:13:30  
7 Steve Bay or Russell Ferry are strong advocates of that 03:13:40  
8 approach being the sole basis for determining a cleanup 03:13:45  
9 level. So... 03:13:48  
10 Q. Okay. We can come back to that. That's fine. 03:13:51  
11 A. All right. 03:13:54  
12 Q. So the conclusion was staff recommended that a 03:13:55  
13 further study be done, and the board eventually issued 03:13:59  
14 13267 orders that we discussed yesterday -- 03:14:02  
15 A. Yes. 03:14:05  
16 Q. -- requiring the shipyards -- 03:14:05  
17 A. Yes. 03:14:06  
18 Q. -- to do a study; correct? 03:14:06  
19 A. Yes. Right. I might add I've just glanced at 03:14:08  
20 page 20 here where it looks like it gets into a summary 03:14:11  
21 of their -- each individual's opinion. And I noted that 03:14:15  
22 Steve Bay observed that contamination patterns differ 03:14:20  
23 among the -- the sites, and relationship between effects 03:14:25  
24 and chemicals may differ between the sites. So it sounds 03:14:31  
25 like he was uncomfortable with using samples collected at 03:14:34

1 another site in lieu of site-specific data. 03:14:38

2 Q. Right. So it sounds like he wanted 03:14:42

3 site-specific data, but he would accept the AET approach 03:14:45

4 in Bullet 2. He just needed more data to do so. 03:14:48

5 A. Yeah. It sounds like that, yeah. 03:14:53

6 Q. Okay. And we've looked at the 2003 Exponent 03:14:54

7 report that is introduced as a master exhibit. 03:14:58

8 And it's my understanding, correct, that that 03:15:01

9 report was submitted in response to this 13267 that we 03:15:04

10 just referenced to? 03:15:10

11 A. Yes, that's correct. 03:15:11

12 Q. So generally where a site uses a site-specific 03:15:15

13 study to come up with cleanup levels, it's generally more 03:15:19

14 accurate and conservative? 03:15:22

15 A. Yes. Yes. 03:15:24

16 Q. Moving forward to the issuance of the cleanup 03:15:28

17 and abatement order in 2005, is it your recollection that 03:15:30

18 the findings in that order were based on the Exponent 03:15:37

19 2003 study? 03:15:42

20 A. Yes. That was the -- the data that we -- we 03:15:47

21 used in the report came from -- from the 2003 Exponent 03:15:50

22 study. I don't know that the findings didn't agree with 03:15:55

23 every conclusion in the study. But certainly the -- the 03:16:01

24 data was used, yes. 03:16:06

25 Q. Okay. Was the Resolution 92-49 comparison 03:16:09



1 between Campbell and the NASSCO site as to the 03:16:16  
2 appropriate application of the AETs revisited in the 2005 03:16:20  
3 tentative CAO? 03:16:25

4 A. I don't recall that it was. I think it was back 03:16:26  
5 in 2001 when we issued the investigative order, we 03:16:32  
6 basically let go of that concept as a viable option. 03:16:38

7 Q. And that was let go also in the first release of 03:16:42  
8 the Cleanup Team's Draft Technical Report in 2008; 03:16:45  
9 correct? 03:16:49

10 A. Yes. 03:16:50

11 Q. However, in the current CAO and DTR, there is a 03:16:53  
12 discussion of AETs; correct? 03:16:56

13 A. Yes, there is. 03:16:59

14 Q. So the DTR has used the apparent effects 03:17:00  
15 threshold approach developed for the Campbell Shipyard 03:17:04  
16 Site but with site-specific NASSCO data; correct? 03:17:07

17 A. Yes. I just caveat my answer. Along with 03:17:12  
18 another sediment chemistry threshold methodology referred 03:17:17  
19 to as SSMEQ and along with employment of a conservative, 03:17:26  
20 I guess, safety factor for the advance -- or excuse me -- 03:17:32  
21 adverse effects threshold, yeah. Yeah. 03:17:38

22 Q. So the LAET you're referring to, the lowest 03:17:42  
23 apparent effects threshold, you mentioned conservative 03:17:46  
24 factors. So the DTR used the LAET model but put some 03:17:49  
25 level of additional conservatism in it? 03:17:54

1 A. Absolutely, yes. 03:17:58

2 Q. And what was that conservatism? 03:18:00

3 A. It applied a 60 percent of -- of the -- whatever 03:18:03

4 the calculated LAET value was for a chemical that was 03:18:07

5 60 percent of that was -- it had a safety factor of 03:18:14

6 60 percent multiplied, times to further reduce it. 03:18:18

7 Q. Okay. So if my understanding is correct, at the 03:18:25

8 Campbell shipyard they used an apparent effects 03:18:27

9 threshold. 03:18:30

10 A. Yes. 03:18:30

11 Q. We used the lowest apparent effects threshold, 03:18:31

12 which is the lowest number that -- 03:18:33

13 A. Yes. 03:18:35

14 Q. -- there is an apparent effect. 03:18:35

15 A. Yes. 03:18:36

16 Q. And then we took a 40 percent safety buffer 03:18:36

17 below that and used that as our measure of 03:18:41

18 protectiveness? 03:18:43

19 A. A 60 percent. 03:18:44

20 Q. So it's 60 percent of that number. It's 03:18:45

21 40 percent below the lowest number; correct? 03:18:47

22 A. Okay. Yes. 03:18:50

23 Q. And that -- both the SSMEQ and that LAET 03:18:51

24 approach are reliable predictors of likely benthic 03:18:57

25 impairment; correct? And I'd refer you to page 32-34 of 03:19:03

1 the DTR. 03:19:11

2 A. Okay. Yeah. Okay. Yes. That was our -- the 03:19:12

3 staff's conclusion, that we could employ those thresholds 03:19:32

4 at the shipyard site to address concerns about impacts to 03:19:37

5 the benthic community. 03:19:43

6 Q. So using those two measures are likely 03:19:45

7 predictors of any like -- of any benthic impairment at 03:19:48

8 other locations throughout the shipyard? 03:19:51

9 A. Yes, of, yeah, likely benthic impairment. 03:19:53

10 Q. That's one of the issues that were tested in the 03:19:57

11 2009 now sampling; correct? 03:20:00

12 A. Exactly. 03:20:02

13 Q. And it confirmed this statement; correct? 03:20:02

14 A. Yes, it did. 03:20:04

15 Q. Comparing the lowest apparent effects threshold, 03:20:06

16 LAET levels, found in Table 32-19. 03:20:11

17 A. 32-19. 03:20:20

18 Q. Comparing those numbers with the cleanup levels 03:20:25

19 from the Campbell Shipyard Site in Exhibit 1210, 03:20:27

20 Exhibit A. 03:20:32

21 A. Okay. 03:20:33

22 Q. Would you agree that the -- the NASSCO LAET 03:20:38

23 screening value, 60 percent screening value, are lower 03:20:42

24 than the Campbell cleanup levels for everything but PCBs? 03:20:49

25 A. Let's see. Copper, the 60 percent value is 03:20:57

1 lower. 03:21:04

2 Q. Lower at the shipyard site? 03:21:05

3 A. Lower at the shipyard site. 03:21:06

4 Q. So the numbers are 552 milligrams per kilogram 03:21:08

5 at the shipyard site -- sorry -- 159 at the shipyard 03:21:11

6 site. 03:21:17

7 A. I'm not sure. Let's see. The 60 percent LAET 03:21:24

8 at the shipyard site was 552 for copper. And at the 03:21:27

9 Campbell site, it was two -- 231 parts per -- 03:21:36

10 Q. For the dredge it was 810; correct? 03:21:42

11 A. Or excuse me. 810, correct. 03:21:45

12 Q. Okay. And then for HPAHs? 03:21:48

13 A. Let's see. Three columns up. Okay. It was -- 03:21:55

14 at the shipyard site, they calculated 60 percent of the 03:22:04

15 LAET was 15.3 parts per million. And then at Campbell 03:22:07

16 site, HP -- that was for HPAHs. And at the Campbell site 03:22:13

17 it was 44 parts per million. So that's more 03:22:20

18 conservative. 03:22:22

19 Q. Thank you. And then for TBT? 03:22:24

20 A. Okay. TBT at the shipyard site, 60 percent of 03:22:25

21 the LAET value was calculated at 1,110 micrograms per 03:22:29

22 kilogram. And at the Campbell site it was 03:22:37

23 5.75 milligrams per kilogram. 03:22:47

24 Q. So for all those CoCs, the 60 percent LAET 03:22:54

25 approach at the shipyard site is significantly below the 03:22:59

1 Campbell cleanup levels; correct? 03:23:02

2 A. Yes. 03:23:04

3 Q. Let's look at the Commercial Basin harbor 03:23:05

4 boatyards. 03:23:09

5 A. Okay. 03:23:10

6 Q. In Exhibit A to Exhibit 1210 again, do you agree 03:23:15

7 that the seven Commercial Basin boatyards -- I'm going to 03:23:25

8 list them and I may pronounce it wrong -- 03:23:34

9 Eichenlaub Marine? 03:23:36

10 A. Eichenlaub Marine. 03:23:38

11 Q. Shelter Island Boatyard, Bay City Marine, 03:23:40

12 Driscoll Boatyard, Kettenburg Marine, Koehler Kraft, and 03:23:43

13 Mauricio and Sons are all within the Commercial Basin 03:23:49

14 boatyard category you described previously? 03:23:52

15 A. Yes. 03:23:54

16 Q. So if I refer to these jointly as the Commercial 03:23:56

17 Basin boatyards, will you understand that I'm referring 03:23:59

18 to these seven sites? 03:24:01

19 A. Yes, I do. 03:24:02

20 Q. Good. Because we don't have to go through each 03:24:03

21 one independently then. 03:24:05

22 A. Yes. That is good. 03:24:08

23 MR. BENSHOOF: Concur. 03:24:13

24 BY MR. RICHARDSON: 03:24:14

25 Q. Do you agree that the Commercial Basin boatyards 03:24:14

1 sites involve analogous discharges to the shipyard site? 03:24:17

2 A. Similar types of waste, the volumes involved 03:24:26

3 would -- would not be similar. They're smaller 03:24:30

4 facilities. 03:24:32

5 Q. They're all involved in vessel repair and 03:24:35

6 construction. 03:24:37

7 A. Construction, yes. 03:24:38

8 Q. Similar historical operations? 03:24:40

9 A. Yes. 03:24:42

10 Q. Similar storm water discharges. 03:24:42

11 A. (Nods head.) 03:24:46

12 Q. Did you agree that similar storm water 03:24:49

13 discharges? 03:24:51

14 A. I -- I don't recall storm water discharges being 03:24:53

15 part of the consideration over at the boatyards. I know 03:25:02

16 there's MS4 storm drains that empty into the basin. I 03:25:05

17 don't recall how many or where those were located. 03:25:11

18 Q. And then storm water from the facilities would 03:25:16

19 be similar? 03:25:18

20 A. I would think so, at least -- again, you know, 03:25:20

21 the land area is not the same, so the volume of run-off 03:25:25

22 wouldn't be the same. But maybe in -- some of the same 03:25:29

23 types of potential for contaminants to get into the storm 03:25:35

24 water, yeah. 03:25:39

25 Q. Do you agree that the Commercial Basin boatyard 03:25:44

1 sites involve similar wastes as the NASSCO site? I can 03:25:46  
2 refer you to Exhibit A of 1210. 03:25:53  
3 A. Yeah. I -- yeah. I would say there are similar 03:25:56  
4 waste types. There may be a -- a -- a bigger variety of 03:25:59  
5 wastes at NASSCO than at the smaller boatyards. But 03:26:04  
6 certainly common elements. 03:26:09  
7 Q. Okay. And those pollutants of concern that are 03:26:11  
8 common are copper, mercury, and TBT across all of the 03:26:14  
9 Commercial Basins? 03:26:18  
10 A. Yes. Yes. 03:26:19  
11 Q. And that those are similar to the NASSCO site? 03:26:20  
12 Let me rephrase. 03:26:27  
13 Those three CoCs are three of the five primary 03:26:28  
14 CoCs at NASSCO; correct? 03:26:30  
15 A. Yes. Yes. 03:26:33  
16 Q. Do you agree that the Commercial Basin boatyard 03:26:38  
17 sites involve similar site characteristics to NASSCO? 03:26:40  
18 A. I -- I mean, they are in -- discharges into the 03:26:44  
19 same water body, different parts of the bay. I don't -- 03:26:53  
20 I don't know if there's differences in the sediment 03:27:00  
21 particle sizes, et cetera, the distribution of 03:27:04  
22 contaminants might be different. But the same beneficial 03:27:07  
23 uses and receptors of concern would be -- they would be 03:27:11  
24 the same at both sites, same water body involved. 03:27:17  
25 Q. Same receptors, same general receptors? 03:27:24

1 A. Yes. 03:27:27

2 Q. And same potential for release of anti-fouling 03:27:28

3 paints; correct? 03:27:31

4 A. Yeah. Yes. 03:27:40

5 Q. Also subject to tidal action? 03:27:41

6 A. Yes. 03:27:44

7 Q. Subject to currents, subject to turbulence from 03:27:44

8 boats? 03:27:50

9 A. Yes. Although the size of the vessels is not 03:27:51

10 the same. It's also a part of the bay that's not as -- 03:27:54

11 as open to -- it's in kind of an enclosed part of the bay 03:27:59

12 over at Commercial Basin. It's not out in the main bay 03:28:04

13 channel. 03:28:09

14 Q. Do you agree that the Commercial Basin boatyard 03:28:12

15 sites involve similar water quality considerations as the 03:28:14

16 shipyard site? 03:28:17

17 A. Yes, I do. 03:28:18

18 Q. So that would be the same water body, same 03:28:20

19 factors we've been discussing? 03:28:22

20 A. Yes. 03:28:24

21 Q. Same receptors? 03:28:24

22 A. Right. 03:28:25

23 Q. Same beneficial uses? 03:28:26

24 A. Same water quality standards that would be 03:28:28

25 applicable. 03:28:29



1 Q. Also subject to influences from storm drains? 03:28:31  
2 A. Yes. 03:28:35  
3 Q. Based on our discussion of the Commercial Basin 03:28:39  
4 boatyard sites, should they be considered a similar site 03:28:44  
5 to NASSCO for purposes of the analysis under 03:28:50  
6 Resolution 92-49, paragraph 9? 03:28:53  
7 MR. CARRIGAN: Calls for a legal conclusion. 03:28:56  
8 THE WITNESS: Yeah. There's a basis for -- for 03:28:57  
9 looking at what was done at those sites. They're not as 03:29:06  
10 similar as Campbell was to the sites. But yes, 03:29:09  
11 there's -- there's elements of the issues we've been 03:29:14  
12 discussing that could be relevant to the shipyards. 03:29:19  
13 BY MR. RICHARDSON: 03:29:24  
14 Q. Let's turn to the Paco Terminals site. If I 03:29:25  
15 could introduce this as 1232. 03:29:30  
16 (Exhibit 1232 was marked.) 03:29:32  
17 BY MR. RICHARDSON: 03:29:52  
18 Q. Mr. Barker, I handed you a copy of Addendum 1 to 03:29:52  
19 cleanup and abatement order for the Paco Terminals site; 03:29:55  
20 do you see that? 03:29:59  
21 A. Addendum 1, yes, I do. 03:30:00  
22 Q. Are you familiar with this document? 03:30:02  
23 A. I recall the document. It's been many years 03:30:08  
24 since I've looked at it. Yes. 03:30:11  
25 Q. But you worked on the site; correct? 03:30:13

1 A. That is correct. 03:30:15

2 Q. This is one of the sites listed in Exhibit A to 03:30:15

3 Exhibit 1210; correct? 03:30:17

4 A. Yes, it is. 03:30:19

5 Q. Do you agree that the Paco Terminals site 03:30:26

6 involved analogous discharges to the shipyard site? 03:30:28

7 A. No, no. It -- there was a chemical that was the 03:30:39

8 same, copper, at the Paco Terminals site. It was a 03:30:50

9 copper ore that was being spilled into the bay, yeah. 03:30:55

10 But it's -- it was a different type of waste than what 03:31:01

11 would be down at a shipyard. 03:31:05

12 Q. And what type of ore was used at the 03:31:11

13 Paco Terminals site? 03:31:15

14 A. I -- I recall it had a name for it called 03:31:17

15 chalcopyrite, which was kind of rock copper ore, kind of 03:31:21

16 a -- a very water -- if I recall this right, water 03:31:29

17 insoluble form of copper. 03:31:37

18 Q. Okay. Let's look at Exhibit 1219. 03:31:54

19 A. 1219. 03:31:58

20 Q. Which is the cleanup and abatement order for 03:31:59

21 Paco Terminals. 03:32:01

22 A. Okay. 03:32:03

23 Q. I'm looking at Bates number page 386. 03:32:12

24 A. Okay. 03:32:15

25 Q. Do you see that? 03:32:15

1 A. Just -- we're getting it right now. 03:32:18  
2 Q. Okay. 03:32:19  
3 MR. CARRIGAN: I've shuffled these too many 03:32:30  
4 times today already. Maybe it's getting late in the day. 03:32:32  
5 BY MR. RICHARDSON: 03:32:38  
6 Q. If you could turn to page 386 Bates number. 03:32:39  
7 A. 386. Okay. 03:32:42  
8 Q. Paragraph 2. 03:32:45  
9 A. Paragraph 2. I -- I see my memory was correct. 03:32:46  
10 It's chalcopyrite. 03:32:53  
11 Q. That's impressive. What is chalcopyrite? 03:32:55  
12 A. Cupriferous sulfide ore. 03:32:59  
13 Q. Okay. So a type of copper ore? 03:33:02  
14 A. Yes. Yes, it is. 03:33:04  
15 Q. Do you agree that the copper found at NASSCO in 03:33:08  
16 the sediment was also associated with the minimal -- 03:33:11  
17 mineral chalcopyrite, was found to be exclusively 03:33:15  
18 associated with the mineral, both mineral ores are 03:33:22  
19 respective metals and minerals themselves were associated 03:33:25  
20 with particles of smelter slag in the sediment. And I'll 03:33:29  
21 refer you to Master Exhibit 4A. 03:33:33  
22 So in shorthand, isn't it also chalcopyrite the 03:33:42  
23 same copper that was found at Paco Terminals that's found 03:33:47  
24 at the shipyard site? 03:33:50  
25 A. I don't -- I don't know that to be the case. 03:33:51

1 The -- at a shipyard there's different types of waste 03:34:00  
2 products that could have copper in them. One would be 03:34:10  
3 vessel hull bottom paints which have a very -- a type of 03:34:13  
4 copper in them that is a very bioavailable form that is 03:34:22  
5 actually designed to kill marine organisms and keep them 03:34:28  
6 growing from the bottom of a hull, whereas the 03:34:36  
7 chalcopryrite ore at Paco wasn't that type of product. 03:34:41  
8 Now, there may be some forms of copper at a shipyard that 03:34:46  
9 uses the chalcopryrite form of copper. I don't know. 03:34:51  
10 Q. So you don't recall whether that specific issue 03:35:03  
11 was studied during the 2001/2003 shipyard site 03:35:07  
12 investigation? 03:35:14  
13 MR. CARRIGAN: Vague. 03:35:14  
14 THE WITNESS: I -- it -- it may have -- there 03:35:15  
15 may have been some information in the Exponent report on 03:35:20  
16 that. I just don't recall it. 03:35:23  
17 BY MR. RICHARDSON: 03:35:25  
18 Q. Okay. So if Exponent did study it and found 03:35:25  
19 that the predominant copper at the site is 03:35:28  
20 chalcopryrite -- 03:35:31  
21 A. Yeah. 03:35:31  
22 Q. -- then you would agree that the contaminants 03:35:33  
23 are the same for -- or similar for the Paco Terminals 03:35:35  
24 site and NASSCO? 03:35:38  
25 A. Yeah. It -- yeah. It -- yeah. That would 03:35:39

1 certainly be a basis for that. 03:35:40

2 Q. Okay. And Paco Terminals is roughly a couple 03:35:43

3 miles from the shipyard site; does that sound about 03:35:47

4 right? 03:35:51

5 A. Yes, it is. 03:35:53

6 Q. And the Paco Terminals had storm drain outfalls 03:35:55

7 located in its area; correct? 03:35:58

8 A. The Paco site, yeah, there were storm drains in 03:36:02

9 the area, yes. 03:36:05

10 Q. Similar to the NASSCO site has storm drains in 03:36:07

11 its area? 03:36:10

12 A. Yes. 03:36:11

13 Q. Do you agree that Paco Terminals site involves 03:36:13

14 similar water quality considerations as the NASSCO site? 03:36:16

15 A. Yes, the same water body is involved, same 03:36:21

16 beneficial uses. 03:36:24

17 Q. Assuming that the predominant form of copper at 03:36:30

18 both sites is chalcopyrite, and based on the other 03:36:35

19 discussions we've had concerning the two sites, would you 03:36:39

20 agree the Paco Terminals site should be considered as an 03:36:41

21 analogous site to NASSCO for purposes of paragraph 9 of 03:36:45

22 Resolution 92-49. 03:36:49

23 MR. CARRIGAN: Calls for a legal conclusion. 03:36:52

24 THE WITNESS: Let me -- let me get the 03:36:58

25 resolution in front of me again to examine that. 03:36:59

1 MR. CARRIGAN: It's Exhibit 1208. 03:37:11  
2 THE WITNESS: It's possible I have it here. 03:37:17  
3 MR. CARRIGAN: Should be one with a tab on it. 03:37:20  
4 THE WITNESS: Okay. It's not this one. 03:37:22  
5 MR. CARRIGAN: There it is. 03:37:47  
6 THE WITNESS: Okay. Thank you. 03:37:49  
7 Yeah. I'm just noting that paragraph 9 of 03:37:59  
8 Resolution 92-49 indicates prescribed cleanup levels 03:38:03  
9 which are consistent with appropriate levels set by the 03:38:08  
10 board at analogous sites. One thing I would like to 03:38:14  
11 point out is that the science of deriving and prescribing 03:38:18  
12 cleanup levels for marine sediments is an evolving 03:38:23  
13 science. 03:38:30  
14 For instance, the considerations in the cleanup 03:38:31  
15 levels at the Commercial Basin boatyards and at 03:38:35  
16 Paco Terminal, the methodologies used were not as 03:38:39  
17 sophisticated as the tools we've used in -- in the NASSCO 03:38:45  
18 study. And the scientific basis for those levels is not 03:38:49  
19 as firm as it is for the NASSCO study. 03:38:55  
20 So it's a little simplistic to go to a site, for 03:38:58  
21 example, where the cleanup level was set 15 years ago, 03:39:06  
22 and even though it's an analogous site, and use that as a 03:39:12  
23 basis for dictating what would be an appropriate level 03:39:16  
24 at, say, the NASSCO site. 03:39:22  
25 Q. But you would agree that 92-49, paragraph 9, 03:39:25

1 requires you to look at the other sites -- 03:39:30

2 A. Yes. 03:39:32

3 Q. -- for similarities; correct? 03:39:32

4 A. Yes. 03:39:34

5 MR. CARRIGAN: Calls for a legal conclusion. 03:39:34

6 THE WITNESS: Okay. 03:39:36

7 BY MR. RICHARDSON: 03:39:36

8 Q. I'd like to introduce this as 1233. 03:39:46

9 (Exhibit 1233 was marked.) 03:39:48

10 BY MR. RICHARDSON: 03:39:58

11 Q. I'm going to give you a moment to look at this 03:39:58

12 document. 03:40:00

13 A. Okay. All right. 03:40:01

14 Q. I handed you the staff report for the cleanup 03:40:07

15 and abatement order for the BF Goodrich site. 03:40:09

16 A. Yes. 03:40:15

17 Q. Dated March 26, 1998. Do you see that? 03:40:16

18 A. Yes, I do. 03:40:19

19 Q. Are you familiar with this report? 03:40:20

20 A. This report, no. No, I'm not. It was done -- 03:40:24

21 the work done on this site was in a different unit in the 03:40:29

22 office than what I was involved with. 03:40:33

23 Q. So this report was not developed under your 03:40:35

24 supervision? 03:40:37

25 A. That's correct. 03:40:37

1 Q. Are you generally familiar with this site? 03:40:40  
2 A. I -- I know of the site. I've done inspections 03:40:42  
3 over the years there. But I'm not familiar with the 03:40:47  
4 details of the cleanup conducted there. 03:40:49  
5 Q. Do you recall that this is an upland tidal marsh 03:40:57  
6 site? 03:41:00  
7 A. Yes, I do know that. 03:41:00  
8 Q. Do you recall that this site was bounded on 03:41:04  
9 three sides by sensitive riparian uses including a 03:41:07  
10 national wildlife refuge? 03:41:13  
11 A. I -- I recall that they were in the vicinity, 03:41:16  
12 yes. 03:41:18  
13 Q. So do you believe this site, the BF Goodrich 03:41:20  
14 site to have similar site characteristics as the NASSCO 03:41:24  
15 site? 03:41:30  
16 A. I don't -- I can't offer an opinion on it 03:41:31  
17 really. I -- I haven't read this report or -- and I 03:41:34  
18 haven't done detailed -- any work on the board's behalf 03:41:40  
19 at that site. 03:41:45  
20 Q. Okay. Well, let's -- as the person most 03:41:46  
21 knowledgeable on the issue of sediment sites -- 03:41:49  
22 A. Okay. 03:41:50  
23 Q. -- in San Diego Bay, I have a few questions for 03:41:51  
24 you. 03:41:52  
25 A. All right. 03:41:53



1 Q. And maybe we can together look at the staff 03:41:53  
2 report and help answer some questions. 03:41:55  
3 A. Okay. All right. 03:41:57  
4 Q. First, would you agree that because this was in 03:41:58  
5 a national wildlife refuge area that that is dissimilar 03:42:00  
6 to the NASSCO area, not -- not the same as the NASSCO 03:42:07  
7 site? 03:42:12  
8 A. Yes. 03:42:12  
9 Q. Actually, there may be an easier way to do this. 03:42:18  
10 Let's look at this exhibit. I'm going to introduce this 03:42:22  
11 as 1234. 03:42:30  
12 (Exhibit 1234 was marked.) 03:42:31  
13 BY MR. RICHARDSON: 03:42:53  
14 Q. Mr. Barker, I'm handing you a set of slides that 03:42:54  
15 appear to be prepared by Pete Peuron of the Slick (ph) 03:43:02  
16 Program of the San Diego Regional Board. 03:43:07  
17 A. Okay. 03:43:09  
18 Q. Do you see that? 03:43:10  
19 A. Yes, I do. 03:43:11  
20 Q. These numbers are not paginated, so I apologize. 03:43:17  
21 A few pages in, maybe five or six pages in, there's a 03:43:29  
22 slide that starts "big differences." 03:43:31  
23 A. Big differences, okay. Got it. 03:43:39  
24 Q. So this slide says, "There are big differences 03:43:43  
25 between this site and other sediment sites." 03:43:46



1 3:48 p.m. 03:48:51  
2 \*\*\* 03:48:52  
3 EXAMINATION 03:48:52  
4 BY MS. EVANS: 03:48:53  
5 Q. Good afternoon, Mr. Barker, my name is 03:48:53  
6 Sarah Evans, as I indicated off the record. Our office 03:48:55  
7 represents Star & Crescent Boat Company, along with 03:48:57  
8 Suzanne Varco who has been switching in and out with me 03:49:00  
9 here. We're going to switch gears entirely and talk 03:49:05  
10 about issues related just to our client, Star & Crescent 03:49:06  
11 Boat Company. 03:49:08  
12 A. All right. 03:49:10  
13 Q. First, have you reviewed any documents related 03:49:10  
14 to the corporate history of San Diego Marine Construction 03:49:12  
15 Company? 03:49:15  
16 A. Yes, I have. Documents that are in the 03:49:16  
17 administrative record and some supplementary documents 03:49:21  
18 that have been added. Also, the sections of the DTR that 03:49:26  
19 address that, yes. 03:49:33  
20 Q. So all the documents related to San Diego Marine 03:49:34  
21 Construction Company you reviewed are either in the 03:49:37  
22 administrative record, the supplemental record, or in 03:49:39  
23 Exhibits 1 and 2. 03:49:41  
24 A. That's correct, yes. 03:49:43  
25 Q. How about documents relating to the corporate 03:49:44

1 history of Star & Crescent Boat Company as a division of 03:49:46  
2 the San Diego Marine Construction Company? 03:49:50  
3 A. As a division. 03:49:54  
4 MR. CARRIGAN: Assumes facts not in evidence. 03:49:55  
5 Go ahead. 03:49:56  
6 THE WITNESS: I -- I've reviewed the findings 03:49:58  
7 and conclusions in the DTR. I haven't looked at all of 03:50:05  
8 the documents myself, personally. 03:50:11  
9 BY MS. EVANS: 03:50:13  
10 Q. Which ones have you personally looked at on that 03:50:14  
11 topic? 03:50:17  
12 A. Okay. The ones that were referenced in the 03:50:18  
13 responses to the interrogatories, if I'm phrasing that 03:50:28  
14 correctly. 03:50:31  
15 Q. Any others? 03:50:33  
16 A. No. 03:50:34  
17 Q. Okay. Have you looked at any additional 03:50:34  
18 documents related to Star & Crescent Boat Company since 03:50:39  
19 completing the discovery responses? 03:50:42  
20 A. No, I have not. 03:50:45  
21 Q. Do you have plans to do so? 03:50:46  
22 A. I -- yes, I do have plans to -- to do that, yes. 03:50:48  
23 Q. What types of plans do you have on that? 03:50:52  
24 A. Types of plans to look at documents. 03:50:55  
25 Q. Why do you intend to look at additional 03:50:57

1 documents? 03:50:59

2 A. Just I have a crushing workload at the office. 03:51:00

3 I'm not always able to look at everything at the same 03:51:03

4 time. And -- but I eventually catch up with events. 03:51:09

5 Yeah. 03:51:13

6 Q. But nothing specific, no specific documents that 03:51:14

7 you haven't yet gotten a chance to review, but that you 03:51:17

8 intend to review related to Star & Crescent Boat Company? 03:51:20

9 A. That's correct. 03:51:23

10 Q. Who provided you the documents that you did 03:51:24

11 review which are in the administrative records or in 03:51:27

12 Exhibits 1 and 2? 03:51:30

13 A. The ones that are in the administrative record 03:51:32

14 were -- were in the Regional Board files. And I reviewed 03:51:35

15 them as those documents were scanned. The other 03:51:43

16 documents, any documents that were attached to our 03:51:51

17 responses to the interrogatories were -- would have -- I 03:51:55

18 would have seen those. 03:52:01

19 Q. How about for Star & Crescent Investment 03:52:03

20 Company; have you seen any -- or have you reviewed any 03:52:05

21 documents related to its corporate history? 03:52:08

22 A. I don't believe so. 03:52:11

23 Q. Have you ever seen the Star & Crescent Boat 03:52:14

24 Company articles of incorporation from 1976? 03:52:16

25 A. I -- I don't recall seeing that. 03:52:20

1 Q. How about any minutes of meetings for 03:52:22  
2 Star & Crescent Boat Company? 03:52:24  
3 A. I -- I don't recall that. 03:52:26  
4 Q. How about any offers between Star & Crescent 03:52:27  
5 Investment Company and Star & Crescent Boat Company? 03:52:30  
6 A. Also, I don't recall that. 03:52:35  
7 Q. So you don't recall reviewing any of those three 03:52:36  
8 types of documents in preparing any -- Exhibits 1 or 2? 03:52:40  
9 A. No. I don't recall that, no. 03:52:45  
10 Q. And if we can turn to Exhibit 1 which is the 03:52:48  
11 tentative order. 03:52:51  
12 A. Okay. 03:52:52  
13 Q. If you'd go to page 2. 03:52:53  
14 A. Exhibit 2, okay. 03:52:58  
15 Q. In that first paragraph, it indicates that 03:53:03  
16 Star & Crescent and other discharging parties "caused or 03:53:07  
17 permitted discharge of waste to Shipyard Sediment Site." 03:53:12  
18 A. Right. 03:53:15  
19 Q. Do you know who authored that statement as it 03:53:16  
20 relates to Star & Crescent? 03:53:18  
21 A. As it relates to Star & Crescent, legal -- I 03:53:21  
22 guess legal counsel had investigated the change in 03:53:33  
23 responsible parties that has occurred at the San Diego 03:53:47  
24 Marine construction site, which is currently referred to 03:53:55  
25 as the BAE site, that have occurred over the years. And 03:53:59

1 based upon advice from counsel, after they reviewed the 03:54:02  
2 various documents, that was added there, yeah. 03:54:08

3 Q. Do you have any understanding as to what the 03:54:12  
4 basis of that statement is other than what legal counsel 03:54:16  
5 has told you? 03:54:21

6 A. Just the statements that support that in the 03:54:22  
7 DTR, I have some familiar -- familiarity with that, that 03:54:27  
8 there was a -- a successor in interest covering the years 03:54:31  
9 from, I believe it was 1914 to 1972. 03:54:37

10 Q. When you say that, what do you mean by -- by 03:54:44  
11 your familiarity with that successor in interest during 03:54:47  
12 that time frame? 03:54:50

13 A. Just that I have reviewed the statements in the 03:54:51  
14 DTR supporting this, the facts that are in the DTR. And 03:54:56  
15 that's it. 03:55:02

16 Q. Other than the statements in the DTR that 03:55:03  
17 support that, have you reviewed any other documents 03:55:04  
18 related to that statement about the successor in interest 03:55:07  
19 liability of Star & Crescent? 03:55:10

20 A. No, I have not, no. 03:55:12

21 Q. So you haven't reviewed any of the underlying 03:55:13  
22 documents? 03:55:15

23 A. That's correct. 03:55:15

24 Q. So other than the statements in the DTR, you 03:55:18  
25 don't know of any documents that support that statement 03:55:21

1 in the tentative order that Star & Crescent Boat Company 03:55:25  
2 caused. 03:55:28

3 MR. CARRIGAN: Asked and answered. Go ahead. 03:55:29

4 THE WITNESS: I -- I would just refer to 03:55:31  
5 whatever responses we provided in the response to the 03:55:34  
6 interrogatories on these issues. 03:55:39

7 BY MS. EVANS: 03:55:41

8 Q. Nothing else? 03:55:41

9 A. That's correct, from myself, yes. 03:55:43

10 Q. Do you know of any witnesses who have 03:55:47  
11 information about the statement that Star & Crescent 03:55:50  
12 caused or permitted discharge of waste to the 03:55:52  
13 Shipyard Sediment Site? 03:55:55

14 A. There are witnesses that have inspected the 03:56:03  
15 Southwest Marine site and conducted inspections there 03:56:12  
16 between the years of -- that I'm aware of between 1970 -- 03:56:18  
17 the early 1970s that would have covered the period that 03:56:27  
18 the DTR discusses that -- 03:56:37

19 Q. Star & Crescent? 03:56:43

20 A. -- Star & Crescent had responsibility for the 03:56:44  
21 site. 03:56:48

22 Q. And I think my question is a little bit more 03:56:54  
23 narrow. 03:56:56

24 Do those witnesses -- do you understand that 03:56:57  
25 those witnesses have information that it was Star & 03:57:00



1 Crescent Boat Company that did those discharges? 03:57:02

2 A. No, I do not know. 03:57:04

3 Q. Just they know about discharges that occurred? 03:57:05

4 A. Yes, that's correct. 03:57:08

5 Q. But not who was responsible for them? 03:57:09

6 A. Right. 03:57:11

7 Q. Do you know of any witnesses who have any 03:57:11

8 information about Star & Crescent Boat Company's 03:57:15

9 responsibility for those discharges referred to in the 03:57:18

10 tentative order? 03:57:21

11 A. I -- I know that -- that the -- the lands were 03:57:22

12 leased from the Port District, and the Port District had 03:57:31

13 knowledge about who the -- the leases were issued to. So 03:57:34

14 that would be one group we would go to, to get that type 03:57:45

15 of information. 03:57:49

16 Q. Any other groups that you think might be 03:57:51

17 witnesses for that type of information? 03:57:53

18 A. I am not aware of any. 03:57:55

19 Q. I assume that your responses to those questions 03:58:01

20 would be the same as they relate to the information on 03:58:04

21 page 4 at paragraph 5 about Star & Crescent on Exhibit 1. 03:58:06

22 A. On page -- 03:58:10

23 Q. Four? 03:58:12

24 A. Of this cleanup order? 03:58:13

25 Q. Yes. 03:58:14

1 A. Okay. Yes. The same type of -- 03:58:15

2 Q. As far as -- I should -- let me clarify that. 03:58:24

3 I assume your -- the basis for the statement 03:58:26

4 there on page 4 that Star & Crescent caused or permitted 03:58:30

5 the discharge of waste to be deposited where they were 03:58:35

6 discharged into San Diego Bay were the ones we've already 03:58:38

7 discussed? 03:58:40

8 A. Yes. 03:58:41

9 Q. And do you know who authored that statement on 03:58:43

10 page 4? 03:58:46

11 A. On page 4? 03:58:48

12 Q. Yes. 03:58:49

13 A. This finding was constructed with the advice of 03:58:52

14 legal counsel. 03:58:56

15 Q. Do you know who authored it? Was it legal 03:58:59

16 counsel? 03:59:01

17 A. I think it was a collaboration between legal 03:59:03

18 counsel and the technical staff. 03:59:05

19 Q. Were you involved in that collaboration? 03:59:08

20 A. Peripherally, yes. 03:59:12

21 Q. When you say "peripherally," what was your 03:59:13

22 involvement? 03:59:15

23 A. I'm kind of the supervisor of the Cleanup Team. 03:59:15

24 And so I had awareness that such a finding was being 03:59:19

25 developed and the basis for it. 03:59:22

1 Q. And you're -- the basis for it, we've already 03:59:25  
2 talked about, is the information that was in the 03:59:27  
3 supplemental -- or I'm sorry -- in the administrative -- 03:59:29  
4 A. Record. 03:59:33  
5 Q. -- record. 03:59:33  
6 A. And then the text that's written in the DTR 03:59:35  
7 and -- and -- yes, basically. 03:59:39  
8 Q. Okay. 03:59:43  
9 Later in that same paragraph on page 4, it says 03:59:44  
10 that, "Star & Crescent Investment Company, formerly 03:59:47  
11 San Diego Marine Construction Company, transferred all 03:59:52  
12 assets and liability to Star & Crescent Boat Company." 03:59:55  
13 Do you see that? 03:59:58  
14 A. Okay. We're in finding -- 04:00:00  
15 Q. Five. 04:00:02  
16 A. -- five. 04:00:03  
17 Q. Near the bottom? 04:00:04  
18 A. Near the bottom. 04:00:05  
19 Q. That's "Star & Crescent Investment Company 04:00:10  
20 (formerly San Diego Marine Construction Company)" -- 04:00:15  
21 A. Okay. 04:00:16  
22 Q. -- "transferred all of its assets and 04:00:18  
23 liabilities to Star & Crescent." 04:00:20  
24 A. Right. Yes. 04:00:22  
25 Q. Who drafted that statement? 04:00:22



1 A. I'm not aware of any, no. 04:01:34

2 Q. Other than the alleged transfer of all of 04:01:35

3 Star & Crescent Investment Company's assets and 04:01:37

4 liabilities, are you aware of any other basis of 04:01:40

5 liability for Star & Crescent Boat Company here as a 04:01:42

6 discharging party? 04:01:47

7 A. I -- there could be, but I'm -- I'm not aware of 04:01:48

8 it. 04:01:51

9 Q. Were you involved in the decision to name Star & 04:01:52

10 Crescent as a responsible party in the tentative order? 04:01:53

11 A. I was part of that decision process, yes. 04:01:57

12 Q. When you say you were part of it, how -- what 04:02:01

13 was your involvement? 04:02:03

14 A. Just -- it was -- some of our decision making 04:02:04

15 were decisions made by me. Others were kind of 04:02:08

16 consensus-based decisions that we all looked at a set of 04:02:11

17 facts and jointly decided. 04:02:16

18 Q. And how would you classify this decision to name 04:02:18

19 Star & Crescent Boat Company? 04:02:21

20 A. This was kind of a collaboration decision based 04:02:23

21 heavily upon advice from legal counsel. 04:02:27

22 Q. And was it based upon anything else? 04:02:29

23 A. No. 04:02:31

24 Q. Who was involved in the collaborative decision? 04:02:32

25 A. Well, it would have been myself, other 04:02:37

1 Cleanup Team members, which would be Julie Chan, 04:02:40  
2 Craig Carlisle, our legal counsel, Mr. Carrigan. 04:02:46  
3 Q. Just the three? 04:02:51  
4 A. Just who? 04:02:52  
5 Q. Just the three of you? 04:02:53  
6 A. Just the three -- 04:02:55  
7 MR. CARRIGAN: That's four already. 04:02:58  
8 MS. EVANS: Oh, I'm sorry. 04:02:58  
9 THE WITNESS: That's four. 04:02:59  
10 BY MS. EVANS: 04:02:59  
11 Q. Just the four of you then? 04:03:00  
12 A. I would say those are the primary people 04:03:01  
13 involved. 04:03:03  
14 Q. Do you know when that decision was made? 04:03:08  
15 A. It was made during the time leading up to it the 04:03:10  
16 late -- the issuance of the latest version of the DTR. 04:03:17  
17 But it had been under consideration for some time prior 04:03:26  
18 to that. 04:03:32  
19 Q. Do you know approximately how long? 04:03:33  
20 A. I can't hazard a guess. I began hearing about 04:03:37  
21 Star & Crescent during 2009, myself. 04:03:41  
22 Q. When you say you "began hearing" about -- 04:03:46  
23 A. Or excuse me. 2010. Yeah. 04:03:48  
24 Q. When you say you began hearing about Star & 04:03:50  
25 Crescent during 2010, do you mean Star & Crescent Boat 04:03:51

1 Company, Star & Crescent Investment Company, or do you 04:03:54  
2 know? 04:03:58  
3 A. I just remember hearing "Star & Crescent." 04:03:58  
4 Q. Have you seen any email or other written 04:04:03  
5 document where it was discussed about naming any Star & 04:04:06  
6 Crescent entity as a responsible party in the tentative 04:04:08  
7 order? 04:04:12  
8 MR. CARRIGAN: Objection to the extent it calls 04:04:13  
9 for advice of legal counsel. Then I'll instruct you not 04:04:14  
10 to answer if it does. 04:04:18  
11 THE WITNESS: Okay. 04:04:20  
12 MS. EVANS: Obviously. 04:04:20  
13 MR. CARRIGAN: Other than something from me. 04:04:21  
14 THE WITNESS: Okay. I don't -- I don't remember 04:04:23  
15 other sources of communication on Star & Crescent. 04:04:26  
16 BY MS. EVANS: 04:04:28  
17 Q. And were you involved in any factual 04:04:29  
18 investigation before Star & Crescent was named as far as 04:04:31  
19 naming Star & Crescent Boat Company here? 04:04:35  
20 A. Just -- no. I was not involved in it other than 04:04:39  
21 I would just get periodic updates from legal counsel on 04:04:45  
22 it. 04:04:49  
23 Q. And other than the -- the documents we talked 04:04:52  
24 about as being in the administrative record, are you 04:04:54  
25 aware of any other written documentation that supports 04:04:56

1 naming Star & Crescent Boat Company as a responsible 04:04:59  
2 party? 04:05:02  
3 A. Other than documents in the administrative 04:05:02  
4 record as it was supplemented, I am not aware. 04:05:05  
5 Q. Thank you. I don't have any other questions. 04:05:09  
6 A. Well, thank you. 04:05:11  
7 MR. CARRIGAN: Let's go off the record. 04:05:15  
8 THE VIDEOGRAPHER: Off the record. Time is 04:05:16  
9 4:05 p.m. 04:05:17  
10 (A recess was taken.) 04:05:36  
11 THE VIDEOGRAPHER: Back on the record time is 04:06:11  
12 4:06 p.m. 04:06:12  
13 \*\*\* 04:06:12  
14 EXAMINATION 04:06:12  
15 BY MS. REYNA: 04:06:14  
16 Q. Good afternoon, Mr. Barker. My name is 04:06:14  
17 Kristin Reyna, and I'm one of the attorneys who 04:06:16  
18 represents the City of San Diego in this case. 04:06:18  
19 A. Good -- good afternoon. 04:06:21  
20 Q. I have hopefully just a -- just a few questions 04:06:22  
21 for you this afternoon. The first category that I'd like 04:06:24  
22 to ask you a few questions about is the designation of 04:06:28  
23 the City as a responsible party based on its trusteeship 04:06:32  
24 of the site. 04:06:35  
25 A. Okay. 04:06:36



1 Q. Did you have any involvement in the formulation 04:06:38  
2 or drafting of the allegations naming the City as a 04:06:40  
3 responsible party based on its past trusteeship of the 04:06:44  
4 site? 04:06:48  
5 A. Limited involvement on that aspect. 04:06:51  
6 Q. Can you describe the involvement? 04:06:55  
7 A. Just being -- well, first of all, could I turn 04:06:57  
8 to the finding on that? Which is -- excuse me, the City. 04:07:03  
9 Q. If you'd like to refer to the -- the tentative 04:07:13  
10 cleanup and abatement order or the Draft Technical 04:07:14  
11 Report, feel free. 04:07:18  
12 MR. CARRIGAN: Finding 4. 04:07:21  
13 THE WITNESS: Okay. 04:07:21  
14 MR. CARRIGAN: Relates to the City. 04:07:21  
15 THE WITNESS: Okay. Let me just take a couple 04:07:22  
16 of minutes to review. Okay. All right. Yes. On that 04:07:24  
17 aspect of the finding, I was aware of -- that that factor 04:07:34  
18 was being introduced into the finding. I was not in a -- 04:07:42  
19 so I was just aware of it. And we were -- this was 04:07:48  
20 another situation where we were looking to the advice of 04:07:57  
21 legal counsel in evaluating that consideration. 04:08:03  
22 BY MS. REYNA: 04:08:07  
23 Q. Aside from legal counsel, do you know if there 04:08:10  
24 was anyone else on the board staff who was involved in 04:08:12  
25 formulating or drafting the allegation against the City 04:08:15

1 regarding its past trusteeship of the site? 04:08:19

2 A. Okay. So we're talking about the sentence from 04:08:23

3 the early 1900s through February 1963? 04:08:26

4 Q. (Nods head.) 04:08:30

5 A. Okay. When the relevant tidelands were 04:08:31

6 transferred from the City of San Diego to the 04:08:33

7 Port District. Yeah. 04:08:35

8 No. This was something, a statement we 04:08:37

9 introduced into the finding and -- and just upon advice 04:08:45

10 from legal counsel on the matter. 04:08:51

11 Q. So to your -- to your knowledge, neither you nor 04:08:54

12 anyone on the board staff performed any evaluation 04:08:56

13 yourselves of whether -- 04:09:01

14 A. No, I. 04:09:03

15 Q. -- to name the City in -- in that respect. 04:09:05

16 MR. CARRIGAN: Let her finish. 04:09:07

17 THE WITNESS: Okay. 04:09:08

18 MS. REYNA: -- in the tentative Cleanup & 04:09:09

19 Abatement Order. 04:09:09

20 MR. CARRIGAN: Misstates testimony. Now you can 04:09:10

21 answer. 04:09:11

22 THE WITNESS: Okay. No. I can speak for myself 04:09:12

23 that I was not heavily involved with that at all. 04:09:16

24 BY MS. REYNA: 04:09:19

25 Q. And I think as you said, you were really just 04:09:19

1 aware of it. 04:09:22

2 A. Yes, that's correct. 04:09:22

3 Q. Are you aware of what, if any, factors were 04:09:28

4 evaluated in naming the City in the tentative cleanup and 04:09:31

5 abatement order based on its past trusteeship of the 04:09:35

6 site? 04:09:39

7 A. Oh, based on its -- just -- just -- 04:09:40

8 Q. Just on the trusteeship. 04:09:42

9 A. Yeah. Just -- I'm aware of when the -- I was 04:09:44

10 aware of the logic behind that and that -- why the period 04:09:48

11 of -- through February 1963 was selected. And -- and -- 04:09:53

12 but that's -- that's about it. 04:10:00

13 Q. And what was the logic? 04:10:01

14 A. Well, I think it's based on the date when the 04:10:05

15 San Diego Port District was formed and took over 04:10:08

16 responsibility for the tidelands. 04:10:13

17 Q. But beyond that -- 04:10:19

18 A. Beyond that. 04:10:21

19 Q. -- you're not aware of any other evaluation. 04:10:21

20 A. Right. 04:10:24

21 Q. I'd like to switch gears now and ask you a few 04:10:30

22 questions relating to Chollas Creek. 04:10:33

23 A. All right. 04:10:36

24 Q. And if it helps, if you -- you can feel free to 04:10:36

25 reference the DTR -- 04:10:39

1	A.	Okay.	04:10:42
2	Q.	-- in Section 4 on that. I don't know	04:10:42
3		whether -- I only have a few questions. I don't know if	04:10:45
4		you'll need to or not.	04:10:48
5	A.	All right.	04:10:49
6	Q.	But please feel free to do that.	04:10:49
7	A.	Okay. Thank you.	04:10:52
8	Q.	Do you believe that Chollas Creek has	04:10:53
9		contributed to the contamination at the site beyond the	04:10:54
10		polygon NA22?	04:10:58
11	A.	Oh, let me --	04:11:03
12	Q.	Please.	04:11:04
13	MR. CARRIGAN:	Do you want to see the map?	04:11:05
14	THE WITNESS:	Yeah, I'd like to see the map.	04:11:07
15	MR. CARRIGAN:	I know I've got it. Let's see.	04:11:09
16	MS. REYNA:	I can tell you in the DTR it's on	04:11:15
17		page -- it starts on page 4-14 where it discusses the	04:11:17
18		Chollas Creek outflow plume in the city section. And	04:11:21
19		then I think there's a good map.	04:11:24
20	MR. CARRIGAN:	Probably be helpful.	04:11:30
21	MS. REYNA:	For the proposed remedial footprint.	04:11:31
22	THE WITNESS:	Okay. Okay.	04:11:34
23	MS. REYNA:	On page 33-2.	04:11:36
24	THE WITNESS:	Okay.	04:11:38
25	MS. REYNA:	Which kind of shows the whole site,	04:11:39

1 but at least you can see the polygons. 04:11:40

2 THE WITNESS: Yeah. 04:11:46

3 MR. CARRIGAN: There we go. 04:11:50

4 THE WITNESS: So NA22. Okay. I see that. And 04:11:50

5 could I ask for a repeat of the question? 04:11:56

6 BY MS. REYNA: 04:11:59

7 Q. Sure. 04:11:59

8 Do you believe that Chollas Creek has 04:12:00

9 contributed to the contamination at the site beyond the 04:12:02

10 polygon NA22? 04:12:05

11 A. Yes, I do believe that, yes; that in the DTR it 04:12:07

12 alleges that in Section 4.7.1.3. 04:12:14

13 Q. Are all of the bases for this opinion laid out 04:12:22

14 in Section 4.7.1.3 of the DTR? 04:12:25

15 A. Yes. Yes. 04:12:31

16 Q. You're not aware of any other additional bases 04:12:33

17 for that opinion? 04:12:35

18 A. There -- there may be some discussion of this 04:12:45

19 also in the finding on the United States Navy related to 04:12:50

20 the effect of discharges from that facility to the 04:12:57

21 Shipyard Sediment Site. That facility discharges into 04:13:01

22 Chollas Creek. 04:13:06

23 And as -- as far as Chollas Creek and its 04:13:07

24 influence on the Shipyard Sediment Site, I guess 04:13:14

25 primarily it's addressed in Section 4. But there's 04:13:16