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TRANSCRIPT OF PROCEEDINGS

NASA-JPL CERCLA RPM MEETING

June 17, 2004

4536 Hampton Road

La Canada Flintridge, California

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NASA-JPL CERCLA RPM MEETING

June 17, 2004

4536 Hampton Road

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1	APPEARANCES :	
2	NAME	AFFILIATION
3	KEITH FIELDS	BATTELLE
4	MARK RIPPERDA	US ENVIRONMENTAL PROTECTION AGENCY
5	CHUCK BURIL	JET PROPULSION LABORATORY
6	GARY TAKARA	PASADENA WATER & POWER
7	MOHAMMED ZAIDI	CALIFORNIA REGIONAL WATER QUALITY
8		CONTROL BOARD, LOS ANGELES
9	ALAN SORSHER	CALIFORNIA DEPARTMENT HEALTH SERVICES
10	MYRNA GUTIERREZ	NASA CONSULTANT
11	MERRILEE FELLOWS	NASA
12	STEVE SLATEN	NASA
13	MATTI VIGIL	BATTELLE
14	KAREN ARTEAGA	GEOSYNTEC CONSULTANTS
15	CATHY CHANG	PASADENA WATER & POWER
16	RICHARD COFFMAN	DEPARTMENT TOXIC SUBSTANCE CONTROL
17	LINDA THOMAS	RAYMOND BASIN & WATER MANAGEMENT
18	ROBERT HAYWARD	LINCOLN AVENUE WATER COMPANY
19	MICHAEL ISKAROUS	DEPARTMENT TOXIC SUBSTANCE CONTROL
20	JEFF O'KEEFE	CALIFORNIA DEPARTMENT HEALTH SERVICES
21	VERA MELNYK-VECCHIO	CALIFORNIA DEPARTMENT HEALTH SERVICES
22	JOSEPH E. CRISOLOGO	CALIFORNIA DEPARTMENT HEALTH SERVICES
23	JOHN SCHUMACHER	RUBIO CANYON LAND AND WATER
24	ASRAR FAHEEM	GEOFON, INC.
25	SREE AKKENAPALLY	GEOFON, INC.

1 APPEARANCES: (Cont'd)

2 NAME	AFFILIATION
3 ANTHONY FORD	GEOFON, INC.
4 ANN ASAVADIMOL	LINCOLN AVENUE WATER COMPANY
5 JACK HARMS	LINCOLN AVENUE WATER COMPANY
6 BRAD BOMAN	PASADENA WATER & POWER

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1 Thursday, June 17, 2004, La Canada, California

2 10:00 A.M.

3

4 MR. SLATEN: We got an agenda out, but a couple
5 things. Mark Ripperda is on his way from the airport, so
6 we want him to be here. There are some things that are
7 important for him to be here for.

8 MS. FELLOWS: That's fine.

9 MR. SLATEN: And also, Bob Hayward's coming later this
10 afternoon. So stuff that has to do with OU-3 and his
11 system, I'm pushing back a little bit on the agenda today.
12 It'll be after lunch. We don't have any lunch plans yet,
13 but -- so we'll be going out for lunch.

14 MS. VECCHIO: Steve --

15 MR. SLATEN: Yeah.

16 MS. VECCHIO: -- we have a request.

17 All three of us need to leave because there are
18 some things going on this afternoon.

19 MR. SLATEN: Okay.

20 MS. VECCHIO: So we were wondering if we could do the
21 OU stuff this morning.

22 MR. SLATEN: All right. So what time do you have --
23 are you going to be going before lunch?

24 UNIDENTIFIED SPEAKER: I would say 12:30 for Alan --

25 MS. VECCHIO: Yeah. I have to leave about 12:15.

1 MR. SLATEN: Okay. I don't know when Bob was going to
2 get here.

3 MS. FELLOWS: He said after lunch.

4 MR. SLATEN: He said after lunch. Okay. So let's
5 think about how to do it, then, so --

6 MS. FELLOWS: Is Ann here? Does she know?

7 MR. SLATEN: Ann just stepped out. Ann and --

8 MS. FELLOWS: You may want to speak to her, if she
9 knows if he's going to come or not.

10 MR. SLATEN: Okay. Because we could fill up -- we had
11 planned to fill up the morning with kind of the OU-2 update
12 stuff and kind of presentations from Gary and Tony about --
13 kind of about their systems, so --

14 MR. ZAIDI: Mark's here.

15 MR. SLATEN: Mark's here. Okay.

16 Hey, Mark.

17 MR. RIPPERDA: Hi.

18 MR. ZAIDI: I got a new man.

19 MR. RIPPERDA: All the way up there? I'll go in the
20 other way.

21 MR. SLATEN: Mark, that's pretty quick. Was your
22 airplane in early?

23 MR. RIPPERDA: No. I just sat right in the very front
24 seat so I could be first off the plane.

25 MS. FELLOWS: His limo was waiting and -

1 MR. RIPPERDA: Yeah. And NASA paid for the limo;
2 right?

3 MR. SLATEN: Yeah. Always.

4 All right. We were talking kind of about the
5 agenda, and we had heard that Bob wasn't going to be here
6 until this afternoon, so we talked about pushing off some
7 OU-3 stuff till this afternoon --

8 MS. FELLOWS: Well, that's what it was scheduled for
9 too.

10 MR. SLATEN: -- but the DHS people have to leave by
11 noon. So we got a little -- we may have to go ahead and do
12 stuff without Bob here, if he can't make it. I'll see --
13 call and see when he's going to be able to be here.

14 So why don't we just -- first, just get started
15 with some of the stuff that Bob doesn't have to be here
16 for.

17 I had asked -- we had asked Tony and Gary and
18 also -- did we ask Rubio Canyon to -- no? Okay. So just
19 Tony and Gary.

20 Just what we found over the last few weeks is
21 that when we talk to people about their systems and how
22 they work, it gives us a lot better understanding of the
23 interaction, the interconnection, you know, in this
24 sub-basin, we're kind of all in this together, you know.
25 And by understanding people's systems and how they operate,

1 we can better understand what the best way is to help fix
2 things and make things right. So I just thought it was a
3 good idea.

4 So who wants to start?

5 MR. FIELDS: Pardon me, Steve.

6 MR. SLATEN: Yeah.

7 MR. FIELDS: Before we get started, if we could maybe
8 go around the room --

9 MR. SLATEN: Oh, yeah. Good idea. Sorry.

10 MR. FIELDS: What we typically do is identify our
11 names, spell our last name for the court reporter, and
12 identify what organization you represent.

13 MR. SLATEN: Okay. Steve Slaten, NASA Remedial
14 Project Manager.

15 MS. FELLOWS: You have to spell your last name.

16 MR. SLATEN: Oh. S-l-a-t-e-n.

17 MS. FELLOWS: Did you want to introduce Matti?

18 MR. SLATEN: Oh, Matti is new help that we have in my
19 office, administrative help. So you maybe -- you know, get
20 used to her face and her name and --

21 MS. FELLOWS: And her e-mails.

22 MR. SLATEN: And her e-mails. I'm going to use her
23 however I can 'cause we're so shorthanded here. So she'll be
24 helping me out in any way she can.

25 MS. FELLOWS: You get to spell your last name.

1 MS. VIGIL: V, as in Victor, -i-g-i-l.

2 MS. GUTIERREZ: I'm Myrna Gutierrez, and I'm a
3 consultant to NASA on the multi-cultural outreach. Last
4 name is G-u-t-i-e-r-r-e-z.

5 MS. FELLOWS: Merrilee Fellows, F-e-l-l-o-w-s. I'm
6 the outreach manager for the ground water program.

7 MR. FIELDS: Keith Fields, F-i-e-l-d-s. I work for
8 Battelle as consultant to NASA.

9 MR. RIPPERDA: I'm Mark Ripperda, R-i-p-p-e-r-d-a.
10 I'm a remedial project manager from the EPA in
11 San Francisco.

12 MR. ZAIDI: Mohammed Zaidi, Z-a-i-d-i, California
13 Regional Water Quality Control Board, Los Angeles.

14 MR. RIPPERDA: Can all you back there hear us when
15 we're talking up here?

16 MR. SORSHER: Some more than others.

17 MR. RIPPERDA: With the fan on, we should all try to
18 talk louder.

19 MR. TAKARA: Gary Takara, T-a-k-a-r-a. I'm with the
20 Pasadena Water and Power.

21 MR. O'KEEFE: Jeff O'Keefe, O apostrophe K-e-e-f-e.
22 I'm with the California Department of Health Services, and
23 I'm a district engineer.

24 MR. SORSHER: Alan Sorsher, also with the California
25 Department of Health Services. And it's A-l-a-n

1 S-o-r-s-h-e-r. And I'm an engineer. I work for Jeff.

2 MR. FAHEEM: I'm Asrar Faheem, F-a-h-e-e-m. We are
3 working on the OU-2 vadose zone.

4 MR. AKKENAPALLY: And my name is Sree Akkenapally.
5 And let me spell my first name also, S-r-e-e. The last
6 name is spelled A-k-k-e-n-a-p-a-l-l-y. And I work as a
7 project engineer for GEOFON.

8 MR. FORD: My name is Tony Ford. I'm also with
9 GEOFON. The spelling of the name is F-o-r-d.

10 MS. ARTEAGA: I'm Karen Arteaga, A-r-t-e-a-g-a, with
11 GeoSyntec Consultants, and we are the consultant to the
12 City of Pasadena.

13 MS. CHANG: I'm Cathy Chang, C-h-a-n-g. I work for
14 Pasadena Water & Power, and I work for Gary.

15 MR. ISKAROUS: Michael Iskarous, I-s-k-a-r-o-u-s. I
16 work for State of California, EPA, remedial project
17 manager.

18 MR. COFFMAN: Richard Coffman, C-o-f-f- as in Frank,
19 -m-a-n. I'm a geologist with the DTSC.

20 MS. VECCHIO: Vera Vecchio, V-e-c-c-h-i-o, California
21 Department of Health Services, chief of the L.A. Regional
22 Board.

23 MR. CRISOLOGO: Joseph Crisologo, C-r-i-s-o-l-o-g-o,
24 Department of Health Services.

25 MR. SCHUMACHER: John Schumacher, S-c-h-u-m-a-c-h-e-r,

1 and I'm with Rubio Canyon Land and Water Association.

2 MS. THOMAS: Linda Thomas, T-h-o-m-a-s, Raymond Basin
3 and Water Management, whatever, Board.

4 MS. ASAVADIMOL: Ann Asavadimol, A-s-a-v-a-d-i-m-o-l,
5 Lincoln Avenue Water.

6 MR. HARMS: Jack Harms, Lincoln Avenue Water, last name
7 H-a-r-m-s.

8 MR. SLATEN: Okay. So maybe, first, on the agenda we
9 will have these kind of overviews. Tony's not in here yet.
10 So Gary--

11 MR. TAKARA: Sure.

12 MR. SLATEN: -- can you go?

13 MR. TAKARA: Sure.

14 You want me to go there and operate or -- I'll
15 just --

16 MR. FIELDS: If you want, I can click through for you.

17 MR. TAKARA: Sure. That will be good.

18 You have a pointer?

19 UNIDENTIFIED SPEAKER: I do.

20 MR. TAKARA: Oh, you do. Oh, great. That would be
21 great. Thank you.

22 Okay. All right. I wasn't sure exactly what
23 Steve wanted me to share with the group, so I just kind of
24 gave a general overview of our facilities as well as our
25 supply issues up in the Raymond Basin.

1 (Mr. Chuck Buri enters the room.)

2 MR. TAKARA: Okay. This first slide -- I hope
3 everyone can see this -- it shows basically the general
4 outline of the Raymond Basin. We also have three aquifers
5 to the Raymond Basin. We have the Monk Hill basin, the
6 Pasadena subarea, and the smallest of the three is the
7 Santa Anita subarea.

8 Each of these colors delineates the agency's
9 areas of operation. So for Pasadena, we operate in two of
10 the aquifers. We have the Monk Hill basin as well as the
11 Pasadena subarea, and that's this light blue area. We have
12 no operations -- well, we pump -- we operate no wells in
13 the Santa Anita subarea.

14 And just to give you an idea, here is the JPL
15 facilities.

16 Okay. Next slide, please.

17 Some general statistics. We have about 160
18 cus- -- well, I should say we serve about a population of
19 160,000 people. We have about 500 miles of mains. 39,000
20 service inter- -- 39,000 services. And our average
21 production runs somewhere between 35- to 40,000 acre feet
22 per year. At times, we went as high as, what, 42-, 43,000
23 acre feet.

24 This map shows our general water service area.
25 In the red area, it outlines the city boundaries, and in

1 the blue boundary, it shows what areas we serve. So, for
2 example, what I want to show here is that areas like here
3 (indicating), this area here (indicating), we actually
4 serve outside of the city boundaries. And that's because,
5 back in the early 1920s, late 1800s, the City of Pasadena,
6 we bought a lot of these smaller water agencies that serve
7 outside of the city boundaries, and so we end up inheriting
8 that responsibility, and we continue to serve in those
9 areas.

10 Next slide.

11 We have about 22 storage reservoirs. We have
12 110,000 -- no -- 110 million gallons capacity. On a hot
13 summer year, we would change over the reservoir about once
14 every day and a half. Typically, our turnover is about
15 three to six days.

16 We have 19 booster stations. We have 15
17 production wells, eight of which is currently on. The rest
18 is off due to primary perchlorate. We have five MET
19 connections; 27 interagency connections in which we can
20 both deliver and receive water. We have a surface
21 water treatment plant up in Monk Hill, but that went off
22 line in 1993. And we also have a VOC treatment plant in
23 the Monk Hill, and that's been off line due to
24 perchlorate back in 2002.

25 MR. FIELDS: Gary, I got a question.

1 MR. TAKARA: Sure.

2 MR. FIELDS: On the number of DWD connections, are
3 those directly through MWD, not through Foothill?

4 MR. TAKARA: That's correct. We are a member agency
5 of the MWD. We have about 1.2 to 1.3 percent rights, and
6 we have five connections through MET directly.

7 MR. FIELDS: Okay.

8 MR. TAKARA: We're not a member of Foothill.

9 MR. FIELDS: Are you going to talk about any of your
10 other interagency connections later?

11 MR. TAKARA: No. Is there something --

12 MR. FIELDS: I was just wondering if you had
13 connections with Lincoln Avenue, Rubio, Las Flores.

14 What are your interconnections in the Monk Hill
15 sub-basin?

16 MR. TAKARA: We do have interconnections with Lincoln.
17 I'm not sure about Rubio. I can't remember all the
18 interconnections and the agencies, but the majority of the
19 interconnections with Lincoln is to -- actually, to receive
20 water. Lincoln is up in a higher elevation so we don't
21 really have the ability to serve them any water. We would
22 have to literally run external boosters and push the water
23 off to Lincoln Avenue.

24 MR. BOMAN: That's the same with the other agencies
25 you mentioned. They're all above us.

1 MR. FIELDS: Okay.

2 MR. TAKARA: This is Brad Bowman, B-o-m-a-n. He's
3 with Pasadena Water and Power. He's our engineering
4 manager.

5 Do we have interconnections with Rubio,
6 Las Flores? We do?

7 MR. BOMAN: Yes.

8 MR. TAKARA: There you go. All right.

9 MR. FIELDS: You said most of those connections are
10 from them to you.

11 MR. TAKARA: Yeah. Because they're -- they serve in
12 our highest elevations.

13 MR. BOMAN: Yesterday, we go both ways.

14 MR. FIELDS: Okay.

15 MS. FELLOWS: Gary, I thought Phyllis said at the last
16 meeting that two of your other wells were back on line
17 again.

18 MR. TAKARA: Yeah. That's right.

19 MS. FELLOWS: There were nine off line before, and now
20 there are seven off line?

21 MR. TAKARA: Originally, there were nine, now there
22 are seven.

23 MS. VECCHIO: Which two went back on?

24 MR. TAKARA: Garfield and Villa.

25 MS. VECCHIO: Okay.

1 MS. FELLOWS: What are the perchlorate levels?

2 MR. BOMAN: They are 3.5 to 4. So they were right on the
3 edge. Now, luckily, we're blending that with the MWD water now
4 that the majority of that is State water project water. So we've
5 got a level of confidence there.

6 MS. VECCHIO: Okay.

7 MR. TAKARA: It's the magic word, "level of confidence."

8 Next slide.

9 Okay. Two of our water sources. We have -- as I
10 said, we're a member of the MWD, so we have -- we import
11 water from MWD, and we also have decreed ground water
12 rights, which consists of both ground water and surface
13 water rights. Our surface water rights are in the Arroyo
14 Seco and the Eaton Canyon areas.

15 Next slide.

16 MR. FIELDS: I'm sorry.

17 MR. TAKARA: No problem.

18 Out of the MWD, roughly 60 percent of our
19 imported water -- well, I should say 60 percent of our
20 water supply is MWD water, which consists of both Colorado
21 and a State water project.

22 In the last -- or I should say the past six
23 months, the perchlorate levels coming out of Colorado has
24 been somewhere between four to six parts per billion. That
25 sort of varies.

1 Historically, Colorado -- historically, MWD
2 delivered 70 to 80 percent of their water to Pasadena
3 consisting of Colorado River. But because of the
4 perchlorate and some mandatory cutbacks out of the
5 Colorado, that figure is now down to 30 to 50 percent. The
6 difference is made up by the State water project.

7 So this slide kind of just shows Hoover Dam, I
8 guess, Lake Mead --

9 MR. BOMAN: Yeah.

10 MR. TAKARA: -- and then I think this is Weymouth
11 treatment plant.

12 Next slide.

13 MS. VECCHIO: You might want to explain about the fact
14 that the Arroyo filtration plant is out of service due to
15 the fact that the filter does not comply and that Eaton
16 Canyon was taken out of service a lot longer because the
17 fact that there is a sewer line that actually goes over the
18 wash, and at one time, there was a sewer spill into the
19 Eaton Canyon water supply.

20 MR. TAKARA: This was below Lincoln?

21 MS. VECCHIO: Yes.

22 MR. TAKARA: Oh, okay. There you go. I learned
23 something new. Thanks.

24 MR. FIELDS: I have a question, Gary.

25 This MWD feeder line, which is, like, in

1 Pasadena, your five or six connections are to that main
2 feeder?

3 MR. TAKARA: How many feeders? Is there one or two?

4 MR. BOMAN: There's --

5 MR. TAKARA: -- off the feeder?

6 MR. BOMAN: Yeah. It's all the water is coming from
7 the same pipeline.

8 MR. FIELDS: I think I was here yesterday, and there
9 showed like a ten-foot, six-inch diameter.

10 MR. BOMAN: Yeah.

11 MR. TAKARA: Yes.

12 MR. FIELDS: So that same feeder line is where
13 Foothill is tapped in as well?

14 MR. BOMAN: Yes.

15 MR. FIELDS: Okay.

16 MR. TAKARA: Actually, I think it runs below the
17 Rose Bowl area; is that right?

18 MR. BOMAN: Down Mountain Avenue.

19 MR. TAKARA: Goes back up into our east side.

20 MR. FIELDS: Okay.

21 MR. TAKARA: Next slide.

22 MR. FIELDS: Do you know, is the reason why there now
23 is a lower percentage of Colorado River water because of
24 perchlorate?

25 MR. TAKARA: Yeah. That was part of the reason.

1 MS. VECCHIO: No, not quite.

2 MR. TAKARA: No?

3 MS. VECCHIO: No.

4 MR. BOMAN: I think it's just cutbacks on the
5 Colorado.

6 MS. VECCHIO: It's cutbacks on the Colorado River
7 supply. So they had to use more State project water. And
8 there is also an issue with THFs.

9 MR. BOMAN: State project.

10 MS. VECCHIO: State project water produces higher --

11 MR. BOMAN: So there's a balancing act.

12 MS. VECCHIO: And they've had to cut back on the
13 Colorado River supply. So that is mostly why they produced
14 the actual supply from the Colorado River supply, and a lot
15 more of it is going to San Diego. They've got to supply
16 water to San Diego also.

17 MR. FIELDS: Okay.

18 MR. TAKARA: Okay. Out of the Raymond Basin, we have
19 about -- we have -- each year, we have decreed rights of
20 12,807 acre feet of pumping rights. That represents 42
21 percent of all the ground water rights to the Raymond
22 Basin. In the Monk Hill, we have 4,464 acre feet of
23 rights, making up 60 percent of the Monk Hill rights.

24 And out of the subarea, we have additional 8,343
25 percent. We have no pumping rights out of the Santa Anita

1 subarea.

2 Okay. Again, here is the Raymond Basin. We have
3 the three sub aquifers; the Monk Hill, Pasadena subarea,
4 and the Santa Anita subarea. Just to give you some
5 bearings, here is JPL right here.

6 So up in the Monk Hill, we have -- or we operate
7 four wells. We have the Arroyo Well, the Well 52, we have
8 Ventura Well, and Windsor Well. Right here next to our
9 Ventura Well is the VOC treatment plants, and these are the
10 only four wells that we have up in the Monk Hill.

11 The remaining 11 wells that are active is in the
12 Pasadena subarea.

13 Keep in mind this legend is outdated. This is
14 back, what's that, January '04? Yes. Slightly outdated.
15 Sometimes we refer to these five wells here, the
16 Bangham, Copelin, Sunset, Garfield, and Villa as the
17 Sunset Reservoir wells. And the reason for that is we
18 manage those five wells into the Sunset Reservoir,
19 blending that with MET water. And the remaining -- what is
20 that? -- six wells or seven wells -- I can't remember the
21 numbers -- are all operating out of the east side.

22 We have Twombly and Wadsworth are the two newest
23 addition wells. That went on line about two, three years
24 ago. And we -- like I said, we have no wells in the
25 Santa Anita subarea.

1 Okay.

2 MR. FIELDS: Sheldon is shut down because --

3 MR. TAKARA: Sheldon, this -- the Sheldon Well and

4 Jourdan Well, we also have an additional well up in Eaton,

5 that's been inactive for -- I can't remember how long it's

6 been inactive.

7 MS. FELLOWS: And why is it inactive?

8 MR. TAKARA: Actually, Jourdan, well, we had an air

9 problem.

10 MR. BOMAN: Air problem.

11 MR. TAKARA: Eaton was -- it's a very small production

12 well. It's like 100 or 200 gallons per minute well, and

13 it's highly fluctuated by the Eaton Canyon string flow.

14 And Sheldon Well, which is this one here, I think

15 we have a misalignment on the shaft, and it's a very small

16 production well. And that's been out, I don't know how

17 many years.

18 Over 20 years, you think?

19 MR. BOMAN: Well, 15.

20 MR. TAKARA: Fifteen years?

21 MR. SORSHER: Gary, the southern border of the basin

22 there, is that basically along Huntington Drive?

23 MR. TAKARA: This here, yes, I think -- yeah, I

24 believe so.

25 Right?

1 MR. BOMAN: Right.

2 MS. FELLOWS: This is the California right here, and
3 this is Del Mar. So this would be --

4 MR. BOMAN: And Huntington Drive is just below the
5 Raymond fault there, that bottom line. That's how we get
6 the name Raymond Basin because of the Raymond fault.

7 If you've ever been to the Huntington Library,
8 and you can walk out and go down the hill, there is a hill
9 at Huntington Library where they have a little fountain
10 going down that. That's the Raymond fault.

11 MS. FELLOWS: Right up at the gazebo there?

12 MR. BOMAN: Yeah.

13 MS. VECCHIO: Did you guys lose production after you
14 brought those wells up to standards because they were the
15 shaft wells, and then you guys filled in the pitch shafts?
16 Did you lose production of the wells after that?

17 MR. BOMAN: Like our Sunset Well, you're talking
18 about?

19 MS. VECCHIO: Yeah. I'm talking about the Sheldon and
20 Jourdan.

21 MR. TAKARA: I don't know much about those wells.

22 MR. BOMAN: No. I don't think so. I don't think we
23 lost --

24 MS. VECCHIO: No?

25 MR. BOMAN: We might have lost a little production.

1 MS. VECCHIO: But not much.

2 MR. BOMAN: Not much.

3 MR. FIELDS: You know, Sheldon sometimes shows up on
4 your maps, and things like Atlanta, which is also -- well,
5 doesn't. Is there any -- I mean, is it just because it was
6 shut down later in the cycle in history?

7 MR. TAKARA: Oh, that -- I'm not sure exactly. I
8 mean, this map is actually part of the baseline study.
9 Right?

10 MR. BOMAN: Yes.

11 MR. TAKARA: Wasn't this done for baseline?
12 So it might have been for that specific reason it
13 showed up, and other times it doesn't.

14 MR. FIELDS: Okay.

15 MR. TAKARA: Okay. We have four wells in the
16 Monk Hill. Okay.
17 We have the Arroyo Well, and this chart here
18 shows the perchlorate trend going back to 1997. I believe
19 the first month is June? I can't read --

20 MS. FELLOWS: Yeah.

21 MR. TAKARA: Yeah, it's June 1997 when we first
22 detected perchlorate. And at the end of June, we shut it
23 off because the perchlorate levels were too high and we
24 couldn't blend it down. But we continued to monitor that
25 well, and it continued to rise up to about 160 up in

1 September of '97. And back in the action level, it was 18
2 parts per billion.

3 Next slide.

4 We have Well 52. These are the two wells that
5 NASA had proposed utilizing in their containment
6 treatments.

7 Next slide.

8 Ventura Well, located right here, is a
9 gas-operated well. It's next to our VOC treatment plants.
10 So we have our air stacks with our carbon filters.

11 Next slide.

12 I didn't have any pictures for the Windsor Well.
13 But this last chart here plots the perchlorate levels.
14 This is for Well 52. I think that ends in August 2002.

15 MS. FELLOWS: Yes.

16 MR. TAKARA: The light magenta, if I remember correct,
17 that was Ventura Well. The light green is Windsor Well.
18 And on the other chart you show the Arroyo, and the change
19 in action level from 18 to four parts per billion.

20 Okay. In the Pasadena subarea, we have 11 active
21 wells; 8 are currently on.

22 Back in January 2002, when the action level was
23 dropped from 18 to four parts per billion, five of these 11
24 wells were shut off. Those were the five Sunset Reservoir
25 Wells due to perchlorate.

1 When the action level was revised upward to 6
2 parts per billion, two of that five went back on line. So
3 currently we have eight wells in the subarea.

4 Okay. We also operate spreading in both the
5 Arroyo Seco and the Eaton Canyon.

6 Back in January 1974, the Raymond Basin permitted
7 agencies with surface water rights, giving them the option
8 that, in lieu of taking directly for distribution, we were
9 allowed to spread and recapture a percent of what we
10 recharged the ground water -- recharged the basin.

11 So in the Arroyo Seco Canyon, we have 25 cubic
12 feet of surface water rights.

13 Between fiscal years '93 and 2003, we ranged
14 somewhere as low as 501 acre feet to as high as 5600 acre
15 feet.

16 Now, keep in mind this is in addition to our
17 decreed ground water rights. So, for example, that 56,
18 that would have given us something like 10,000 acre feet
19 just on that one aquifer, in whatever year that was. It
20 was a very wet year, and as low as 501.

21 For example, this year, it's going to be a
22 really -- which has been a pretty dry winter, I project
23 we'll probably average only about 6-, 700 acre feet from
24 our spreading.

25 P.W.P. operates the entire Arroyo Seco spreading

1 grounds.

2 Prior to 1997, '98, L.A. County and P.W. had --
3 we operated the basins combined, and we took it over
4 completely in '97, '98. I can't remember the year.

5 This area is the Millard diversion structure
6 coming out of the Millard stream. So we will divert water
7 out of this stream consisting part of our water rights as
8 well as Lincoln Avenue.

9 Lincoln Avenue also has surface water rights in
10 Monk Hill. Because they are not able to divert for
11 spreading, we are doing that on their behalf. And so we're
12 taking the water through this Millard Canyon diversion
13 structure.

14 Out in the Eaton Canyon, out in the east side,
15 which is part of the Pasadena subarea, we have 8.9 cubic
16 feet of surface water rights.

17 Again, between '93 and 2003 we had somewhere
18 between 374 to 3500 acre feet. This is, again,
19 in addition to the 8,343 acre feet of ground water rights.

20 L.A. County operates that spreading basins. And
21 this is a picture of the Arroyo Seco spreading grounds.
22 Here's JPL in the background.

23 And if you look real carefully right here, you
24 can see the air strippers, the VOC air strippers.

25 MR. SLATEN: Arroyo Seco spreading grounds, you get -

1 you use them the most. Lincoln Avenue Water Company has
2 the right to use them as well.

3 MR. TAKARA: Uh-huh.

4 MR. SLATEN: And that's the only two water companies
5 that go into there.

6 MR. TAKARA: Yes, that's it. The only two.

7 MR. SLATEN: Okay. And does anybody own them? You
8 operate them, you maintain --

9 MR. TAKARA: We own the land

10 MR. SLATEN: You own the land.

11 MR. TAKARA: We own the land. County built it, I
12 think, back around 1950, 1949. They operated it, and we
13 helped them along the way also, and then we took over the
14 entire operation. So everything from the spreading grounds
15 to the land to the gates to the piping to the metering to
16 the labor is all Pasadena, including the water --

17 MR. SLATEN: Who pays for the cost?

18 MR. TAKARA: To operate it? Pasadena.

19 MS. VECCHIO: Do you lose rights -- surface
20 spreading -- not rights, but credits when it rains, when
21 it's too heavy a rainfall?

22 MR. TAKARA: Yeah. There is an issue of natural
23 flows. That's the reason why we don't get 100 percent of
24 the water rights that we spread. Because a portion thereof
25 had always been allocated for natural ground water

1 recharge. So if a percentage of that is what is -- I
2 guess, the general benefit of the aquifer or the Raymond
3 Basin.

4 And any water that escapes from these spreading
5 basins, we also measure that. So if it leaves the
6 spreading basins and it goes into the Raymond -- the
7 Devil's Gate reservoir, which is back in this area here, we
8 lose that credit as well. It is a subtraction against us.

9 MR. FIELDS: Gary, what does it mean to have 25 CFS
10 surface rights?

11 MR. TAKARA: Meaning that up to 25 cubic feet per
12 second of surface water is ours.

13 MR. FIELDS: Okay.

14 MR. TAKARA: Anything thereof or anything exceeding
15 that, we don't have the right to capture for any beneficial
16 use.

17 MR. FIELDS: Okay. So that's --

18 MR. SLATEN: That's also about what -- you've got
19 something like 18 or 20 infil- -- your infiltration rate.
20 If you fill up those basins, that's about the rate at which
21 you can actually also infiltrate.

22 MR. TAKARA: That is correct when the County were
23 operating the basins.

24 One of the reasons why we chose to take over the
25 operations was that County -- I shouldn't say they

1 failed to always -- till the land to ensure that the
2 percolation rates were high. But it was one of their lowest
3 priority areas to operate because most spreading grounds
4 are downstream of a dam. It's never upstream.

5 In this case, it was upstream so it wasn't as
6 efficient. But when we took over, every year we continued
7 to till the land, we increased the piping. There was a lot
8 of restricted flows because of the network piping we had up
9 there. So during the first year when we tested this
10 system, you know, we were hitting 30 plus CFS continuously
11 for long periods of time. So now it's no problem to
12 maintain 25 plus.

13 MS. VECCHIO: You guys don't do a wet-dry cycle.
14 You just wait for it to get down to a trickle during the
15 summer and then you actually scarify during the summer
16 months?

17 MR. TAKARA: Yeah.

18 MR. BOMAN: Nature takes care of the wet-dry cycle for
19 us.

20 MR. TAKARA: Yeah. We don't have enough water. Our
21 goal is just to tax out those spreading basins as much as
22 possible. And it's been a while since we're able to do
23 that.

24 MR. SLATEN: This year, they only had water for six or
25 eight weeks?

1 MR. TAKARA: And you're probably talking about three
2 basins at most. We've got 12, 13 basins back there.

3 MR. SORSHER: Gary, you mentioned the diversion
4 structures for the Millard Canyon Creek and also this -- I
5 want to say the Arroyo.

6 Do you know where they are located with respect
7 to the JPL monitoring well No. 1?

8 MR. TAKARA: Okay. I have a slide showing the
9 intakes, but I'm not sure exactly where monitoring well
10 No. 1 is. So maybe Steve or Keith might be able to point
11 it out on that map, or Chuck.

12 MR. SLATEN: This diversion is way up the canyon.

13 MR. BURIL: It's about a mile up.

14 MR. SORSHER: Well, I've got an old report from our
15 department where they said it's about 1.05 miles from
16 Ventura Street entrance into the Arroyo. And I'm trying
17 to --

18 MR. TAKARA: Just to give you an idea, this one
19 structure is about -- about a quarter mile due northeast of
20 the JPL concrete -- JPL bridge. So I don't know where
21 monitoring well No. 1 is relative to all this.

22 But I have a slide showing the maps, so maybe
23 Keith might be able to point it out.

24 Okay. Next slide, please.

25 So, basically, we begin by taking water through

1 our diversion headworks. This here is about -- maybe about
2 a mile north of the JPL bridge. It goes through a series
3 of two settling basins. The purpose is to remove most of
4 the silt material.

5 Next slide.

6 Then the water enters an Arroyo Seco intake
7 structure, and from here it goes through a network of
8 piping and tunnels.

9 Next slide.

10 And then it's eventually piped, measured, and
11 released into the settling basins here. And this is
12 another picture. Here is JPL in the background. This
13 slide here and this slide here.

14 Next slide, please.

15 MR. FIELDS: When you said that there were times when
16 you were spreading 30 CFS, you could only get credit for
17 the 25. So at some point, the amount of acre feet per year
18 you get --

19 MR. TAKARA: Zero.

20 MR. FIELDS: -- stopped?

21 MR. TAKARA: Yeah.

22 MR. FIELDS: I mean, it's like --

23 MR. SLATEN: Maxed.

24 MR. FIELDS: -- is that maxed out at 5600? Is that
25 the conversion?

1 MR. TAKARA: Well, no. No. That's not the
2 conversion. It just what happened to be that year.

3 MR. FIELDS: Okay.

4 MR. SORSHER: Gary, these tunnels that you mentioned,
5 do you know how deep they are and what sizes they are?

6 MR. TAKARA: If the tunnels you're referring to is part
7 of the spreading, they're actually -- they're along the
8 hillside; and they're a very short stretch where we don't
9 have any piping. But we have a lot of tunnels up in the
10 Devil's Gate area. We do have a lot of tunnels,
11 infiltration tunnels. We have Devil's Gate tunnel,
12 Richardson tunnel, Wilson tunnel.

13 MR. SORSHER: No. I mean the one that's transporting
14 the water from your intake structure.

15 MR. TAKARA: Oh, that's a very short run. It's
16 probably only about, say -- I'm guessing it's probably
17 about 150 feet southeast of this, and it goes through a
18 tunnel and just a short stretch along the hillside, and
19 then eventually it's piped back.

20 MR. SORSHER: Comes out daylight then?

21 MR. TAKARA: No. It's piped. There's no daylight.
22 You mean to atmosphere? No. That pipe is flowing full.

23 MR. BOMAN: Other than our traveling screens when it goes
24 through that.

25 MR. TAKARA: Traveling screen is north of that.

1 MR. SORSHER: The reason I'm just asking is because, you
2 know, we've been reading about this mysterious mounding
3 of ground water up around monitoring well No. 1.

4 MR. TAKARA: Again, I don't know where monitoring --

5 MR. SORSHER: It's right at the mouth of the Arroyo there.

6 MR. TAKARA: Oh, okay.

7 MR. BURIL: Right next to the JPL bridge?

8 MR. TAKARA: The JPL Bridge? Oh, I see. Okay.

9 MR. ZAIDI: I think it would be a good idea to just
10 give a basic map of where the recharge areas are -- the
11 basin itself. There is a possibility of recharge of the
12 (inaudible) to the ground water.

13 MR. TAKARA: Okay. You got that.

14 MR. ZAIDI: Like Alan is saying, it is a possibility
15 of mounding. Wherever these tunnels are or where the
16 basins are, they are unlined, and they might affect the
17 ground water gradient there.

18 MR. RIPPERDA: I can pull this map right here on the
19 wall if you want to just --

20 MR. TAKARA: Again, when we get to that one slide,
21 you'll see relative to all this piping -- oh, there we go.
22 There we go. That's great.

23 Okay. JPL facilities here. There is this
24 concrete bridge we continue to refer to as JPL bridge. We
25 have our Arroyo Seco headworks settling basins here. We

1 take our Arroyo Seco stream water through this part right
2 here. The water goes through a series of piping.

3 We also collect the Millard -- we have a Millard
4 intake from the Millard stream here. Both water eventually
5 goes through a series of piping, metering, and then
6 releases to all these spreading grounds here.

7 MR. BOMAN: And then that's the 36-inch pipe.

8 MR. TAKARA: Yeah. Right here. This is running along
9 the Arroyo Seco stream. This shot here is about -- it's
10 about right here we're looking at.

11 So I guess you're saying monitoring well No. 1 is
12 about at this point right here; right?

13 MR. BURIL: Right where the bend in the road is,
14 it's --

15 MR. TAKARA: Right there?

16 MR. BURIL: Right there.

17 MR. TAKARA: Right there. Yeah. Okay.

18 So from this point here to this point, I think
19 that's about a mile.

20 MR. BURIL: Yeah.

21 MR. TAKARA: That's about a mile.

22 MR. SORSHER: But it's -- the well is pretty close to
23 the Millard diversion.

24 MR. TAKARA: Yeah. Because Millard is, yeah, right
25 here. That's why I'm saying it's probably no more than a

1 quarter mile northeast of that.

2 MR. SORSHER: I'm wondering if that's causing some
3 downward seepage from that point.

4 MR. FIELDS: Because of surface water flow. Yes.

5 I mean, Chuck, you would know more than almost
6 anybody on this, but the theory on that is that there is
7 some sort of an impeding structure, whether it's a fault
8 or some sort of a semi-confining lens that's holding that
9 water up about around MW-1. I think it's 15 --

10 MR. BURIL: The trace of the JPL fault goes right next
11 to that bridge. We think that either that or a split from
12 that fault is what's creating it.

13 MR. RIPPERDA: The high level of ground water
14 monitoring well 1 is high all year long, you know --

15 MR. BURIL: Yeah.

16 MR. RIPPERDA: -- whether there's water in the
17 surface. And we don't see that kind of behavior in the
18 monitoring wells down near the rest of the supporting
19 basins. So that's why, you know, Chuck and his original
20 consultants and me all thought that it had to be a fault
21 impoundment.

22 MR. BOMAN: Well, that's the base of the mountain.

23 MR. RIPPERDA: Yeah.

24 MR. BOMAN: So of course there's a --

25 MR. BURIL: Something geologic.

1 MR. TAKARA: Okay.

2 MR. ZAIDI: It's a separate fault block, you
3 think? It's a separate fault block, which is --

4 MR. BURIL: It's possible. It's possible. We don't
5 know for sure because we haven't done enough geophysics to
6 be able to identify all the faults. It certainly would
7 make sense that something in terms of the fault is what's
8 causing that reservoir up there, as opposed to surface
9 water being placed in there and continually recharging
10 that.

11 MR. TAKARA: Okay. This is now on the far east of
12 Pasadena, the Eaton Canyon spreading grounds. We're unable
13 to get the shot of everything here, but actually Pasadena
14 measures stream flow, and it's way up in this area, way up
15 in the Eaton Canyon areas, way up in this area --

16 MS. FELLOWS: Like up where the waterfall is or --

17 MR. TAKARA: No. Actually, south of that. But
18 probably not too far from there.

19 We measure the stream flow, report that to the
20 Raymond Basin. The water comes through -- comes down the
21 Eaton Canyon stream bed, and gets into this large strong
22 catch basin that's operated by the L.A. County Flood
23 Control District.

24 The County releases the water -- I'm not sure if
25 it releases it here or here. One of these two points.

1 MR. BURIL: It's on the right.

2 MR. TAKARA: The right side?

3 Okay. Releases the water here and gets through

4 these spreading basins. These are two or three spreading

5 basins, but there are a lot more along the Eaton Canyon

6 storm drain -- not storm drain, but flood control channel.

7 And the only involvement we get here is that we do the

8 stream bed measurements. L.A. County operates the entire

9 facilities.

10 MR. FIELDS: Gary, I had a question on the previous

11 slide. Is this property up here at the headworks owned by

12 the City of Pasadena?

13 MR. TAKARA: Pasadena. It's all part of our watershed

14 area.

15 MR. FIELDS: This is your property, and then

16 Millard -- this Millard area is yours as well?

17 MR. TAKARA: As well, up to a certain point. If you

18 go to -- I think there was that one slide early on, it

19 shows our city boundary service water areas. You're gonna

20 see this one long sliver goes up, and that's part of our

21 watershed, Arroyo Seco watershed.

22 MR. BOMAN: The map behind you, that Foothill -- see

23 that blue that goes up?

24 MR. FIELDS: Uh-huh.

25 MR. TAKARA: Right here.

1 MR. BOMAN: Right there --

2 MR. TAKARA: Yeah.

3 MR. BOMAN: -- see, we own the whole canyon. And the
4 same thing with Eaton Canyon on the other side of town.

5 MS. FELLOWS: Then how come we have to have Adventure
6 Passes when we go there?

7 MR. BOMAN: The forest service manages that.

8 MS. FELLOWS: Oh, okay.

9 MR. FIELDS: So Millard Canyon is over here; right?

10 MR. TAKARA: Uh-huh.

11 MR. FIELDS: Is this indicating that you do not own
12 this property?

13 MR. TAKARA: Yeah. I guess not, yeah. I'm not sure
14 exactly how much of the Millard stream area we own and we
15 don't own. I'm not sure.

16 MR. FIELDS: Okay. I didn't know if there was some
17 property ownership connected with your allotment of your --

18 MR. TAKARA: Water rights?

19 MR. FIELDS: -- your water -- your service rights.

20 MR. TAKARA: I see. Actually, that 25 cubic feet per
21 second of surface water rights is what we refer to as
22 Arroyo Seco Canyon, including tributaries. So that would
23 include the Arroyo Seco stream here, the Millard stream,
24 there is an El Prieto stream, which is more of a runoff.
25 And there's a whole bunch of -- anything that flows into

1 that stream beds, we have a right up to 25 cubic feet per
2 second.

3 Typically, Millard stream is a much significant
4 smaller flow than the Arroyo Seco. During extremely wet,
5 wet, wet years, we could have as much as a thousand cubic
6 feet per second coming down the Arroyo Seco.

7 That's it. Any questions?

8 MR. SLATEN: Thanks. That was helpful.

9 MR. TAKARA: Thank you.

10 MR. SLATEN: Since I don't see Tony yet, maybe we'll
11 move on.

12 I suppose, then, the next thing would be the OU-2
13 soil vapor extraction stuff.

14 Now, let's just take a second to think about
15 where we are. I don't know if you heard it, Mark, but the
16 DHS people have to leave at, like, 12:15, so that's like
17 about an hour and a half or so. And there are things we
18 probably want to talk about while they are here.

19 Bob's not going to be here until this afternoon,
20 about 12:15, so they won't both be here at the same time,
21 which is a little unfortunate. So we may have to cover some
22 stuff twice. But so do we want to -- how long is the SVE
23 discussion?

24 MR. FAHEEM: Around 30 minutes; with Keith's input, another
25 10-15 minutes.

1 MR. SLATEN: Shall we go ahead and do it, then?

2 Okay. Yeah. Let's go ahead.

3 MR. FIELDS: Actually, maybe we should take five, what
4 they brought up.

5 MR. FAHEEM: No. No. I think we can use yours.

6 MR. FIELDS: Okay. Good.

7 MR. FAHEEM: What I have done is brought some handouts.

8 I would like to thank you for the opportunity for
9 giving us -- to present this slide extraction.

10 MR. FIELDS: Just to give you guys a little
11 background, over the past couple of meetings, there's been
12 some questions. We -- you know, we'll touch on the soil
13 vapor extraction a little bit. And there have been some
14 questions on the details of the operation, details of the
15 system, monitoring. So they've requested that the
16 operators come in and talk about that.

17 MR. FAHEEM: That's what I would like to thank you,
18 and we can go to the next slide.

19 Okay. This -- the operation of the system is
20 managed by -- operated by GEOFON. We're a small business
21 entity located in Southern California. We started the
22 first initiation of the project in the year '00. It was
23 awarded us. And then, for a period of three and a half
24 years, the process continued, and there were a couple of
25 different contracts.

1 Now, we are interested -- where we finished --
2 three -- three operations on the three wells.

3 Now, it is -- the last well we are ongoing on
4 that. It's VE-04 -- VE-02. So I would like to hand my
5 discussion to Tony.

6 MR. FORD: I'm just going to give a real quick
7 background on the SVE operation and JPL. And Sree will
8 give the details on performance and the SVE system.

9 As most of you know, JPL was placed on the
10 national priorities list in October of 1992 and are subject
11 to the provisions of CERCLA.

12 As a part of the CERCLA program, NASA has
13 prepared a ROD for Operable Unit 2. In that ROD, soil
14 vapor extraction has been identified as the selected remedy
15 for the on-facility vadose zone soils. And the ROD also
16 specified the SVE system would be operated at several
17 different vapor extraction wells onsite.

18 A pilot study was conducted at JPL on one vapor
19 extraction well, which was located in the area of the
20 maximum concentrations between April 1998 and September of 1999.

21 During the operation of the system, during the
22 pilot test, it demonstrated that SVE is a suitable remedy
23 for the VOCs in the vadose zone. The system removed over
24 200 pounds of total VOCs during that operation period.

25 In accordance with the ROD, GEOFON was -

1 MR. FAHEEM: You need to go to the next slide.

2 MR. FIELDS: If you could just cue me.

3 MR. FORD: Sorry about that.

4 The chemicals of concern that were identified
5 during the remedial investigations at the site include
6 carbon tetrachloride, Freon 113, TCE, and 1,1-DCE.

7 And, in accordance with the ROD, GEOFON was asked
8 to install three additional vapor extraction wells at the
9 site, in addition to the original well, which was VE-01.
10 The new wells were installed near the perimeter
11 of the existing soil vapor monitoring network to remove
12 VOCs in the soil outside of the radius of influence of the
13 initial well.

14 The new wells were constructed in a similar
15 manner to the VE-01 well, which includes a nested well with
16 anywhere from two to four discreet screened intervals.

17 The new log -- and this is a slide showing the
18 wells and the actual run order of operation of the wells at
19 the site. And the PneuLog testing is a downhole well
20 logging technique that's used at the start of operation at
21 each of the new wells.

22 And this technique characterizes air flow
23 profiles along the screened intervals of the wells, and
24 also it quantifies chemical concentrations vertically along
25 the screened intervals. So it's a useful tool in helping

1 to optimize system operations.

2 MR. BOMAN: How do you pronounce that again?

3 MR. FORD: PneuLog.

4 And it can also be used to verify the performance
5 (inaudible) at the end of the operation during the rebound
6 testing phase.

7 I'll turn it over to Sree, and he can give you
8 some details on the actual performance. Next slide, please.

9 MR. AKKENAPALLY: This is a map showing the existing
10 vapor extraction wells. VE-01 is here, and VE-02 is here;
11 -02 is here, and -03 and -04 are next to (inaudible).

12 There is a question about how we arrived at
13 gradient of influence in the past, and I would like to go
14 over how we did this estimate.

15 Using the data collected during the operation of
16 the SVE wells, we have collected the vacuum responses in
17 the network of wells, which are spread facility-wide.

18 The maximum radius of influence is the maximum
19 distance from the extraction well where the -- is the
20 maximum distance from the extraction well that is affected
21 by vacuum applied to the extraction well.

22 There is where the vacuum dissipates to zero.
23 But we took a concentrated approach in estimating the
24 effective radius of influence, which is the distance from
25 the test well where the vacuum in the soil is equal to a

1 certain percentage, which is usually between one and five
2 percent.

3 And I would like to give you an example for one
4 of the extraction wells, how we arrived at this effective
5 radius of influence.

6 The average well vacuum at extraction well VE-04
7 was 50 inches of water. So, therefore, the effective
8 radius of influence would be that distance where the well
9 vacuum is the distance -- is the distance from the wellhead
10 where the vacuum in the soil is 2.5 inches of water, which
11 is like 5 -- which is 5 percent of 50 inches of water
12 wellhead vacuum.

13 Next slide, please.

14 This is the estimated effective radius of
15 influence for each extraction well. As you can see, it
16 covers the VOCs plume.

17 Next slide, please.

18 We're going to details of the results of SVE
19 operations at each well. I'll start with VE-01.

20 We have collected the SVE operations at this well
21 in two phases, each six months of duration. And the
22 combined flow average approximately 450 CFM, average vacuum
23 of 50 inches of water. The effective radius of influence
24 was estimated at 350 feet.

25 And approximately 54 pounds of cumulative VOCs

1 were removed from this extraction well in a duration of one
2 year. About 6.1 pounds of Freon 113, and 26 pounds of
3 carbon tetrachloride, and 9 pounds of TCE and 2.4 pounds of
4 PCE were removed from the subsurface by operating the SVE
5 system at extraction well VE-01.

6 The influent VOC concentrations for a period of
7 one year were reduced by over 80 percent at this location.

8 Next slide, please.

9 MR. FIELDS: It should be noted that the SVE system
10 under Chuck's -- when he had -- when Foster Wheeler was
11 operating it, started in 1998. So there was a significant
12 time period before January '01 that this well was in
13 operation as well.

14 MR. ZAIDI: What were the starting baseline
15 concentrations of these VOCs, when you just started the
16 system in '98?

17 MR. AKKENAPALLY: In '98 -- Foster Wheeler?

18 We will forward that information later.

19 MR. ZAIDI: And after the operation, what are the
20 concentrations now? Any idea?

21 No?

22 MR. BOMAN: Next slide.

23 MR. AKKENAPALLY: This is the slide which used a
24 general trend of influent VOC concentrations when we
25 started the SVE operations at well VE-01. It started at

1 .01, and it peaked to 1 PPMV. And then there is a steady
2 decline here.

3 And we stopped here and started the second phase
4 here. Because of the idling of the system where you see a
5 spike initially the first four, five days, and then it
6 started declining.

7 MR. ZAIDI: There were no rebounds during this time?

8 MR. AKKENAPALLY: Yes, there is some. Because of this
9 idling period here, there is a rebound here, from here to
10 there, and then it started declining.

11 And this is, again, six months of operations
12 here.

13 MR. ZAIDI: Is this the inlet to the system, or is it
14 the --

15 MR. AKKENAPALLY: This is the inlet to the system, the
16 influent.

17 MR. ZAIDI: It's not the indigent well concentrations?
18 It's not the concentration of the sample collected from the
19 wellhead of VE-01? This is the influent?

20 MR. AKKENAPALLY: Yeah, the influent of the system,
21 SVE system.

22 You are asking about -- because we have three
23 discreet screen intervals in this well VE-01. These are
24 not the concentrations of individual screen intervals.
25 These are combined concentration intervals of influent.

1 The next slide, please.

2 This is a graph showing the influent Freon 113
3 concentrations over here. The general trend, as you can
4 see, is declining.

5 This is a graph showing the influent carbon
6 tetrachloride concentrations.

7 Next slide, please.

8 This is the influent PCE concentrations for a period
9 of time. As you can see the general, the general trend --

10 MS. FELLOWS: What made it drop in that period while
11 it was idling?

12 MR. AKKENAPALLY: What happens is during the first --

13 MS. FELLOWS: I don't mean there. I mean in the
14 open -- the gap. And I don't want to look at you because I
15 don't want to get blinded, but, yeah, right where your red
16 dot is there, there is no testing going on?

17 MR. AKKENAPALLY: Yeah, because we idle the system.

18 MS. FELLOWS: Right. And so it starts out lower than
19 you actually finished it, so why is that?

20 MR. RIPPERDA: I think it's because the hot spot
21 source is not right where the well is. So when you're
22 at -- we have no vacuum going, and all the fuses, the
23 equilibrium in that area --

24 MS. FELLOWS: Okay.

25 MR. RIPPERDA: -- and once you start sucking the hot

1 spot, which is a little ways away, it gets pulled over.

2 MS. FELLOWS: Okay. Thanks.

3 MR. ZAIDI: It's also possible that -- because these
4 are the influent concentrations; right?

5 MR. AKKENAPALLY: Yes.

6 MR. ZAIDI: So the influent of the system might have,
7 maybe, additional dilution.

8 MR. AKKENAPALLY: With the concentration coming from
9 your well.

10 MR. ZAIDI: Yes.

11 MR. AKKENAPALLY: That may be also possible. Yes.

12 MR. ZAIDI: When we opened the dilution well on the
13 system.

14 MR. AKKENAPALLY: Yes.

15 Next slide, please.

16 MR. FIELDS: I just wanted to verify, these
17 concentrations are PPMV?

18 MR. AKKENAPALLY: Yes.

19 MR. FIELDS: Not PPB?

20 MR. AKKENAPALLY: No. These are all PPMV.

21 This is the influent PCE concentrations.

22 As you can see, it's big, in the first few days,
23 and it started declining during the first phase, and same
24 thing goes to the second phase.

25 Next slide, please.

1 And this slide shows the results of our SVE
2 operations at extraction well VE-03, which we installed
3 after operating the VE-01 for a period of one year.

4 This well was operated for a period of six
5 months. The combined average flow rates averaged at 370
6 CFM, an average vacuum of 60 inches of water.

7 And the estimated effective radius of influence
8 at this well was 400 feet. And 13.2 points of accumulated
9 VOCs were removed at this well location and 0.25 pounds of
10 Freon 113 and 0.7 pounds of carbon tetrachloride, 0.9
11 pounds of TCE and 0.10 pounds of PCE were removed at this
12 location.

13 During the operation of SVE at this well
14 location, we have seen significant reduction in the TCE
15 concentrations in one of the soil vapor monitoring wells,
16 which is located to the northeast of the facility. And
17 this monitoring well is designated as No. 4, which is like
18 our vacuum response for monitoring point also.

19 We do quarterly soil vapor monitoring from this
20 network of wells, which are numbered from SVE-01 through
21 SVE-39, and we do this sampling every quarter to see how
22 the SVE operation is progressing in reducing the
23 concentrations of chemicals of transfer.

24 MR. BOMAN: On this slide where it says "13 pounds" --
25 MR. AKKENAPALLY: Right.

1 MR. BOMAN: -- if you add the ones past it, so is
2 there VOCs that we don't know of?

3 MR. AKKENAPALLY: No. These are the main chemicals of
4 transfer, the four that are identified here, the Freon 113,
5 carbon tetrachloride, TCE, PCE.

6 In addition to that, when we do the analysis on
7 the vapor samples, you have other VOCs. There are almost
8 45 to 30 compounds in the VOC analysis test.

9 MR. RIPPERDA: But they're not the health-based --

10 MR. AKKENAPALLY: No, they are not.

11 MR. RIPPERDA: -- constituents --

12 MR. AKKENAPALLY: They are not.

13 MR. RIPPERDA: These are all the (inaudible) carbons
14 or --

15 MS. ARTEAGA: Yeah, but they're 90 percent of the
16 total mass.

17 MR. RIPPERDA: Yeah. Right. There is more kind of
18 regular solvents than TCE and Freon.

19 MR. FIELDS: Is that -- is your 13 pounds from your
20 hand instruments calculated from hand instruments or from
21 the lab?

22 MR. AKKENAPALLY: This is based on the lab analysis,
23 and we have estimated on the concentrations and the hours
24 of operation of the system.

25 This slide shows the results of our SVE

1 operations at the extraction well VE-03. Actually, we are
2 done with VE-03. We will be moving to VE-04.

3 This is a graph showing the influent VOC
4 concentrations. As you can see, the spike in the first few
5 days of operation and then the steady decline in
6 concentrations.

7 Next slide, please.

8 Similarly, this is a graph showing the influent
9 Freon 113 concentrations over a period of time.

10 Next slide, please.

11 This is a graph showing the decline in
12 concentrations of carbon tetrachloride.

13 MS. FELLOWS: Excuse me. Can you explain the
14 increase towards the end on the spikes? Instead of going down,
15 it's going up -- your trend.

16 MR. BOMAN: Go back a couple of slides, down that way.

17 MS. FELLOWS: The other slide.

18 MR. AKKENAPALLY: As you can see, the graph is so --
19 this scale is large. Basically, although the graphical
20 representation is showing a big peak here, but it's not
21 really the -- in terms of the quantities, the numbers, it's
22 not that high.

23 MS. FELLOWS: The risk goes up.

24 MR. BURIL: Different effect of the graph.

25 MR. RIPPERDA: It could just be that that low a

1 number, (inaudible) little noise, but it's kind of
2 consistently going up.

3 So I'd say it's probably kind of the same as
4 Merrilee's question before. This is in a very low
5 concentration area and as you're running it over time,
6 you're sucking in contaminants from farther away. That
7 would be my guess.

8 MR. AKKENAPALLY: Yeah. Because we are seeing the
9 effect of our vacuum (inaudible) wellhead -- the response
10 in a monitoring well which is thousand feet from its
11 extraction well. So it's pulling from that far.

12 That's why we took a conservative approach and
13 estimated the effective radius of influence, which is like
14 450 feet.

15 MR. ZAIDI: What kind of response are you observing
16 there in the monitoring well? Is it a lowering or rising
17 of -- rise of the water levels there, or what kind of
18 response are you getting there?

19 MR. AKKENAPALLY: No. It's not the water level. We
20 measured the vacuum.

21 MR. ZAIDI: Oh, vacuum responses. Okay.

22 MR. AKKENAPALLY: Those are not ground water markings.
23 Those are vacuum response markings and probes.

24 MR. ZAIDI: You know, in addition to this influent
25 concentration measurements, I think, if you sample the

1 individual wells and showed those concentrations, they
2 would not show these -- in my opinion, they will probably
3 not show that many peaks, unless there is a rebound.

4 These rebounds are -- these -- these peaks that
5 are the influent concentration peaks, they may be, again,
6 because at some time, you are sucking in more dilution.

7 MR. AKKENAPALLY: Yes.

8 MR. ZAIDI: And the concentration becomes diluted, and
9 whatever is being recorded is not really the concentration
10 coming from the vapor extraction well, but it's mixed with
11 the air that you're adding into it.

12 MR. AKKENAPALLY: That is well --

13 MR. ZAIDI: But if you collect the samples from the
14 wellhead, all the vapor extraction, after whatever interval
15 you choose, and then get it analyzed in the lab and then
16 make a graph of those concentrations, those will give you,
17 I think, a more accurate representation of the
18 concentration actually going on there in the subsurface.

19 And this we already require all the time, but in
20 addition to the influent concentration, you also take
21 samples from the --

22 MR. AKKENAPALLY: We do take individual screening
23 samples first week of our operations.

24 MR. FORD: Yes.

25 MR. AKKENAPALLY: And after the first week, we go

1 bi-weekly.

2 MR. ZAIDI: These are with PID?

3 MR. AKKENAPALLY: No. Actual back samples.

4 MR. ZAIDI: And you get them analyzed in your lab;
5 right?

6 MR. AKKENAPALLY: Yes.

7 MR. FORD: We take the FID readings daily on both
8 influent and on individual screened intervals.

9 MR. RIPPERDA: Did you have a question a few minutes
10 ago, Karen?

11 MS. ARTEAGA: Oh, I did have a question.
12 It seems like you're kind of getting one low
13 point and then -- I mean, I get the impression that you
14 stopped and moved on to the next location (inaudible) kind
15 of one drop.

16 So did you do any soil sampling that confirm the
17 VOC concentrations had decreased before you had gone to the next
18 location?

19 MR. SLATEN: The ROD says you do six months in a
20 place, and then move; right?

21 MR. AKKENAPALLY: Right.

22 MR. SLATEN: So this was all predetermined. It's not
23 because of this drop. That's just serendipity.

24 MS. ARTEAGA: Just a good ROD.

25 MR. AKKENAPALLY: And then we'll also be doing the

1 rebound tests. We go back to the well again and --

2 MS. ARTEAGA: Oh, after you get through all four.

3 MR. AKKENAPALLY: -- rotations -- yeah -- cycling the
4 rotations are stable.

5 MR. RIPPERDA: You know, at the ROD because the -- you
6 know, these concentrations and the total mass removed are
7 fairly low, so it's not like this is a huge ongoing
8 problem. It's a problem that needs to be addressed.

9 You always want to reduce the source. But we
10 didn't think it was a high enough risk to require them to
11 put four -- to run all four wells simultaneously, so we
12 allowed them to save a little money and cycle around all
13 four wells and just keep cycling, and then use the Regional
14 Board's shutoff criteria to evaluate individually when a
15 well could not continue to be included in the cycling loop.

16 MR. AKKENAPALLY: It was an individual action for us to
17 remove as much as mass as practicable from the vadose zone to
18 prevent migration of VOCs into the ground water.

19 MR. ZAIDI: No. The approach is fine. You extract
20 the vacuum from one well, and then go to the others and
21 then -- so, in the meantime, there will be a buildup. The
22 well that you leave --

23 MR. AKKENAPALLY: Right.

24 MR. ZAIDI: -- you don't extract from that well. That
25 might result in a slight rebound or something like that.

1 And then when you come back to the same well again, then
2 that's more useful to do the extraction after some
3 interval.

4 MR. FORD: And just because we stopped at one
5 particular well doesn't mean that it won't continue on the
6 next --

7 MR. ZAIDI: Exactly.

8 MR. AKKENAPALLY: This is carbon
9 tetrachloride concentration map --

10 MR. RIPPERDA: So, you know, we're at 11:15. I think
11 we can -- you know, we all have this data if we want it. I
12 think you can cycle through the individual parts quickly.

13 MR. AKKENAPALLY: Yeah. It is information for each
14 individual well.

15 So this is a graph for the TCE concentrations.
16 Graph for PCE concentrations.

17 MR. BOMAN: PCE does come off onsite there.

18 MR. BURIL: For the ground water.

19 MR. SLATEN: We have a little bit of PCE. It's not
20 strongly associated with ground water.

21 MR. AKKENAPALLY: It's not like I go and the total
22 pond is removed.

23 MR. BOMAN: It's good to see these graphs.

24 MR. AKKENAPALLY: If you look at these --

25 MR. RIPPERDA: Good thing you're sitting right next to

1 each other, you and Chuck.

2 MR. BURIL: I left my club in the car.

3 MR. AKKENAPALLY: If you look at the Y axis scale
4 here, you look at the concentrations .001, and the maximum
5 is .006.

6 MR. BOMAN: Well, it's too far away. I can't see it.

7 MR. RIPPERDA: That's when Chuck used to have the lab
8 assistants dry clean his clothes -- his suits.

9 MS. FELLOWS: All those suits he wore.

10 MR. AKKENAPALLY: Next slide, please.

11 I'll be discussing the extraction well VE-04.

12 We operated the SVE system at this location also
13 for six months and then combined flow rate average of 300
14 CFM at average vacuum of 50 inches of water.

15 The effective radius of influence was estimated
16 to be 450 feet at this well, and approximately 11.4 pounds
17 of VOCs were removed at this location, 1.4 pounds of Freon
18 113, 0.9 pounds of carbon tetrachloride, 5.4 pounds of TCE,
19 and 5.4 pounds of PCE were removed at this location.

20 And during the operation of this system, at this
21 well, we have noticed significant reduction in the TCE
22 concentrations in soil water vapor monitoring well No. 39,
23 which is southwest of extraction well VE-04. This is at
24 the southwest perimeter of our network.

25 And in six months of operations, we have noticed

1 a reduction of over 70 percent in the influent VOC
2 concentrations.

3 Next slide, please.

4 And the graphs. Yeah. This is the trend that we
5 have seen the influent VOC concentrations over a period of
6 six months.

7 Next slide, please.

8 And this is Freon 113 concentrations map.

9 And this is carbon tetrachloride concentrations.

10 And this is influent TCE concentrations.

11 Influent PCE concentrations map, of course.

12 And this is the last well where we are performing
13 the SVE test at this location, and we are into two months
14 of operation at this location.

15 We started the system on April 20th, and the
16 average flow rates are at 360 CFM at an average vacuum of
17 45 inches of water.

18 The effective radius of influence for this well
19 is approximately 350 feet.

20 And as of May 31st at this location, we have
21 removed 12.1 pounds of VOCs and 0.3 pounds of Freon 113,
22 3.4 pounds of carbon tetrachloride, and 3.0 pounds of TCE,
23 and 0.02 pounds of PCE. And the highest concentration
24 compound at this location was TCE.

25 And as you can see, this is just a few weeks of

1 data. Like I said, you will see these peaks during the first
2 few weeks, and after that, you will see a steady decline in
3 the concentrations.

4 MR. FAHEEM: We hope to see that.

5 MR. AKKENAPALLY: This is the influent TCE
6 concentrations. As you can see, the first few days, it
7 peaked and then started declining.

8 Any discussions or questions?

9 MR. RIPPERDA: Since --

10 MR. AKKENAPALLY: Let me finish one quick information
11 here. This might be of interest to the parties here.

12 As Tony said, we started this SV operation in
13 January of 2001. In three and a half years, we have
14 removed approximately 145 pounds of VOCs facility-wide. And
15 Freon, 138 pounds were removed in three and a half years.
16 And carbon tetrachloride, 31 pounds, and TCE, 19 pounds,
17 and PCE is 3 pounds.

18 MR. RIPPERDA: How much is PCE?

19 MR. AKKENAPALLY: Three.

20 MR. BOMAN: Oh, so there's a lot left.

21 MR. ZAIDI: I think, in your next reports, if you may
22 provide the graphs, like I said, of the lab concentrations
23 from your individual wells.

24 MR. AKKENAPALLY: We can provide that. We have that
25 data. We'll prepare -- each vapor extraction well, like

1 Tony said before, it has two to four individual screen
2 intervals, and they are numbered. Like, for example, VE-01
3 is our first extraction well, right? We numbered them
4 VE-01 dash A and dash B and dash -- and we took -- we took
5 samples during the first two weeks of our operations.

6 MR. ZAIDI: That way, when you compare those --

7 MR. AKKENAPALLY: We can.

8 MR. ZAIDI: -- over maybe some time.

9 MR. AKKENAPALLY: Yes. You can see the variations,
10 what is happening to the separate zone here, what's happening to
11 this zone, that zone, and as compared to the adjacent well
12 zones.

13 MR. RIPPERDA: Are you guys -- you're going to come
14 back with a new log every time you move the system to a --

15 MR. AKKENAPALLY: Exactly. Yes. Beginning of our --

16 MR. RIPPERDA: And then are you also, on some time
17 intervals, sampling from the rest of the monitoring well
18 network?

19 MR. AKKENAPALLY: It is quarterly. We are doing
20 quarterly.

21 MR. RIPPERDA: And at what point are you going to
22 generate an overview report? Are you just going to keep
23 cycling these or --

24 MR. FAHEEM: That, I think, we'll discuss that with
25 Keith and -

1 MR. AKKENAPALLY: That's one of the recommendations
2 that we provide.

3 MR. FORD: I would suggest, after we finish the
4 operation at VE-02 --

5 MR. RIPPERDA: Yeah.

6 MR. FORD: -- that's one complete cycle. I think we
7 need to evaluate it at that time.

8 MR. RIPPERDA: Some of these wells you are getting so
9 little out of that you might want to propose not going back
10 to them, and then you'd want to justify that with the
11 monitoring well data, the data that Mohammed is talking
12 about, you know, look at the Regional Board criteria, there
13 are some other criteria in the ROD about modeling transport
14 to ground water.

15 MR. FORD: Especially VE-03. That was the least
16 productive well.

17 MR. RIPPERDA: Least productive. Yeah.

18 MR. AKKENAPALLY: And then, based on the quarterly
19 soil vapor monitoring from the network wells, we are seeing
20 significant decline of concentration of the VOCs
21 facility-wide.

22 MR. SLATEN: And next? What happens next? We're
23 going to be finishing up, in a few months, the last site.

24 MR. FAHEEM: This one, Steve, I think the last well is
25 supposed to end in September, October '04.

1 I think the suggestion is whether to go back, do
2 one more, just to see the rebound.

3 MR. SLATEN: I think we probably will. The question
4 is, do we just go ahead and do that, or do we -- as you're
5 getting ready to finish up -- we start writing like a
6 letter report or some kind of interim thing saying, "Here
7 is what we've done so far. Here's what we plan to do
8 next."

9 MR. RIPPERDA: That's what I was thinking of, drawing
10 up a written report of all four cycles with a monitoring
11 well network. And if you guys, with your best engineering
12 judgment, think that one or two of the wells don't even
13 need one recycle, you look at the data, compare it to the
14 Regional Board and shutoff criteria and the other
15 information in the ROD --

16 MR. SLATEN: We'll look at that.

17 MR. RIPPERDA: -- and make that proposal.

18 MR. SLATEN: How do we know if it's really rebound
19 until we suck on it for a couple of days, because of the
20 way it happens the first couple of days?

21 MR. RIPPERDA: You just suck on it a little longer.

22 MR. SLATEN: I mean you would almost have to go back
23 for a little while.

24 MR. FIELDS: You can also check monitoring point
25 locations that are within the effective radius of influence

1 of that well.

2 MR. FORD: Yeah.

3 MR. FIELDS: You would want to use those data
4 together.

5 MR. AKKENAPALLY: Then there is in the ROD, or as
6 we have mentioned that we will estimate the
7 significant -- well, rebound is we should be looking at
8 significant rebound, and we will be estimating what is
9 significant rebound. And based on that criteria, we will
10 evaluate removal being in a position to say, yeah, it has
11 rebounded or not.

12 MR. ZAIDI: Well, the Regional Board considers 20
13 percent exceedence over the pre-rebound concentration as a
14 cutoff for the rebound.

15 So if the post-rebound concentrations are 20
16 percent, more than 20 percent, of the pre-rebound
17 concentrations, then it's -- you still have to keep on --

18 MR. AKKENAPALLY: Continue.

19 MR. ZAIDI: -- continue the extraction.

20 But if the post-rebound concentrations are less
21 than 20 percent of the pre-rebound concentrations from the
22 individual wellheads, then we consider that, yeah, you have
23 achieved kind of a (inaudible) class. But then it has to be
24 confirmed also by the soil sampling.

25 MR. AKKENAPALLY: Confirmation soil sampling is not

1 practical at this facility because of the --

2 MR. FIELDS: Regional Board allows use of vapor data for --

3 MR. ZAIDI: Vapor data. Yeah, we can consider that.

4 In case of some circumstances, yeah, we can consider that.

5 MR. AKKENAPALLY: That's the approach.

6 MR. ZAIDI: So that should be a good justification for

7 that because that's required.

8 MR. BURIL: As a historical point, when we first put

9 these wells in, the Regional Board would not accept lab

10 data of soil samples (inaudible) of VOCs. They insisted on

11 vapor.

12 MR. FIELDS: You have guidance that provide that for

13 geology such as this.

14 MR. RIPPERDA: Yeah. That particular geologist looked

15 at the sandy, cobbly nature, and said that once you drill

16 it --

17 MR. ZAIDI: It depends upon site specific factors.

18 Like if we have cobbles and boulders and very coarse,

19 gravely sand, then, yeah, of course, so there won't be

20 anything absorbed to those.

21 But the rebound criteria is that. But then that

22 rebound should be -- should have a shutdown down period of

23 at least 30 days.

24 MR. FORD: Okay.

25 MR. ZAIDI: So you shut down the system, then after

1 30 days -- you shut down the system -- actually, before you
2 shut down the system, you take a sample from the wellhead.
3 And then after you shut down the system, 30 days after, you
4 take another sample, and then you start the system.

5 MR. FORD: Okay.

6 MR. SLATEN: Richard, did you have a question?

7 MR. COFFMAN: Yeah. All of these wells are
8 multi-level, right?

9 MR. AKKENAPALLY: Yes. Nesting wells, yes.

10 MR. COFFMAN: Have you been looking at the
11 concentrations from the individual depths to see where most
12 of your --

13 MR. AKKENAPALLY: Yes. When we start the operations
14 at each well, we take individual well screen samples, also
15 vapor samples for a period of one week.

16 MR. FORD: In addition to that, the PneuLog and
17 testing that we do on each well tells us where the majority
18 of this load is coming from within the individual screened
19 intervals, and also where the maximum concentrations are.
20 So we have a good idea, you know, whether we're getting the
21 bulk of our concentrations from, you know, which interval.

22 MR. AKKENAPALLY: Let's say, for example, one of the
23 four individual screens doesn't produce anything, we
24 shut that well.

25 MR. COFFMAN: Have you seen a trend in the wells where

1 you get most of your concentration out of a certain
2 horizon, or is it scattered?

3 MR. FORD: For the most part, we have gotten most of
4 it from the shallow intervals.

5 MR. COFFMAN: From the shallow intervals.

6 MR. SLATEN: Okay. We have a lot, still, on the
7 agenda today. I appreciate you guys coming out and giving
8 us this update.

9 So shall we move along, try to get in some
10 discussions before DHS people have to leave?

11 We had OU-1 on the agenda next. But why don't we
12 just skip to OU-3 because that's most of what DHS, I think,
13 has got an interest in.

14 So I've got some slides to kind of give us stuff to
15 talk through and walk through here. People can see for
16 themselves, sort of, the stuff that I'm going to be talking
17 about.

18 So let's go to the next slide, Keith.

19 This is our addendum work plan for the new
20 monitoring wells, to define the extent of the chemical --
21 of our chemicals in ground water.

22 And two ideas that we've been talking about
23 are the one that's up closer to the south of where we
24 know that our plume is and then getting down closer to the
25 Sunset Reservoir on that end to try to get an idea of where

1 that perchlorate down there is coming from.

2 We've got -- we've drawn up some plans. This
3 location is in the yard at the Pasadena Water and Power,
4 and it's a pretty good-sized location, a good-looking
5 location. This location is actually up at which well, the
6 name of the well?

7 MR. FIELDS: Atlanta.

8 MR. TAKARA: Which one are you pointing to?

9 MR. SLATEN: Atlanta.

10 MR. TAKARA: Yeah. Atlanta.

11 MR. SLATEN: The Atlanta well, which is a tight spot
12 there, and it's going to be a challenge to drill, and we
13 may have to take up part of the street to drill. So
14 there's a challenge.

15 So we've got -- we've put together our addendum
16 work plan, and it's actually on my desk right now. I've
17 got to get a chance to look at it as soon as I clone myself
18 and have a little more time to work on things.

19 MR. RIPPERDA: Is the Atlanta well plugged, or is it
20 just inactive, or is it actually abandoned?

21 MR. TAKARA: Abandoned. Oh, I guess it's -- I know
22 it's inactive, but is it abandoned?

23 MR. RIPPERDA: Is the screen open over the whole
24 interval?

25 MR. FIELDS: When we went out there in late last year,

1 we hit obstruction at 161, which is, you know, above the
2 water table. So the assumption that we had from that point
3 was that it was abandoned.

4 MR. RIPPERDA: Or maybe it just had some --

5 MR. FIELDS: There's some collapse there.

6 MR. RIPPERDA: -- monitoring well right next to it if
7 it's open, cross contamination --

8 MR. SLATEN: We do not know -- I know.

9 And that's one reason that I thought that we
10 might try to find another spot, besides it being difficult
11 to get in there. We may be looking across the street and a
12 block away at the Unified School District -- has a big,
13 behind the fence, a big parking lot with empty spots. So
14 we'll probably talk to them before we take any final steps
15 here to try to get a little ways away from there. So
16 that's still out.

17 But we're trying to get stuff done, you know,
18 this year in parallel with everything else we're doing so
19 we don't, you know, postpone trying to find a complete
20 extent of the plume too long. Next.

21 MS. VECCHIO: Steve, technically, it's City of
22 Pasadena's responsibility, if a well does become abandoned,
23 it has to be properly destroyed.

24 And -- which means basically filling it in with
25 cement, cutting off the casing to about five feet below the

1 ground, and putting native soil in it so that there is none
2 of this cross-contamination.

3 If the City has abandoned this well, it is their
4 responsibility to properly destroy it.

5 MR. SLATEN: That's all fine and good, but what could
6 have happened already that would destroy our ability to get
7 good, discreet information is there could have been
8 migration from different zones, and it could be a mixture
9 of crap that we don't --

10 MS. VECCHIO: Right.

11 MR. SLATEN: -- if we get too close to it, we might be
12 measuring that.

13 MR. RIPPERDA: But what you're saying is Pasadena
14 should go out there and abandon it properly now?

15 MS. VECCHIO: Absolutely. Absolutely.

16 MR. TAKARA: Okay. Put that on your agenda.

17 MR. BOMAN: Do you hear that, Gary?

18 MR. SORSHER: If it has been done, there should be a
19 record of it. You have to get a -- there should be a
20 record of it.

21 MR. BOMAN: Yeah. I don't think it's been abandoned.

22 MR. TAKARA: That's your first job. Abandon that
23 well.

24 MR. SLATEN: Next slide, Keith.

25 The other thing that we're working on is a little

1 evaluation of the EPA method 314. You know, we had talked
2 about how perhaps the method -- we've gotten some strange
3 results, and there's been talk about how perhaps the method
4 gives you bad results, depending on ion exchange.

5 So we put together to go out to just a couple of
6 wells, taking, like five samples to try to do some
7 comparison using an EPA method 314, and comparing -- and
8 also doing EPA method 8321 -- and try to just compare the
9 results, just kind of a mini-little study here on our own
10 to try to get some idea about if the data we're getting is
11 reliable and accurate.

12 Now, here's the big thing that's going -- that's
13 going on and moving into. You know that we have been
14 talking about now for quite a while the approach of,
15 for the OU-3 and building a large, another large
16 treatment facility up on plant site near the OU-1, and
17 building a large pipeline off-site, and extracting large
18 volumes of water, bring them up on plant site, initially
19 reinjecting them on plant site, and then later being able
20 to -- after all the 97-005 and water permits are available --
21 giving that water back to the City of Pasadena to use for
22 purveyance.

23 This is a big system with a lot of complicated
24 infrastructure and interactions and construction, and
25 that's what we've been working to for a while. We're

1 looking for better ways to do that.

2 But, more recently, some new things have happened
3 to come along and caused us to rethink that. The things
4 that happen, of course, while we're talking about getting
5 the system in place, the plume moved from being centered
6 more on the Arroyo to being more out in Bob's backyard
7 around Lincoln Avenue. His concentration's been going
8 up.

9 We got Rubio Canyon, Las Flores out near the
10 leading edge, which were, since it's moved on towards Bob.
11 It's probably -- it's that much closer to the other water
12 companies further down gradient.

13 Also, we had kind of been -- we looked at ion
14 exchange resins a couple of years ago in our studies, but a
15 lot of technology improvements have been occurring recently,
16 so that started to change the economics and viability of
17 ion exchange.

18 DHS was -- has been providing directions recently
19 about blending in this area. And then we started talking
20 to EPA, DTSC Regional Board about this idea of off-site
21 wellhead treatment, and they seemed to believe that that
22 would work well.

23 And Bob is going ahead with his ion exchange
24 system right now, which is right out in the plume, and he's
25 going to be on soon. He's going to be the first one who's

1 going to be helping us to stop further movement of this
2 plume. That's Bob's construction week before last.

3 MR. RIPPERDA: Should we say Ann, since she's here
4 and Bob's not?

5 MR. FIELDS: Okay. That's Jack in the picture.

6 MR. SLATEN: Yeah, that's Jack. He's the one doing all the
7 work there. See, he's out there digging that. That's right.

8 MS. FELLOWS: He's playing and --

9 MS. VECCHIO: Excuse me.

10 MR. SLATEN: Yes.

11 MS. VECCHIO: Steve, I do have a comment about the change
12 in direction about blending. I want to point out to
13 everybody that is not a philosophical, you know, policy
14 change. It is simply a means of dealing with the possible
15 shortage of water during the summer months. It is not --
16 it is not allowed to be a final remedy. It's an interim
17 remedy, just for the summer, as long as other conservation
18 measures, purchasing water from other water systems, is
19 done first before you actually blend.

20 And the other point I'd like to make about
21 L.A. -- Las -- Lincoln Avenue Water Company is the fact
22 that we have yet to receive anything. We have not received
23 operations maintenance plans. We have not received
24 construction plans. We have not received a permit
25 application. And if this operation should occur in July, is

1 going to occur, things need to start happening at Lincoln
2 Avenue Water Company.

3 MR. SLATEN: Okay. As I get more into this, I'll talk
4 about how we're offering assistance.

5 MS. ASAVADIMOL: Let me clarify that. We are, with
6 Battelle, working on the commitment and operations plan,
7 and we are submitting that tomorrow.

8 MS. VECCHIO: You are?

9 MS. ASAVADIMOL: Yes.

10 MR. SLATEN: Okay. So when -- you know, we're
11 somewhat, if you will, in partnership. It's our money that
12 they're using, and we're offering technical support
13 wherever we can because we want to see them be successful.

14 MS. VECCHIO: Yeah. I have one other question.
15 CEQA?

16 MS. ASAVADIMOL: I do have a question about that too,
17 because the letter that we received from your department,
18 it's underlined where CEQA is concerned. It says that private
19 utility with no lead agency has to fill out the
20 environmental form. But --

21 MS. VECCHIO: We become the lead agency.

22 MR. O'KEEFE: I provided you with forms.

23 MS. VECCHIO: We become the lead agency.

24 MS. ASAVADIMOL: So we do have to do CEQA --

25 MR. O'KEEFE: Oh, yeah.

1 MS. VECCHIO: Oh, yeah. We just become the lead
2 agency, and you guys would have to do the appropriate work.
3 And then we, become the lead agency to sign off on
4 it. But you still have to -- you still have to go through
5 the process of CEQA.

6 MS. ASAVADIMOL: Okay.

7 MR. RIPPERDA: Do they have to do that before the July
8 turn on, or before the permit?

9 MS. VECCHIO: As long -- technically, we're not
10 allowed to issue a permit without the CEQA documentation
11 and receipt of the notice of determination. But because
12 the CEQA hasn't been done yet, there is a 45-day review
13 period, so there's no way that that could be completed.

14 As long as we know that the process is being
15 done, the CEQA has been applied for, we will probably issue
16 the permit without CEQA, and then we will do an addendum at
17 a later date to change -- to do some page change-outs in
18 the documents that says CEQA has been completed.

19 But technically, we're not supposed to issue
20 permits without the final notice of - (inaudible).

21 MR. RIPPERDA: But the permit is still a good time
22 away; right? That's not tied to them turning on this
23 summer?

24 MS. VECCHIO: What was that again?

25 MR. RIPPERDA: The permit is still many, many, many

1 months away.

2 MS. VECCHIO: No. No.

3 MR. O'KEEFE: We're on a deadline for July 15th,
4 which is an impossible date, given that we didn't get the
5 documentation, but we'll work towards a date --

6 MS. VECCHIO: Now, I think you guys are -- don't
7 confuse 97-005 with the permit.

8 MR. RIPPERDA: Okay. That's what I'm saying.

9 MS. VECCHIO: This is a permit to operate this
10 treatment system. Anytime a water system changes
11 chemicals, provides chemical treatment, either by addition
12 or removal, an amended permit has to be issued by our
13 department for that treatment system to operate, to be
14 installed and operate. So that is different than the
15 97-005.

16 MR. RIPPERDA: Okay.

17 MS. VECCHIO: But it is sort of a prelude to the
18 97-005 because of the fact that this system will have to be
19 evaluated as part of the 97-005 documentation as to whether
20 or not it's going to fulfill the final remedy for Lincoln
21 Avenue.

22 MR. BURIL: Can you give a thumbnail stretch
23 of requirements of the permit for operation?

24 MS. VECCHIO: Technically, we have 90 days to complete
25 a permit after we have received the permit application and

1 all of the required documentation. But we have said, in
2 order to expedite, that we would try to get this permit out
3 by the 1st of July. And we can only do that if we are
4 provided with the application, the O&M plan, the
5 construction plans, and so forth -- (inaudible).

6 MR. O'KEEFE: Are you getting at, like, what kind of
7 operational conditions we'll put into the
8 permit?

9 MR. BURIL: Well, that, and also I'm just trying to
10 understand how much that work needs to go on before you can
11 issue the permit. It sounds like you're working on that,
12 but how much of that would fold into the 97-005 process?

13 MS. VECCHIO: Very little. Little to none.

14 MR. O'KEEFE: Well, basically, you know, this is sort
15 of a backward situation. But the treatment plan has been
16 designed to handle 200 PPB.

17 Is that correct, Ann?

18 MS. ASAVADIMOL: Yes.

19 MR. O'KEEFE: So we don't know for sure that that's
20 going to be the concentration that Lincoln Avenue receives.
21 But we're calling this sort of an interim solution to
22 prevent further migration.

23 So the permit is going to say, yeah, well, if the
24 levels reach above 200 PPB, you need to take it out of
25 service and reevaluate whether additional vessels needs to be

1 added, that sort of thing. So we'll kind of get some --

2 MS. VECCHIO: Or a change-out will occur more often.

3 MS. ASAVADIMOL: That's what is going to happen. From
talking to - (inaudible) --

4 MR. O'KEEFE: But we will have to at least address it
5 and re-evaluate whether the existing facility can handle
6 anything beyond that.

7 MS. VECCHIO: And be part of a final remedy for
8 Lincoln Avenue, since now the 97-005 has become regional
9 rather than Pasadena specific.

10 MR. SORSHER: Are you going to be using that new
11 Rohm and Haas resin?

12 MS. ASAVADIMOL: I'm not sure.

13 MR. FIELDS: Yes. PWA-2.

14 MR. SLATEN: Yeah. Give us the number again, Keith.

15 MR. FIELDS: It's the Amberlite PWA-2, Rohm and Haas.

16 MS. VECCHIO: Are you guys using the -- also the --
17 what is that thing that called that sits on top.

18 MR. SLATEN: Ractal (phonetic) distribution.

19 MS. VECCHIO: Ractal distribution?

20 MR. O'KEEFE: That's the --

21 MS. ASAVADIMOL: Vera, if we're going to submit the
22 application tomorrow, is that enough time for you to approve
23 (inaudible) July 1st?

24 MS. VECCHIO: No. Not July 1st.

25 UNIDENTIFIED SPEAKER: No. We haven't started with

1 CEQA.

2 MS. VECCHIO: No. There's no way. CEQA should have
3 been done at the beginning of June. After the last
4 meeting, when we talked about the billing and all the
5 requirements, CEQA was brought up at that time. It
6 should have been the done the day after.

7 MR. O'KEEFE: I think we talked about July 15th being
8 the target date for the operation.

9 MS. ASAVADIMOL: Okay.

10 MS. VECCHIO: But --

11 MR. O'KEEFE: That's still, really, a stretch but --

12 MS. VECCHIO: The actual draft document has to be done by
13 July 6th [inaudible]

14 MS. ASAVADIMOL: Okay.

15 MS. VECCHIO: And then equipment lead time, we might
16 be able to -- we might be able to get it done a little bit
17 earlier than that 15th day. But as I said, based upon
18 after that letter came out, which is three weeks ago now,
19 the ball should have been rolling immediately.

20 MS. ASAVADIMOL: We are working on that one.

21 MS. VECCHIO: And CEQA should have been the top
22 priority at that time.

23 MR. BURIL: Ann, are you planning to have the construction
24 plan, the operating plan, and all the other supporting
25 documentation submitted as well?

1 MS. ASAVADIMOL: Yes.

2 MR. FIELDS: When you say question CEQA, that means an
3 official initial study and the determination as to a
4 negative dec [declaration] or something that? It's not your
5 environmental information form.

6 MS. VECCHIO: No.

7 MR. FIELDS: Why is --

8 MR. O'KEEFE: I provided Ann with two forms; one was
9 the environmental information form, one which was an initial --

10 MR. FIELDS: Your checklist, initial study.

11 MR. O'KEEFE: And I gave her an example also because
12 it's not just fill in the blank check list.

13 MR. FIELDS: You gotta describe it.

14 MR. O'KEEFE: But there's some additional supporting
15 narrative required for each of the check boxes. So you
16 complete that, then we have certain paperwork that we will
17 be completing and filing it with the State clearinghouse.

18 MR. FIELDS: So you filed the negative dec or whatever?

19 MR. O'KEEFE: Correct.

20 MS. VECCHIO: It's typically a mitigated negative dec.

21 MS. FELLOWS: So the section that is environmentally
22 useful so it's a dec and then -- I forget the section number.

23 MS. VECCHIO: There are three that you can get. There
24 is a full-blown environmental impact report. There's a
25 negative dec. You can also have a subsection of that, which

1 is a mitigating negative dec, or you can get an
2 exemption. And the only way you get an exemption is if
3 you're replacing existing treatment, which is not the case
4 here. So you got two to choose from. You got the negative
5 dec or the full-blown EIR.

6 MS. FELLOWS: And under the negative dec, you have
7 about seven code sections or guidelines, regulatory
8 sections that you can choose from. I was wondering if the
9 applicable one is that it's environmentally consistent with
10 cleanup, or there is one that -- it's good for the
11 environment rather than bad so...

12 MR. SORSHER: We have to look at at a different solution.
13 It's hard to say from our hip, from the hip, to say what we can
14 do.

15 MS. FELLOWS: Of course. But since she had already
16 opened the door that it was typically a mitigated neg dec,
17 I was wondering if that's kind of the area to go.--

18 MS. VECCHIO: It probably does.

19 MR. RIPPERDA: So how close are you to having that
20 done, Ann?

21 MS. ASAVADIMOL: Me?

22 MR. RIPPERDA: Sounds like Keith --

23 MR. FIELDS: We met on Monday and talked about this.
24 We had a little -- some questions that are answered here
25 and that's technical reports first, and then we're going to

1 start CEQA, although what you're saying is you should have
2 done CEQA a few months ago, or something like that.

3 MS. VECCHIO: Well, actually --

4 MR. RIPPERDA: Few weeks ago.

5 MS. VECCHIO: Actually, after the phone call that we
6 had with Las Flores -- with Lincoln Avenue Water Company,
7 the next day the CEQA documentation should have been in
8 process. And that's just like the month of --

9 MS. FELLOWS: Talking about --

10 MR. FIELDS: It must have been a conversation between
11 you and Lincoln Avenue; right?

12 MS. VECCHIO: It was a phone conversation --

13 MR. FIELDS: That was the one that Heather Collins
14 led.

15 MR. O'KEEFE: You know, regardless, I mean, CEQA is
16 required for every treatment plan construction project for
17 a drinking water system, and every drinking water system
18 should be aware of that.

19 Pasadena has gone through this. They have an
20 internal -- they have a City Planning Office that does that
21 function. Altadena, being a private water utility, should
22 know that, you know, it's a requirement of DHS and, you
23 know, they should start talking to us early on because we
24 would most likely be the lead agency for their projects.
25 The exception would be if there was an airstrip

1 project or something like that, and AQMD might want to be
2 the lead agency because of the air emissions from the
3 air-stripper plant.

4 But, I mean, this is a routine requirement for
5 DHS, and all the water systems should be aware of that.
6 Regardless of, we're talking about this kind of
7 contamination, this plume. Regardless of that, they should
8 have been aware of that and, you know, they had plans to
9 construct something several months ago, and it could have
10 been initiated back then.

11 MR. SLATEN: Okay. We are where we are today. How
12 do we make the best out of it?

13 Keith, do you know what you need to do to try to
14 help as soon as possible?

15 MR. FIELDS: We get -- I mean, what we saw that DHS
16 provided Ann, you know, it's a checklist form. It's just a
17 CEQA initial study checklist type, and then you --

18 MR. O'KEEFE: I sent her a fax, too, so maybe --

19 MR. FIELDS: And then you fill out some details, you
20 fill out the de- -- you know, you kind of explain why you
21 would say it's no significant impact, or something like
22 that. And so it's just a matter of it looks like let's do
23 that next, get it done next week, and get it over to DHS.

24 MR. O'KEEFE: It's routine, but it's somewhat a pain
25 in the ass.

1 MR. FIELDS: Yeah. It's a pain.

2 MR. RIPPERDA: It almost sounds like, you know, next
3 week is even -- you know, this is late June. You're trying
4 to hit July 15. It doesn't sound like it's that hard a
5 checklist to follow, you know, if you can get it done this
6 week.

7 MR. O'KEEFE: Tomorrow is the end.

8 MR. RIPPERDA: I'm sorry. Today's Thursday. Early
9 next week, Keith.

10 MR. SLATEN: Yeah. Keith will be out working on the
11 airplane all tomorrow night. I won't let him sleep on the way
12 back.

13 MR. BURIL: I had one question, though. If my memory
14 serves me well, CEQA requires a 45-day public comment period.

15 MS. VECCHIO: That's what I just got through saying.
16 Basically, we are not allowed to issue a permit without the
17 CEQA being filed, the 45-day comment period, and then
18 getting a notice of determination there is no issues or
19 problems.

20 But what I'm saying is that what we're going to
21 do is we want the CEQA started. We want the process going.
22 Okay? We will issue the permit and when such time as this
23 45-day period is up and there are no comments from different
24 notices of determination, we will do change pages for
25 the permit that CEQA requirements have been complied with.

1 MR. BURIL: So you were essentially issuing an interim
2 permit?

3 MS. VECCHIO: No. It's going to be a permit, a permit
4 that says the CEQA documentation is in process, and then
5 when we get -- when the CEQA is completed, we do a change
6 page, we send it to the water system, say take that page out
7 and insert this page, that the CEQA documentation is
8 completed and it also becomes an attachment.

9 MR. O'KEEFE: We're bending the rules.

10 MS. VECCHIO: We're bending the rules.

11 MS. FELLOWS: Which they were trying not to.

12 MR. TAKARA: Ann, was there a building permit approved
13 for this project?

14 MS. ASAVADIMOL: Non-permitted.

15 MR. TAKARA: Non-permitted? It's a non-permitted item?

16 MS. ASAVADIMOL: I believe so.

17 MR. TAKARA: That's interesting. That's news to me.
18 A permit is required, and that time they will
19 tell you that you have to go through the CEQA process,
20 which means --

21 MR. SORSHER: Who would do a building permit?

22 MR. TAKARA: That's County; right? So they have to go
23 to the County. You might as well check into that.

24 Enough said.

25 MR. SLATEN: Yeah. Let's see what else -- what I have

1 next.

2 Yeah. Pretty picture. It is nice to see real
3 work going on.

4 Next.

5 MS. VECCHIO: It's not permitted.

6 MR. SLATEN: Okay. This is the revised approach.
7 First of all, onsite, instead of bringing water onsite and
8 to treat and reinject, onsite, what we do is take the OU-1
9 and beef it up, increase its capacity and increase its
10 capture of the chemicals nearer to the source area and the
11 chemicals in the higher concentrations and try to do a
12 better job of sort of creating a barrier to any further
13 migration of chemicals from the site towards the off-site.
14 Just a good idea. And under this new approach,
15 it gives us -- that's what the leg of it that NASA is going
16 to be directly responsible for. So we have the time and
17 the resources to actually do more on the site, while we
18 do -- what's new -- really new about this is supporting the
19 off-site treatment at the wellhead by the water companies.
20 So Bob is already out there working on his.

21 Then the idea is to take the Arroyo, refurbish
22 the well, then Well 52, and allow the City of Pasadena to
23 support building new treatment near the Windsor Well to a
24 7000 GPM system, which they can operate then the way they
25 need to, like the water company, that they need to operate

1 like. And probably keeping the existing VOC treatment
2 plant for the VOCs the way it's been done, but adding,
3 then, on the perchlorate treatment at the Windsor Well.

4 I have on my plate that I'm trying to get out is
5 a letter to the City of Pasadena which basically says
6 that's what NASA will do, is support and fund this new
7 system.

8 I also want to add to it that if something
9 happens and the City of Pasadena is unable to use the
10 system for any reason, instead of it sitting idle, they
11 will work with us to try to find something else to do with
12 the water, such as take it back to the spreading grounds or
13 ultimately, if necessary, letting us take it all the way
14 back to JPL for reinjection, if out in the future,
15 something happens that the City of Pasadena is not using
16 their system.

17 MR. BURIL: Steve?

18 MR. SLATEN: Yeah.

19 MR. BURIL: Do you have anything more in terms of this
20 expanded onsite system available as far as details of any kind?

21 MR. SLATEN: Absolutely not. It's all concepts now.
22 I mean, this is a new idea. I mean, we got to study it.
23 We will be studying it, really, the rest of this year.
24 Next year is when we'll be spending the big bucks to put it
25 in.

1 So no, we can't just go out and start poking
2 wells until -- this is a new idea. It hasn't been studied
3 yet. But the concept, I mean, is do more --

4 MR. BURIL: Concept is reasonable.

5 MR. SLATEN: -- do more onsite. Do more and better
6 onsite to keep from any further --

7 MR. BOMAN: So onsite, you're now talking instead of
8 250 GPM, 500 to 1000, maybe?

9 MR. SLATEN: I don't think it will be over 500,
10 because instead of now -- instead of now trying to suck up
11 a lot of water, what we're going to do is zero in and try
12 to capture and contain.

13 You don't need onsite, the way the
14 conditions are, I don't think we need a huge volume to
15 capture and contain. Zero in on where the chemicals are,
16 you know, screen right where chemicals are. We won't be
17 pumping clean water, so I'm betting -- I'm guessing we'll
18 be able to beef up the OU-1 system up around 400 GPM, and
19 it may suffice. Now, we'll know more as we study it.

20 MR. BOMAN: And so now you're talking of taking that
21 treated water and injecting it outside the plume and
22 downstream so --

23 MR. SLATEN: Once we get this system in and we've got
24 clean water, we can't -- we will need a place, then, to
25 dispose, to inject the clean water. And it looks like,

1 coming down to that corner -- if we can get outside the
2 plume, coming down to that corner with a smaller volume
3 might actually make kind of a nice curtain along the south
4 side of the plume. That's also theoretical.

5 MR. SORSHER: Those are injections?

6 MR. SLATEN: Those are injections on the bottom there.

7 MR. BOMAN: Oh, and so now, you'll create an area of
8 depression, so to speak.

9 MR. SLATEN: On plant, yes. Up in the middle where the
10 high --

11 I mean, ultimately, that's a good idea. I mean, at
12 first, we're reinjecting it all and kind of flushing. But
13 after you sort of get it flushed, then to pull that area down
14 and get more stuff coming towards the hot spot, if you will.

15 MR. BURIL: Keith, can you point to the extraction
16 versus the injection wells?

17 MR. FIELDS: These two are extraction; these three are
18 injection (indicating).

19 MR. SLATEN: Now, the new ones.

20 MS. FELLOWS: They actually have green versus yellow
21 inside it, but --

22 MR. FIELDS: Oh. Can't see it.

23 MR. BOMAN: What about in the hot spot?

24 MR. SLATEN: In the hot spot, we're starting now with
25 OU-1 as it's currently planned and the extraction of the

1 downhill, downgradient, and the rejection of uphill, upgradient.
2 That's what, you know, we are putting in right now and that's --

3 MR. BOMAN: I never liked that where you take the
4 water out and then inject it upstream of the plume so
5 you're not creating an area of depression, and it's just a
6 cycle.

7 MR. SLATEN: Not initially. Not initially, it is a cycle
8 and a flushing.

9 MS. ARTEAGA: It's essentially a closed loop.

10 MR. SLATEN: Hopefully, it's essentially a closed loop.
11 I've a whole presentation on OU-1 coming up when we get to it.

12 MR. SORSHER: I have a question on the little box --
13 the large box on the left, the second bullet, "Wellhead
14 treatment for Arroyo Well, 52."

15 I think I brought this up in comments on the
16 97-005. When you're saying "wellhead treatment," I
17 interpret that as an individual treatment on each well.

18 MR. SLATEN: I'm sorry. I use a generic term which
19 means before it goes, you know, into purveyance. It's
20 really a one treatment essentially --

21 MR. SORSHER: A centralized treatment.

22 MR. SLATEN: -- they all get piped to there.

23 MR. SORSHER: A centralized treatment.

24 MR. SLATEN: Right.

25 MR. RIPPERDA: If you just strike the word "wellhead" --

1 MR. SLATEN: Yeah. Off site or --

2 MR. SORSHER: Central treatment.

3 MR. BOMAN: If you look at this map, you know, where

4 Arroyo Well and Well 52 are, you know, we should move ahead

5 quickly on that.

6 MR. SLATEN: Yes.

7 MR. BOMAN: Really, that contains the plume even more than

8 the Lincoln Avenue site.

9 MR. SLATEN: I think we should move as quickly as we

10 can. So what I'm offering to do is work -- is give all the

11 support I can to the City of Pasadena, make the funding

12 available, and as soon as possible, start planning and

13 constructing and getting it ready to go.

14 In the meantime, in parallel, as quickly as we

15 can, we'll work the 97-005 process, and then hopefully

16 by -- I'm hoping by early next year, we've got stuff in

17 that's ready to work.

18 MR. BOMAN: And if Pasadena and Lincoln are pumping,

19 there is a good chance that Las Flores and Rubio won't

20 have anything.

21 MR. SLATEN: That's the hope -- that's the hope --

22 MR. BOMAN: So we should -- even though Pasadena

23 doesn't have a water supply issue, it's very important for

24 Pasadena to move ahead.

25 MR. SLATEN: You know, it's in all our best interests.

1 You have your water supply interests, and you have
2 costs that you are accruing because you can't pump those
3 wells and you're not being paid back for those costs right
4 now. And so it's in your interest, I think, to get these
5 wells online. You've a lot of good water up here that
6 you need to get to. It's very much in our interest to
7 get them on to keep the plume from migrating and start
8 pulling it back.

9 MR. BOMAN: I think, for Rubio and Las Flores, it's in
10 our interest to get these on to --

11 MR. SLATEN: Absolutely.

12 MR. RIPPERDA: Yeah. It certainly looks like, if
13 Lincoln Avenue doesn't start pumping pretty soon, that
14 Rubio and Las Flores would be impacted this season. It
15 just looks that way.

16 So everybody in the sub basin -- or everybody in
17 the basin owes DHS, you know, a huge thanks for being so
18 flexible in working with Lincoln Avenue to get this in as
19 soon as possible. DHS is really being great about this.

20 MR. BOMAN: So I guess what I'm getting to, hopefully,
21 they can be flexible with Pasadena too.

22 MR. RIPPERDA: Well, the difference is that --

23 MS. VECCHIO: Fast tracking.

24 MR. ZAIDI: You -- you and Jeff were talking, you
25 didn't hear what Mark said.

1 MS. VECCHIO: What did Mark say?

2 MR. RIPPERDA: I said what's DHS doing back there in
3 the corner?

4 MS. VECCHIO: We've got some other issues that we've
5 gotta get resolved.

6 MR. ZAIDI: But he was thanking DHS --

7 MR. RIPPERDA: Yeah. I was just saying that everybody
8 owes DHS a huge thanks for being so flexible.

9 MS. VECCHIO: Well, thank you.

10 I want to point -- I want to point out so you
11 guys don't start thinking about fast tracking over the City
12 of Pasadena, without going through the 97-005.

13 MR. RIPPERDA: Yeah.

14 MS. VECCHIO: And I'm going to say again, interim
15 measure blending only becomes an issue when treatment is --
16 it was overdesigned to remove high levels, that these were just
17 interim -- interim things until the 97-005.

18 MR. SLATEN: Right.

19 MR. BOMAN: We were just mentioning --

20 MS. VECCHIO: We don't want City of Pasadena coming to
21 us and saying, "Okay. We want to put treatment in," and
22 expecting that they are going to get approval because they
23 have other water supply available.

24 MR. SLATEN: All right.

25 MR. BOMAN: What I was trying to get at, if you look

1 at the plume, if Pasadena and Lincoln don't do their
2 part --

3 MS. VECCHIO: Right.

4 MR. BOMAN: -- we could affect Las Flores.

5 MS. VECCHIO: You're going to affect Las Flores and
6 Rubio.

7 MR. BOMAN: So there is a need to move as quickly as
8 possible.

9 MS. VECCHIO: Absolutely.

10 MR. SLATEN: So what we are committing to doing is
11 putting our resources and our time and our hearts behind
12 working with the City of Pasadena to, as quickly as
13 possible, get a system, start working it, work the 97-005
14 in parallel, do whatever we can to make that as soon as
15 possible.

16 I hope to beat that May deadline date that you
17 have of next year to have 97-005 finished. I will do
18 everything we can on our end to help make that happen. So
19 as soon as possible, Pasadena is also able to help with
20 this plume.

21 THE COURT REPORTER: Excuse me, Steve. I need a
22 moment to add paper.

23 MR. SLATEN: Okay. So everything we say now is, like,
24 off the record.

25 MR. SLATEN: Okay. All right. I would (inaudible)

1 said we should break, but let's try to plug on through
2 since we're going to be going soon.

3 What I have for my next slide, it's going to
4 bring up some more -- this -- I tried to put that in a
5 schedule.

6 MR. RIPPERDA: It's only going to take her a minute.

7 (Recess taken.)

8 MR. SLATEN: Okay. Next slide, I put up a schedule
9 comparison of the revised approach versus a previous
10 approach we were working on, and you can kind of see that
11 we're planning, for the middle of next year, to have the --
12 this is a Pasadena -- well, Bob's system, first of all,
13 shows up middle of 2004, is that kind of an initial
14 containment beneficial use up top.

15 And then the City of Pasadena will work
16 middle -- towards the middle of 2005, if not sooner, if we
17 can make it to get the City of Pasadena in at their big
18 system beneficial use.

19 If you compare that to the older sys- -- the
20 previous approach on the bottom where it was going to be
21 out sometime 2006, maybe later, until the big system was
22 totally in and supplying water back to the City of
23 Pasadena.

24 (Mr. Bob Hayward enters the room.)

25 MR. SLATEN: Hey, Bob.

1 MR. HAYWARD: Any questions -- internal operations as
2 far as regulatory compliance, County compliance?

3 MR. SLATEN: Yeah. We have had a discussion, and
4 maybe we should move back to it for a minute, if that's
5 okay with everybody.

6 The main talk -- one thing was about CEQA. We
7 went through a discussion about CEQA. The bottom line is
8 they want something from you now, and we're going to work
9 real quick to help get it in.

10 MR. HAYWARD: "They" meaning?

11 MS. FELLOWS: DHS. They are the lead agency for the
12 CEQA.

13 MR. HAYWARD: Okay. And the other issue?

14 MR. SLATEN: What was --

15 MR. RIPPERDA: Oh, the county permit was going to
16 get turned in tomorrow.

17 MR. HAYWARD: Permit application for --

18 MS. FELLOWS: For DHS.

19 MS. ASAVADIMOL: And (inaudible.)

20 MR. HAYWARD: Yes. Ladies and gentlemen, the private
21 company that operates Los Angeles County, we are not a
22 public agency. We are exempt. We are a water utility. We
23 are exempt from the type of work we're doing as
24 it relates to onsite water improvement.

25 I will provide anyone who needs a copy of that

1 exemption. You don't have it in the file.

2 As far as the CEQA issue was concerned, that was
3 another question that we addressed earlier. And again,
4 there was some confusion about interpretation of who we are
5 and what we do.

6 And Keith and I were going to do some research
7 before we got back to Jeff. And what it amounts to, it
8 involves, again, well exemption as to a private
9 water company operating in the County of Los Angeles
10 (inaudible).

11 MS. VECCHIO: No. There is no exemption for CEQA.

12 MR. HAYWARD: Well --

13 MS. VECCHIO: It doesn't matter what kind of utility
14 you are.

15 MR. HAYWARD: So Keith, we understand that now, right?.
16 That's not a problem.

17 Is there anything that anyone -- anything anyone
18 brought up about that will think about like timeline?

19 MR. BOMAN: The public comment period for CEQA --

20 MS. VECCHIO: Remember it's 45 days.

21 MS. FELLOWS: But that isn't the holdup. You
22 mentioned July 15th a few minutes ago.

23 MS. VECCHIO: Now we were just talking about when
24 we can get the permit document out.

25 MS. FELLOWS: He can start up before then?

1 MS. VECCHIO: Unfortunately --

2 MS. FELLOWS: Of course you sign up (inaudible).

3 MS. FELLOWS: "Start up," I said.

4 MS. VECCHIO: Can you start up before the permit is
5 issued? No.

6 MS. FELLOWS: Okay. So July 15th.

7 MS. VECCHIO: Unless we can expedite it and get it
8 done faster.

9 MR. O'KEEFE: I'm just reminding everyone, our
10 promise of certain documentation. Yes, and
11 that's critical.

12 MR. HAYWARD: Yes. We will -- we will use every
13 resource we have available at our disposal to expedite
14 anything that is required by DHS.

15 I would like to just mention that, the last
16 conference call, the one I participated in, it was made
17 very clear to Lincoln via telecon from DHS, and what I
18 gather was the entire sense of DHS staff that Lincoln gets
19 this plant up and get it up and running as fast as possible.
20 Everybody involved in that left that conference meeting
21 with that, those marching orders, and that's all we have
22 done since that time.

23 MS. VECCHIO: And we will do whatever we can to
24 expedite too. So -- but there are certain documents that
25 we need, and we have a time frame. We will try to get this

1 permit out as fast as we can.

2 MR. HAYWARD: I appreciate that, Vera.

3 And I apologize for not being here earlier and
4 come rushing in the door, and hearing, "Bob, we need that." it
5 wouldn't have been to be shocking news at this point.

6 MR. SLATEN: Yeah. And DHS people have to leave here
7 in about a little over five minutes so we had to get
8 started.

9 MR. HAYWARD: That could have been handled with a
10 telephone call, Steve.

11 MR. SLATEN: Was -- do we need to go back for anything
12 that -- anything else that Bob needs to hear? No? Okay.

13 MR. FIELDS: It would be worth -- you know, DHS
14 indicated that they would attempt to issue a permit saying
15 that the CEQA is in process, and then that would be done
16 concurrently. You may get a permit to operate. In CEQA,
17 the review period or whatever may not be complete yet. So
18 the CEQA as indicated was not going to hold up the permit.

19 MS. FELLOWS: Assuming so because --

20 MR. KEITH: Assuming -- you know, assuming that
21 progress is made.

22 MR. HAYWARD: Okay. But my point is, I mean, if there has
23 been a change in our marching orders, we need to talk about
24 it you know.

25 MS. VECCHIO: There is no change -

1 MR. HAYWARD: -- and not leave this room with
2 all that up in the air.

3 MS. VECCHIO: No change, Bob.

4 MR. SLATEN: Okay. That was the last one. Or was that
5 the last one?

6 MR. FIELDS: Yeah. I mean, you hit some of the last
7 points.

8 MS. FELLOWS: Would you look at the agenda and see if
9 there is something DHS wanted to touch on? Maybe we've
10 done it all. DHS letters and policy memo? I'm just giving
11 them a shot since we're going to lose them.

12 MR. SLATEN: Yeah. That's actually coming. I think
13 I've got a slide on -- do I have a slide on the -- let's
14 just hold on for just a second. Go back. Let me just go
15 ahead and work through this.

16 So revised approach? We'll provide technical
17 assistance to both Lincoln Avenue and City of Pasadena.
18 We'll work with them. We'll need to modify our existing
19 agreement to install a system, rehabilitate wells.

20 Then the last bullet is I want -- I need City of
21 Pasadena to pump a fair amount of water through that system
22 or work with us to use that system and do something else
23 with the water, if they had no need to pump water.

24 I can't imagine anytime in the near future the
25 City of Pasadena would not need to pump -- would not want

1 to pump those wells because it's in their best interest.
2 But in case anything happened and they couldn't pump them,
3 I still need that system to work in order to capture my
4 plume.

5 Next.

6 So the 97-005 documentation, we're expanding it
7 for the Monk Hill and to include all the water purveyors
8 out there. So we're getting information from different
9 water purveyors and working on the parts of that, and we'll
10 be submitting them. And I wanted to continue on that and
11 try to just keep it going and move in and not let it slow
12 down, and, as I say, try to beat, meet or beat that
13 May 2005 final date.

14 MR. BOMAN: Now, so that means Pasadena cannot start
15 up before 97-005; right?

16 MS. VECCHIO: Okay. You have to have the 97-005
17 document finalized. The permit has to be written. The
18 public hearing has to be held. And then, after that occurs,
19 then you get approval to put the treatment system in.

20 MR. BOMAN: And the --

21 MS ARTEAGA: To put it in or to turn it on?

22 MS. VECCHIO: To turn it on into service.

23 MR. SLATEN: So we intend to plan it, design it, and
24 start construction in parallel, knowing there may be some
25 risk, you know, about getting the permit. But I think -

1 I don't want to put them in series, or we'll be out another
2 year.

3 MS. VECCHIO: Well, I think that with the first couple
4 of sections, one of the things that has to be done is to
5 project what you think the highest concentration is going
6 to be and then, of course, the treatment system gets
7 designed accordingly. That's way up front.

8 MR. SLATEN: We're working on that. We've got a lot
9 of information, and we're working on that.

10 MS. VECCHIO: You've got a lot of information. You've
11 got -- and if you're able to predict with a certain amount
12 of confidence that that's what the concentration is going
13 to be, then fine. Then we're going to be okay with that.

14 MR. SLATEN: Okay. We're probably better off than
15 most people. We've got dozens of monitoring wells. We
16 know where the source is. We know where it's coming from.
17 We know it's got lots of history on the water --

18 MR. SORSHER: The RIFS for OU-1 and OU-3, they did --
19 Foster Wheeler in '99, they did an environmental
20 fate and transport and also -- actually, I think it's
21 Section 5 of their report.

22 They actually projected that contaminants
23 wouldn't really get to Well 20 in "X" number of years, as
24 long as the Arroyo and Well 52 kept pumping at the time
25 (indicating). But the thing is they do have the modeling

1 and all that projection.

2 MR. SLATEN: Yes. And we've got the ability. We do
3 more modeling every week on this stuff. So I think we can
4 turn in some really good documents.

5 Was that the end of it, Keith?

6 Oh, yeah --

7 MS. ARTEAGA: Steve, can you back up? When you say
8 "completed by 2005," you mean submit all the documentation?
9 That's not including time for all of DHS' review or it is?

10 MS. VECCHIO: No. We're saying that it has to be
11 finalized by May 2005.

12 MS. ARTEAGA: That's including the process?

13 MS. VECCHIO: So "final" means that you probably
14 need several months before that because there is a review
15 period, and then resubmittal so that we have a final
16 document by 2005.

17 MR. BURIL: So December of this year.

18 MR. SORSHER: Once they nail down what treatment
19 is going to be for the City, the City should start its
20 CEQA.

21 MS. VECCHIO: Right. Right.

22 MR. SLATEN: Sure. And the City has its own other
23 requirements it will be working on as well.

24 Okay. I think the next one is my last slide,
25 isn't it, Keith?

1 I tried to sum up what I saw in the letters that
2 went out from

3 MS. VECCHIO: Steve, can we go back to the previous
4 slide?

5 MR. SLATEN: Sure.

6 MS. VECCHIO: With the finalization of the document in
7 May 2005, that would then assume a public hearing in June
8 of 2005.

9 MR. SLATEN: Okay.

10 MS. VECCHIO: And also the permit also being written
11 simultaneously with 97-005, and all of the other public
12 hearing questions.

13 MR. SLATEN: Okay.

14 MS. VECCHIO: So with that being final, public hearing
15 in June, it's conceivable you could start up in June.
16 Okay? If you have a public hearing the first part of June.
17 Okay?

18 MR. RIPPERDA: If you're going to talk, you're going
19 to have to talk up.

20 MS. VECCHIO: Yeah, you're right. We can't have a
21 public hearing in June. It has to be July. Because you
22 have to have a 30-day comment period. It would have to be
23 July.

24 MR. SLATEN: Well, we'll need to -- to plan this
25 project, to manage this project, I'll need to understand

1 all -- we'll need to understand all those things and need
2 to put them down on a timeline and start working and
3 understand where our critical path, all that kind of stuff,
4 is.

5 My hope is we can do more stuff up front now and
6 move that forward. So we will be doing everything we can.
7 Every month -- it's in everybody's best interest, every
8 month we can shave off and get control on this plume, the
9 better off we all are.

10 So every time I move to the next slide, we get to
11 go back. Let's try it one more time.

12 I don't necessarily -- this was my understanding
13 of what the letter said from DHS. I don't know that we
14 really have to -- maybe at some time we ought to all agree
15 that this was said. But let me just quickly try to sum it
16 up.

17 I saw in the letters, kind of on the left, the
18 bullets are sort of the points that were made to the water
19 companies, to Lincoln Avenue, to Rubio Canyon, Las Flores,
20 about conservation, blending, use of other sources, and
21 treatment.

22 MS. VECCHIO: Public notice, public notification.

23 MR. SLATEN: Okay. I may not have captured everybody.
24 Yeah. Okay. They did talk about public notification.

25 MS. FELLOWS: (Inaudible) like lead off.

1 MR. SLATEN: Right. Okay. So that's another
2 important part of it.

3 I guess while we're on the right is kind of where
4 the rubber hits the road. It's, you know -- well, as long
5 as wells are less than six parts per billion, continue
6 monitoring. They go above 6, less than 18, suggest
7 conservation, use of other sources, and blending under
8 approved blending plan. And when they go greater than 18,
9 you recommend treatment, so...

10 MS. VECCHIO: That's an interim measure only. The
11 second bullet there is a 6 to 18 is an interim measure
12 only, with final remedy of treatment by removal.

13 MR. SLATEN: Okay.

14 MR. RIPPERDA: So that means Rubio Canyon or Las
15 Flores, if they're in that 6 to 18 range now -- I don't
16 know if they are --

17 MR. SLATEN: No.

18 MR. RIPPERDA: They're not yet? They're -- everything
19 down there is less than six?

20 MR. SLATEN: Yes.

21 MS. FELLOWS: But if they were, then --

22 MR. RIPPERDA: But if they go above six, they need
23 treatment. They can't blend as a final measure.

24 MS. VECCHIO: As a final measure. But we're hoping
25 with Lincoln Avenue, going full bore this summer, that

1 Las Flores and Rubio are going to be saved.

2 MR. SCHUMACHER: But we need them on line now.

3 MS. VECCHIO: Need on line a couple of months ago.

4 MR. SLATEN: I appreciate the fact that Bob is out
5 there working hard, doing stuff. We're going to try to do
6 everything we can to make that successful so -- and every
7 time we get together like this, it reminds me how important
8 communication is.

9 You know, we don't want to miss something. We
10 don't want to screw something up because we talked past
11 each other or whatever, so communication is vitally
12 important. So we'll do what we can, but it takes all of
13 us. If we need to have meetings face to face, you know,
14 we'll do what we can to help out so...

15 MR. ZAIDI: Steve, your conceptual assessment of the
16 system (inaudible) --

17 MR. SLATEN: --onsite OU-1.

18 MR. ZAIDI: I think we should discuss that also.

19 MR. SLATEN: Oh, there'll be lots of discussion on
20 that. There'll be plans. We're going to be working those
21 ideas here the rest of this year, basically.

22 MS. FELLOWS: Thank you, Vera.

23 (Ms. Vera Melnyk-Vecchio leaves the room.)

24 MR. SLATEN: That -- yes. Absolutely. That's just
25 the conceptual, the -- we don't do anything until you've

1 submitted a plan and had them approved.

2 MR. RIPPERDA: Do Alan and Jeff have to leave also, or
3 can you guys can stick around?

4 MR. O'KEEFE: How much more in your presentation,
5 Steve?

6 MR. SLATEN: That's it on OU-3. I've got an OU-1 --
7 some OU-1 slides.

8 MR. O'KEEFE: Unless Alan has anything to say, I think
9 I will take that as my cue to exit.

10 MR. SORSHER: Not much. You know, I'm still working
11 on the draft, which is now semi-obsolete. Since the scope
12 of --

13 MR. SLATEN: Most of 97-005. Yeah. We'll be working
14 with you to update those.

15 MR. SORSHER: -- change. But we did -- I did have
16 conversation with you and Keith on some general principles
17 of the raw water quality assessment.

18 I've also made some notes on the source water
19 assessment, how I've kind of -- actually, what I've done,
20 I'd like to get together with you again and talk in a
21 little bit more detail. I don't want to bore everybody to
22 death with it.

23 But, you know, I know you guys are real busy now
24 with the Lincoln Avenue situation, and I will be soon also.
25 So sometime in the near future, though, I would like to get

1 together with you and go over what I've come up with so
2 far, and eventually I still want to get some formal
3 comments back to you on that previous draft.

4 MR. KEITH: That would be great.

5 MR. SLATEN: I will finish up this part with my little
6 sermon.

7 The new approach has the potential -- the new
8 approach will work better, I think, for everybody. Serve
9 everybody's interests better, sooner, just I think it will
10 work better for everybody, but there's more pressure on
11 everybody to work together on the new approach. We're all
12 kind of, you know, in this thing together now.

13 The old approach, NASA could be by itself pretty
14 much and do stuff by itself. This new approach, we can't.
15 We are -- we have to work with you, and that means we all
16 have to work together. So that's my little speech, sermon
17 at the end.

18 So I think it will work better, but there's more
19 pressure on all of us to work together. It's going to take
20 more time and cooperation than the old approach.

21 We were going to break for lunch about now, and I
22 know nobody has had a break for a while so -- we didn't
23 bring in anything for lunch today.

24 What do we have still this afternoon?

25 MR. KEITH: Public relations, OU-1, and potentially

1 Tony.

2 MR. SLATEN: Yeah. Okay. So why don't we go get
3 lunch. Can people get lunch and be back in about half an
4 hour.

5 Okay. See people back here after 1:00.

6 (At 12:38 p.m., a luncheon recess was
7 taken, the meeting to be resumed
8 at 1:00 p.m.)

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AFTERNOON SESSION

(At 1:16 p.m. the meeting was resumed.)

MR. SLATEN: Okay. We've got a small intimate crowd now.

There was a nice article in the Pasadena Star News this morning, talking about Lincoln Avenue, to wait until treatment plant running, quotes from Bob and Steve Slaten, NASA's Remedial Project Manager, said he applauds Lincoln Avenue Water Company's initiative for taking responsibility. That's pretty good.

MS. FELLOWS: It is good.

And it was good that -- the whole thing was good. I mean, it was better than when we started. It was good.

Did you guys see the article?

MR. SCHUMACHER: I haven't.

MS. FELLOWS: Okay.

MR. SCHUMACHER: We were reading the paper over there too.

MS. FELLOWS: Yeah. Well, some people don't plan to read their papers.

(Inaudible) you want to go on to the --

MR. SLATEN: Sure. Why don't you --

MS. FELLOWS: Okay. We made a little truncated slide show of kind of what we've been learning in our multi-cultural outreach interviews because it's interesting. And as we go through it, we'll talk about who

1 we talked to and a little bit of what our early findings
2 are, but first we're going to just talk about kind of how
3 we've approached it.

4 So next slide. And Myrna and I are going to do
5 this together.

6 Just to remind everybody, the area we're in,
7 about 9500 residents within a mile of JPL, 44,000 within
8 three miles.

9 Go back. Oh, you have the auto one on still?

10 MR. FIELDS: No. I opened up the normal.

11 MS. FELLOWS: The manual one?

12 MR. FIELDS: That's the one. Let me check. Yeah.
13 That's the one I have. It's just -- somehow the seconds
14 are on that one too.

15 MS. FELLOWS: Oh, okay.

16 MR. FIELDS: Is there a way -- any way to --

17 MS. FELLOWS: Oh, wait. That was it.

18 MR. FIELDS: I wonder if it just does it for ones that
19 are selected.

20 MS. FELLOWS: I don't know. Anyway, you can
21 (inaudible).

22 MR. FIELDS: Sorry about that.

23 MS. FELLOWS: It won't matter. If it bounces ahead,
24 we'll talk real fast.

25 And one of the issues, of course, is income

1 distribution and health care.

2 And for the 39,000 uninsured, they're using the
3 Pasadena Unified School District, which includes all the
4 way over to Sierra Madre. So Sierra Madre, Altadena and
5 Pasadena, not La Canada, but -- because most of the poorer
6 population is nearer JPL, we figured that was a pretty good
7 proxy for -- at least to show a level of concern about the
8 lack of available health care, although the County -- the
9 Pasadena Department of Public Health and (inaudible) --

10 MS. GUTIERREZ: (Inaudible.)

11 MS. FELLOWS: -- Pasadena meets a lot of those needs.
12 And then just another context is that the Arroyo
13 Seco is an important environmental resource. So we have
14 the environmental groups as well.

15 You want to talk about that one?

16 MS. GUTIERREZ: Sure.

17 I know, Bob, you just came in. What we're doing
18 is an approach to the community outreach. And part of why
19 this is important is because it helps to put the community
20 involvement plan and to identify any environmental justice
21 issues, and also it builds a relationship with community
22 leaders who have a large constituency.

23 And as you will see, both Altadena and Pasadena,
24 over 50 percent of their populations are of some minority
25 with, of course, in Pasadena, Hispanic being the largest,

1 and in Altadena, African-Americans being -- well, white
2 non-Hispanics also are pretty large.

3 We have also been pinpointing smaller segments or
4 those isolated segments of the population that we don't
5 typically hear about, like the Armenian population. We
6 don't have the tangible data yet, but one of the leaders
7 told us it was up to 10 percent, that they qualified under
8 white, so they're not, you know, visible.

9 MS. FELLOWS: The census data doesn't show it up.

10 MR. HAYWARD: Myrna, comment.

11 When you talk in terms of the population, you
12 said this thing is residents -- residents; right?

13 MS. FELLOWS: Uh-huh.

14 MR. HAYWARD: Counting Altadena, Pasadena. People
15 think in terms of those numbers that's up there, you also
16 think in terms of the geographical boundaries that you're
17 drawing for, let's say for the community of Altadena.
18 They're not just talking West Altadena, Ladies and Gentlemen,
19 which is Fair Oaks Avenue to the Arroyo Seco. Altadena
20 is 42,000 people. She's talking the Arroyo Seco all the way
21 over until --

22 MS. FELLOWS: Right.

23 MR. HAYWARD: -- Allen.

24 MS. FELLOWS: Uh-huh. Yes.

25 MR. HAYWARD: Which, again, is not in our Superfund

1 site OU-1 operation.

2 MS. FELLOWS: That's right. And that's why we're just
3 using these as proxies to narrow it down.

4 Actually, go back to the other one.

5 One of the things, we have the African-American
6 in Altadena at 31.4 percent. One of the things that we're
7 discovering, we are not alone in discovering this, is that
8 there's a lot of home sales going for very high prices, and
9 the African-American population seems to be dropping quite
10 radically. And what that means to the economy is one
11 thing. What it means to us is looking at who is replacing
12 them, and does that change our targeting and emphasis on
13 translators, how we make our messages? So it's very
14 dynamic right now.

15 So one of the ways we start out is just
16 identifying stakeholders and start with the water
17 purveyors.

18 Next.

19 And this is just an example of Steve, in
20 realtime, explaining something to Phyllis Curry and
21 Joyce Streeter from the City of Pasadena, and to Myrna.
22 And then, of course, we look at other stakeholders, the
23 individual residents, JPL employees.

24 And you kind of lump them because they -- we want
25 to talk to somebody in each of these groups to see if they

1 can help us target -- or whether they have a medium by
2 which we can reach people or something like that.

3 Down in businesses, you see we talked about
4 barber shops and mortuaries, and one of the reason you put
5 mortuaries in there is you're not just trying to reach
6 people, but you're trying to reach people who can then
7 reach other people. And, yeah, everybody dies, but the
8 fact is that mortuaries, because they're big businesses in
9 towns, they're active in Kiwanis and Rotary and so forth,
10 so they're very active in the community. So if you can get
11 your message to them, they can help you get it further.

12 Do you want to say something about barber shops?
13 Not to their clients, but to their business colleagues.

14 MS. GUTIERREZ: Right. As we've been talking with
15 African-American leaders, we've identified barber shops as a
16 key site in which to channel communications, you know,
17 spreading the word of mouth, creating the buzz.

18 Mortuaries were also identified as key places.
19 And, of course, with the Hispanic and the African-American
20 communities, churches really stand high in the community, as
well .

21 MS. FELLOWS: And, actually, Steve and I gave a talk
22 to La Canada Flintridge City Council about three weeks ago,
23 Steve?

24 MR. SLATEN: Yes.

25 MS. FELLOWS: Okay.

1 MR. ZAIDI: What about the bars and restaurants? They
2 are not good places?

3 MS. FELLOWS: I think -- you know, I think we would
4 lump that under sort of doing some Rotary and Kiwanis
5 things in the future.

6 MR. SLATEN: Who is volunteering to go out to the
7 bars?

8 MS. FELLOWS: I'm doing research, honest. Why don't
9 you approve this expense report.

10 Notice who said that.

11 Another thing, sort of -- there's a lot of
12 distinctions between Altadena and Pasadena, and I have a
13 slide I didn't bring today that's got about 11 of those
14 distinctions. But one of the primary ones is that
15 Pasadena -- they're both active, but Pasadena is very
16 organized active --

17 And, Bob, if you disagree with some of this, you
18 know, we can always use more input.

19 MR. HAYWARD: Gee. More active. I mean, Altadena
20 would be the opposite of that --

21 MS. FELLOWS: No. No. I said more organized. What I
22 mean is like these neighborhood associations.

23 MR. HAYWARD: Less organized. I'm only teasing.

24 MS. FELLOWS: Don't you think? I mean, you've got a
25 handful there.

1 MS. GUTIERREZ: I think what she's saying is the
2 infrastructure for a lot of minority groups is a lot more
3 involved in Pasadena and in Altadena, specifically for the
4 Hispanic population, there isn't an infrastructure for
5 community organizations. So we have to go through existing
6 institutions like schools or churches versus a nonprofit
7 organization that we would typically go to in Pasadena.

8 MS. FELLOWS: Although we are going to visit NAACP.

9 MS. GUTIERREZ: I think the African-American
10 population is stronger infrastructure-wise in Altadena.

11 MR. HAYWARD: You went to the June meeting, I believe.

12 MS. FELLOWS: Which one?

13 MS. GUTIERREZ: June 22nd meeting for NAACP.

14 We were invited. We will be working with them on
15 going to meetings.

16 MS. FELLOWS: In fact, as we go through this, every
17 group we met with has offered to hold an event for us. The
18 ministers say that they'll mention it from their pulpits.
19 I don't come from a church like that so I can't imagine
20 hearing my minister saying "perchlorate" but -- so, you
21 know, I was pretty impressed by it.

22 A number of the local activists have their own TV
23 shows on the local cable access channel and have asked if
24 Steve could talk, and I said, "Oh, yeah. We could bring
25 him on for five to ten minutes."

1 "No, we'll make him the whole show."
2 So he's going to be Mr. Media Star here.
3 MS. GUTIERREZ: Star cable access.
4 MS. FELLOWS: I said, "Wait till you talk to Steve."
5 MR. ZAIDI: Pretty soon, Steve is going to be a talk
6 show host.
7 MR. SLATEN: I hear they make good money.
8 MS. FELLOWS: Not on cable access.
9 MR. SLATEN: Gotta start somewhere.
10 MS. FELLOWS: Next one.
11 Again, some community organizations.
12 MS. GUTIERREZ: Right. The way we identified
13 specifically the community leaders for the multi-cultural
14 audiences is a couple of things. We began to meet with
15 different groups, like neighborhood associations and
16 City of Pasadena, and they began to refer some names. And
17 also in January when we had the public meeting, we went out
18 into the streets canvassing with fliers and we met a lot of
19 people there, and based on some of those things and
20 referrals, we've been identifying some of these community
21 organizations with whom we've been meeting with, both
22 Hispanic, African-American, and this next week, we will be
23 meeting with Armenian and Asian.
24 MS. FELLOWS: And this isn't an exhausted list. This
25 is sort of to give a flavor of our approach.

1 MR. HAYWARD: Myrna, you might want to mention that
2 you helped Lincoln in drafting a Hispanic Spanish language
3 version of the public notification letter that's going out,
4 and we consider that to be something that we missed, and
5 you called and you helped us draft it. And so we can send
6 that one out also.

7 MS. GUTIERREZ: Right. Yes. We worked with Bob on
8 that because, again, especially with the Spanish-speaking
9 community, the access to information, they'll just read the
10 first paragraph and determine whether it's a crisis or not.
11 So we try to make it such at least in the last sentence
12 that they would know --

13 MS. FELLOWS: Okay. So this is just some of the
14 places that we've had some excellent conversations. And to
15 a person, they've been just really happy that we came.
16 This is the first time -- and poor Chuck has sat through
17 this thing already once before. They've been happy that
18 NASA is taking an interest and they -- to a person, they
19 have been just incredibly wonderful human beings, and --

20 MR. SLATEN: Did they really smile that much or did
21 you make them smile for the picture?

22 MS. FELLOWS: Oh, that was -- I was telling them a
23 joke.

24 Almost every one of the meetings, it's just been
25 so pleasant and I don't want to say lighthearted because

1 it's a serious subject, but really, just kind of great
2 human beings. And I was so fortunate to be in this job and
3 meet such a variety of people throughout Pasadena and
4 Altadena, and we have not had one grouchy rotten apple at
5 all.

6 MS. GUTIERREZ: The key is building relationships, and
7 that's really what we've been doing and we've been asking
8 the questions and being very informal and very relational.
9 Because, again, considering the fact that government
10 institutions really rank very, very low generally in terms
11 of trustworthiness, but in the minority communities, it's
12 even much lower. So it gives the project a face, it
13 personifies it, it makes it more approachable and, you
14 know, more accessible to them.

15 MS. FELLOWS: Just some more groups that we've met
16 with. And the ones that Myrna mentioned that we will be
17 meeting with this week and next week.

18 Next.

19 MS. GUTIERREZ: These are some of the trends we're
20 starting to see from the interviews. Once we've compiled
21 all the interviews, we will do an assessment, and then from
22 there, develop a plan on how to reach the multi-cultural
23 audiences and identify any environmental issues.

24 But to date, what we keep hearing in terms of
25 environmental issues in the Hispanic and African-American

1 communities, it ranks very low on the totem pole. They
2 have health issues, labor issues, immigration issues,
3 things that are survival oriented.

4 MS. FELLOWS: And trying to find a place to live.

5 MS. GUTIERREZ: Right. Rental -- rent is a big issue,
6 even with staff here, but --

7 MS. FELLOWS: And me.

8 MS. GUTIERREZ: And now Merrilee.

9 So those are things that are top on their radar
10 screen. However, it does go up on the radar screen when it
11 deals with health issues. And that's usually where it's
12 ranked. Environmental issues, both in Hispanic and
13 African-American communities, have been, "Well, if it
14 affects my health, then it becomes an issue."

15 Otherwise, someone told us, you know, it's so
16 complex, it's too difficult to get involved in, it's so
17 huge, that they choose to put their arms around those
18 things that are more tangible like school, education.

19 And, of course, one of the issues that we address
20 during our interviews is the attitude towards water
21 because, as we do our outreach, we want to make sure that
22 if there is no response on our materials, is it because
23 there's no, you know, interest in it or it is their
24 attitude towards water, or the environmental issues.

25 And we've been finding what we suspected from

1 early on and that's that with many of the minority
2 communities, particularly the Hispanic community, they tend
3 to drink bottled water, and they don't trust the tap water,
4 to begin with. So when we come out and say --

5 MS. FELLOWS: It has nothing to do with government or
6 NASA or anything.

7 MS. GUTIERREZ: Right. So when we come and say, "Your
8 water is safe to drink," it's a nonissue because they don't
9 believe that from the get-go, even before the perchlorate
10 issue arose. So those are some of the challenges that
11 we're identifying.

12 And the other issue, of course, is how do we
13 reach out to them, and we have discovered that they prefer
14 smaller group meetings, going to pre-existing meetings
15 versus coming to a general public meeting. That's why you
16 won't see many of the Spanish-speaking audiences at the big
17 public meetings that we've been holding. They prefer
18 smaller, more personalized face-to-face, and simpler
19 materials versus the technical, more in-depth materials
20 that we have to be what we call the actives.

21 MS. FELLOWS: Which goes to our next slide.

22 MS. GUTIERREZ: So what we did -- this is in draft
23 form right now. If you remember for our January public
24 meeting, we summarized the brochure. It was like a
25 three-page -- four-page brochure, and for the Hispanic

1 population, we summarized it into one page.

2 After our meetings with the Hispanic leaders, we
3 made it even simpler because many of these constituents
4 tend to be immigrants, lower school level education. And
5 so their children tend to be their informants. The
6 children tend to be the ones who clue them in to what's
7 happening the community.

8 So we've designed this in icon form that's
9 visual -- visually heavy to draw them into very simple
10 content. And, that way, both the children and the parents,
11 you know, can sort of use it. We can use it for school
12 fairs, health festivals, you know, different community
13 events throughout Altadena and Pasadena.

14 And in the Hispanic community, one of the popular
15 things that I grew up with was called the "foto novela,"
16 which is sort of like -- it looks like a comic book. It's
17 visuals with little, you know, phrases, and it's like a
18 little soap opera, but in visual form. So this is how
19 that's based. And this just a draft form. We still need
20 to rework some things, but we wanted to share with you some
21 of the things that we're doing specifically to reach out to
22 Spanish language immigrant community.

23 These are some of the other elements that we've
24 been finding in our interviews, once again, discussed the
25 government. You know, in more of the mainstream

1 communities, it's skepticism, health concerns.

2 We haven't really found so much as an awareness
3 about this whole Superfund issue in the minority
4 communities. It hasn't been like it is in the public
5 meetings -- that's not, again, on their front page -- as
6 much as it has been for others.

7 So we have to remember that, as we reach out
8 during the public meetings or in between the public
9 meetings, that some people, while they may be interested,
10 are not the actives that are going to go to these public
11 meetings and seek out the information, but it is still our
12 responsibility to communicate to them.

13 MS. FELLOWS: Well, we're using this picture because
14 it's got a water dispenser out front that you have to pay
15 for, so we're highlighting the fact that the Hispanics buy
16 water, filtered water.

17 MR. SLATEN: And were you going to say it's hooked
18 up to the little hose goes there to the water faucet,
19 probably has Lincoln Avenue Water Company coming out of it.

20 MS. FELLOWS: And actually, we talked to an
21 African-American, Celeste Walker, at "Neighbors Acting Together
22 Helping Others" the other day, and she was talking about her
23 constituency of Hispanics that do buy the bottled water.
24 And she goes, "And they come up in the truck and
25 they go to these things and they load up their big vats,"

1 and she says, "And that's stupid because it connects right
2 in the back to the regular water, and it just goes through
3 a filter." She says, "Maybe it makes it taste better, but,
4 you know, why pay for that?"

5 You know, she had at least a number on this
6 but --

7 MS. GUTIERREZ: So, as you see, as we try to
8 communicate this whole cleanup process, we have to deal
9 with the challenges that are pre-existing before this ever
10 happened.

11 MS. FELLOWS: Yeah.

12 MR. RIPPERDA: So you're going to put ion exchange
13 resins in all those little --

14 MS. FELLOWS: No. Because there won't be any
15 perchlorate in the water.

16 MR. RIPPERDA: No. Before July 15th.

17 MS. FELLOWS: Oh, I see.

18 MS. GUTIERREZ: And I think this quote just summarizes
19 what we've been talking about-- about how environmental
20 issues rank in their agendas.

21 And one community liaison from Madison School
22 who -- Madison School is probably one of the poorest
23 schools in Pasadena -- said, "You know, I'll be honest with
24 you. I have a waiting list of families whose kids need
25 shoes before they can come to school." Their issue is not

1 a priority. For them, it's collecting shoes.

2 MS. FELLOWS: I have this whole pile of shoes in my
3 car now to take over 'cause I thought -- I mean, I'm about
4 a kid's size in my shoes," so if I have a closet of all
5 these shoes and --

6 MR. BURIL: Leaves me out.

7 MS. FELLOWS: What?

8 MR. BURIL: I said it leaves me out.

9 MS. FELLOWS: Well, they have big kids too, I think.

10 MS. ASAVADIMOL: Let me know. I have plenty.

11 MS. FELLOWS: Okay. I'll come by and pick them up.
12 I'll give you a week or so.

13 That one we sort of discussed.

14 Just to underscore the health meeting again. And
15 just some more kind of rules that we're working to keep the
16 public well informed; have meetings, new letters, fax
17 sheets, media coverage, which occurs in spite of ourselves,
18 actually. But where we have news that we need to share,
19 we're using that vehicle too.

20 Next.

21 There you are, Mohammed.

22 MR. ZAIDI: Yes.

23 MS. FELLOWS: Meeting with our stakeholders and trying
24 to NASA brand both in working with the public and with our
25 own purveyors and then offering tours.

1 Next.

2 Here, this is a picture of two of our displays at
3 the JPL annual open house. That's just one example of the
4 types of places we'll be going to. And, of course, the web
5 site, which is how it looks currently. And that's it.

6 MR. FIELDS: Won't look like that for long.

7 MR. RIPPERDA: So, what about the horse stakeholders?

8 MS. FELLOWS: Well, I talked to the horse stakeholder,
9 and the vet, and the person who runs the stable are off at
10 horse shows, and I'm going to talk to one of them tomorrow.
11 And I talked to one of them and she is -- she's also -- this
12 is Marietta -- she's also talked to Bob. But it was a pretty
13 reasonable conversation.

14 You know, they have concerns, and they don't
15 really know where to go with them. And one of the things
16 that's troubling is that the horses -- well, a couple of
17 things.

18 The horses are said to have Cushing syndrome,
19 which Dr. Mack, the guy that spoke at the health meeting,
20 say it's not related to the thyroid. Now, he admits he's
21 not a vet, and I haven't checked with a vet. But, you
22 know, they're saying it's a thyroid problem maybe because
23 they know perchlorate is related to thyroid, or maybe just
24 'cause they're worried and they think it is.

25 But if it isn't, then, you know, I don't know

1 kind of how to answer. I mean, I'm not a vet, you know.

2 But I am going to talk to them some more.

3 MR. RIPPERDA: You guys are doing a ton.

4 MR. ZAIDI: I think they're overdoing it.

5 MS. FELLOWS: Really?

6 MR. ZAIDI: In my opinion, if you want to educate all
7 these 46,000 or 400,000 people here, it will be an enormous
8 task. The level -- I mean, even the college graduates will
9 have a hard time understanding all these environmental
10 concepts. And those people you are trying to address
11 are -- they don't have probably -- I mean, many of them
12 might have high school, but not above. So it will be very
13 hard for them to --

14 MS. FELLOWS: We're not trying to teach them about
15 vadose zones and wellhead treatment. We're trying to teach
16 them that their water is safe, and that if they have
17 concerns about it, they can talk to Pasadena or to Bob or
18 to us, we we'll find a level that we can talk. You know,
19 we just want them to know that if they hear an issue and
20 they get scared, they should come to us, and we'll --
21 hopefully, we'll re-assure them.

22 MR. SLATEN: Instead of to the attorney.

23 MS. GUTIERREZ: Yeah. Right. And the people that
24 we're talking to are sort of --

25 (Bob Hayward leaves the room.)

1 MS. GUTIERREZ: -- are the people that these people
2 are going to go to.

3 MR. ZAIDI: Oh, okay.

4 MS. GUTIERREZ: Okay. These are the leaders, like the
5 teachers, the priests, and if there's going to be a concern,
6 they're not going to call NASA. They're not going to call
7 the water company. They're going to go to their trusted
8 leader. And so, as we educate them, then they can be that
9 channel. And if there's something going on there, then
10 they can alert us.

11 MR. ZAIDI: Yeah. That is good.

12 MS. FELLOWS: The other thing is that we're nearing
13 the end of the interviews. This is really gathering data,
14 and then Myrna is going to devise a plan for targeting, you
15 know, what kinds of materials, what level do you stake them
16 at. If it's for Hispanics that don't drink the water, do
17 you stress washing vegetables.

18 So it's really to help us devise this plan. That
19 would be part of our community involvement plan that we
20 will be doing right now too.

21 Richard, can you turn the thing, because the
22 light off that car is blinding me.

23 MR. COFFMAN: Sure.

24 MS. FELLOWS: Any questions, comments from our vast --
25 Chuck has already talked to me about his. Good. Thanks.

1 Thinks we're doing a good job.

2 MR. FIELDS: Ready for OU-1?

3 MR. SLATEN: Sure. OU-1. Something -- you want to
4 start, or do you want me -- okay.

5 MR. FIELDS: I mean, I'll be glad to talk.

6 MR. SLATEN: Go to the next slide.

7 MR. FIELDS: Okay.

8 MR. SLATEN: One of the interesting things happened
9 lately and kind of rolls into a couple of things I'm
10 going to talk about the schedule is we were talking about
11 putting the treatment plant. We were talking about
12 putting it kind of on the south edge of this parking
13 lot because of the OU-3 plant was going to have to
14 take up the north end of the parking lot. We ran
15 into problems.

16 Does the next slide show the picture?

17 Okay. Yeah. This is what gave us problems.

18 This is at the south end of the parking lot.

19 So up in the parking lot is where we're going to
20 be. And there's this wall, and there's, you know, fill
21 that -- questionable compaction, and we were just looking
22 at some major geotechnical work to make sure that the pad
23 would be okay, you know, next to this slope in the parking
24 lot.

25 So -- and now since OU-3 is going to be off-site,

1 we're going to move the OU-1 treatment plant to a better
2 location within the parking lot. So that's the new plan.
3 So we've been going around with that for some weeks now to
4 try to get that figured out, you know.

5 We're thinking about moving it way up into
6 the north end and packing it up next to the upper end, but
7 then there were issues with the slope up there and some
8 things. So I think we've now pretty much got a good
9 location to put it, which will work for everybody's needs
10 there.

11 So that's where -- and that's -- okay. So
12 aquifer testing. This is for the wells.

13 We've gone in and done aquifer testing and slug
14 and bale tests. You know, got information on hydraulic
15 conductivity, which you can see for yourself, and the pump
16 tests with the 150 GPM, and you can monitor it in the
17 nearby wells. We have the draw down, which gives us some
18 information. And we got the hydraulic conductivity, which
19 gives us some better information.

20 All of this is within -- within the range of what
21 we expected to see. No great surprises here.

22 Next.

23 MR. FIELDS: Particularly, the slug bale is very
24 similar to what they had before, and then the pump test,
25 according to our hydro geologist, it's not uncommon to see a

1 difference in your hydraulic conductivity between your slug and
2 your pump test of that magnitude.

3 But those are the ranges that we're --

4 MR. ZAIDI: And what was the (inaudible)?

5 MR. FIELDS: Next slide.

6 MR. SLATEN: Now, what's interesting about this, and
7 this is the -- on the left is the -- is our modeling with
8 the old -- with the -- with -- our guess is at what the
9 hydraulic conductivity was. So it's the old model.

10 On the right, since the hydraulic conductivity is
11 greater, I mean, the movement is faster, we have more of a
12 direct pathway than what we had originally modeled with our
13 assumption data. And so on the right, we have more of a
14 direct pathway from the injection to extraction. But still
15 within the realm, sort of, of what -- within the realm of
16 what we expected.

17 In one way, it's good, because we -- there's more
18 of a flushing going on. Less sort of spreading out from
19 the area that you want to be -- injection to move back
20 to --

21 MR. ZAIDI: What's the radius of influence here?

22 MR. FIELDS: If you go across this whole span on -- I
23 did that the other day. I used a laser pointer, actually,
24 at my computer screen. And people were like, "We can't see
25 what you're doing." I'm sorry.

1 This point to this point is, let's say, 2600
2 feet. This point to this point is 18- or 1900 feet.

3 MR. ZAIDI: No. But the radius of influence would be
4 for each realm. So each realm is about one fourth of that,
5 right?

6 MR. SLATEN: Yes.

7 MR. FIELDS: I mean, you know, what we're looking at
8 is creating this loop so --

9 MR. ZAIDI: What the influence, what, did you say 1900
10 or 1800 before?

11 MR. FIELDS: Yeah. From there to there was, I think,
12 18- to 1900.

13 MR. ZAIDI: Are you talking about 400 and -- it would
14 be, like, 200 for each well.

15 MR. FIELDS: Okay.

16 MR. ZAIDI: The radius. Because 400 is --

17 MR. FIELDS: But it's not a radius in the sense
18 because we're creating this gradient. So it's sort of a
19 circulation. It's not like a typical extraction and you
20 have a cone. It's going to be --

21 MR. SLATEN: It's stretched out.

22 MR. FIELDS: What we're looking at is particle
23 movement. This is what --

24 MR. ZAIDI: I know. Because we have four wells all
25 set together in this condition.

1 MR. FIELDS: Okay.

2 MR. ZAIDI: Under these circumstances, when there are
3 four wells simultaneously extracting, yes. That time, this
4 is the extent of the influence. But as a result of the
5 pump test, come up with only one well. That's the basic
6 element. Now you have combined four elements there.

7 MR. FIELDS: Well, what we came up with from the pump
8 test was a hydraulic conductivity. And so what -- you
9 know, so instead of doing something more abstract about a
10 radius of influence, we then just plugged it back into our
11 model and updated that to see what difference.

12 MR. RIPPERDA: Let's go back a slide for a second.

13 Even though they didn't calculate a radius of
14 influence, you can see right there that, you know, 160 feet
15 away, at eight-hour test, they saw .7.

16 MR. ZAIDI: .7, yeah. That's what I'm saying. Yes.
17 So .7.

18 MR. BURIL: Steve, have you taken a look at the
19 possibility that you have somehow tapped into a confined
20 system? 'Cause that what it looks like.

21 MR. SLATEN: We've got a slide on that.

22 MR. COFFMAN: Back on the other diagram, the 22-foot
23 per day, I presume, then, that the top part of that, water
24 was actually flowing to the north away from the system?

25 Is that what that's showing, or are you -

1 MR. FIELDS: That's showing that -- yeah, there are
2 some particles that would actually -- at least during this
3 duration were (inaudible).

4 MR. COFFMAN: That's presuming that the top wells are
5 injection and the bottom part is --

6 MR. FIELDS: Yes.

7 MR. COFFMAN: -- your extraction; right.

8 So you're actually losing water out of this
9 system. It wasn't a closed loop, but rather, your
10 injecting was actually going out, leading away from the
11 site.

12 MR. FIELDS: I would say that in general, yes, there
13 could be some particles that are pushed out, and you can
14 see, over on this side, and there are some particles that
15 may get past, but we're talking about, you know, according
16 to our hydro geologist, a small percentage.

17 And even if particles -- so it's a very small
18 percentage, and even if particles do get pushed out or
19 escape, they're clean. I mean, we've cleaned them up. And
20 certainly we're no worse off than a particle just
21 traveling. You know, at least it's a clean particle now
22 instead of a particle from the source area.

23 So we want to keep that loop going. We want to
24 induce the flushing, we want to make sure that we're doing
25 the best job that we can. But if there is some losses,

1 we're not too concerned about that, as long as we're not
2 pushing things away. That's what our monitoring,, you
3 know, when we're doing our system will be telling us.

4 MR. ZAIDI: Can we go back to that slide again?
5 The well is 90 feet, I think on that slide, the one
6 before you have the draw down --

7 MR. FIELDS: Yes. The draw down in the extraction
8 level (inaudible).

9 MR. ZAIDI: And in the farthest well, you had
10 (inaudible); right?

11 MR. FIELDS: Yeah. That was -- you know, that wasn't
12 our furthest well. That was our next -- one of the next --

13 MR. ZAIDI: Okay, yeah.

14 MR. FIELDS: Yeah. That's .7 feet in that one.

15 MR. ZAIDI: Okay.

16 MR. FIELDS: So interestingly, what we -- we started
17 to question some of the -- you know, that hydraulic
18 conductivity and, you know, some of the results we had from
19 that and draw down. We started to wonder a little bit
20 about some of the details here.

21 So our geologist looked at old logs, looked at
22 the geophysical logging that was done during the
23 installation of the extraction wells, injection wells,
24 looked at the lithology that was identified during the
25 sonic drilling of the IRZ wells, and it does appear that

1 there is some sort of a leaky semi-continuous 5 to 20-foot
2 thick clay silty sand.

3 And it's not -- you know, particularly when they
4 were drilling with the mud, you almost would miss it. But,
5 you know, as they tried to put everything together, it
6 looks like there may be some sort of a semi-confining --
7 certainly, it's not continuous. It's sort of leaky, but
8 there's something there, and it's of interest. And I think
9 it should be -- you know, it's something that we'll want to
10 monitor for and understand that that possibility is there.

11 But then, I think what we observed here, you
12 know, our objective, our end objective is to extract the
13 most mass of perchlorate and carbon tetrachloride we can.
14 And we did get some analytical results from our -- when we
15 purged these wells before we sent it off for disposal.

16 I mean, these are two extraction wells. They're
17 kind of -- the one is definitely below that clay silt, and
18 then the other one is -- sort of straddles it. So what we
19 have is -- we do have, you know, 6.6 milligrams per liter
20 perchlorate, 48 PPB of carbon tet, 2.2 milligrams per liter
21 of perchlorate, 31 micrograms per liter of carbon tet.

22 So based on this data, we do feel like the wells
23 are located appropriately for extracting mass of
24 perchlorate and carbon tetrachloride. So I think it's
25 something we want to watch. It's something we want to

1 understand, that it may have some impact on point injection
2 and how that -- some of the movement, and realize that some
3 of our wells, like MW-7, straddle that zone.

4 MR. RIPPERDA: Can you go back to the loop.

5 So where is MW-3 and MW-7 within these cells?

6 MR. FIELDS: 7 is like right here (indicating).

7 IRZ-3 is right next to it.

8 MR. RIPPERDA: Okay.

9 MR. FIELDS: The IRZ injection well is right up next
10 to this one. And then MW-24 is over here (indicating). So
11 the cross-section is kind of like this, that we're looking
12 at.

13 So I think, you know, continuing on, the thought
14 that this is an expanded treatability study, there will be
15 some things we want to look at. And I think some -- you
16 know, some of the information we gained as a result of this
17 pilot test or this pumping test is going to -- may help us
18 understand some of our initial results.

19 MR. ZAIDI: Hydraulic conductivity is higher above
20 this clay sand or silty sand -- above and below this clay
21 sand and silty sand? And you might have some mounding when
22 that you inject.

23 MR. FIELDS: Yep.

24 MR. ZAIDI: And that might take some time to
25 dissipate.

1 MR. FIELDS: Yeah. I would think that --

2 MR. ZAIDI: The injection well, I think it will be
3 good if you can go below this layer and start screening
4 well there. But you already have.

5 MR. FIELDS: Yeah. It's crowded across there,
6 fortunately, and, there'll be -- you know, eventually, it
7 will mound up to a level where the path of least resistance
8 is to push it into this lower -- the area of the aquifer,
9 below that semi-confining unit.

10 MR. ZAIDI: But since it is -- the screen is also
11 below the silty sand, it's okay.

12 MR. BURIL: I'm confused about your nomenclature IRSD,
13 MW-3.

14 MR. FIELDS: The one that Arcadis put in, so in-situ
15 reactive zones, which was their pilot study, and so they
16 put in an injection well or some sort of a monitoring well
17 associated with their IRZ treatment.

18 So what we use there -- they did -- they did the
19 sonic drilling. So they had some very nice -- you know,
20 very good lithologic interpretations that we utilized when
21 we developed this cross-section.

22 Any questions on this?

23 And what we think, you know, obviously, the
24 hydraulic conductivity down here is higher than this silty
25 sand above it. So we think that has something to do with

1 the results we observed, although, according to our
2 modelers, the results matched an unconfined aquifer better
3 than a leaky aquifer.

4 So I don't want to -- I probably shouldn't have
5 mentioned that, because you may have questions that I don't
6 know. But they did some modeling, and you tried to match
7 the results to different models that intentionally represent
8 some different types of aquifer conditions. And the best match
9 was for an unconfined, but we also looked at a leaky --

10 MR. ZAIDI: Because of the (inaudible) might be that
11 of an unconfined aquifer because this really does not
12 100 percent count as a kind of aquitard or something
13 like that because it's still a sand. It's still permeable.
14 Although, it's less permeable than the coarse sand which is
15 in (inaudible). It doesn't have much silt or clay. But it's
16 slightly tardant (phonetic). That's all.

17 MR. FIELDS: Makes sense.

18 MR. ZAIDI: But it's still unconfined. (Inaudible)
19 might someplace locally semi-confined.

20 MR. FIELDS: And so that -- there is going to be a
21 report that comes out summarizing all this, including this
22 cross-section, in the near future.

23 Now, one thing that it is important to point out
24 is that we underestimated the amount of time to finalize
25 our civil design drawings. And then we -- this -- that set

1 us back probably a month.

2 We also have been going around, like Steven
3 indicated, on the geotechnical issues in locating this
4 plant, and so now we had a meeting last week with Caltech.
5 I think we have that resolved with the location of the
6 facility. However, that does require some additional
7 changes to the civil design, which were initiated last
8 week.

9 Towards the end of this month and then early
10 July, we get into sort of a black-out date for any
11 construction activity on the facilities.

12 What's that as a result of, Chuck?

13 MR. BURIL: That's our Saturn probe called Cassini.
14 It's going into Saturn orbit. Billion and a half dollar
15 mission.

16 MR. SLATEN: (Inaudible) Construction can commence on
17 what date?

18 MR. FIELDS: 7/12. So we pushed back our pad
19 construction, which is the next item that needs to be
20 occurring.

21 So between now and 7/12, we're going to finalize
22 the design drawings. We'll work with Chuck, continue to
23 work with Chuck. We had -- our last meeting, which was
24 last week, we had our construction contractor, which is
25 R.C. Foster, come in and went through some of the

1 logistical details of getting cranes on the facility and
2 all these different things that they're going to have to
3 do.

4 So we're making progress; however, there's been
5 some slowdowns in the design, civil design, and then also
6 in some geophysical issues that came up, instability of
7 that, the foundation and particularly with regard to the
8 retaining wall. So now we're pushed back probably -- what
9 we're projecting now is four months on the -- until we
10 start up. So we were looking at startup in July. Now,
11 we're looking at startup in October, November.

12 MR. SLATEN: What are the black-out dates?

13 MR. BURIL: Basically, from today through July 10th, I
14 believe it was.

15 MR. SLATEN: 12th is what?

16 MR. BURIL: So they're targeting the 12th, which is a
17 Monday.

18 MR. RIPPERDA: Do you guys not need building permits?

19 MR. BURIL: No, we don't. We are a federal preserve.

20 MR. FIELDS: But it's not -- it's a fairly rigorous
21 review, certainly by Caltech.

22 MR. BURIL: We're required, under our contract, to
23 basically comply with the most stringent of applicable
24 codes if we were not a federal facility. So that's where
25 we're at as far as looking at what Battelle is doing. We

1 compare it to what our design standards are and meet those
2 most rigorous codes and work with them from that standpoint.

3 MS. FELLOWS: So it's sort of like self-compliance?

4 MR. BURIL: We're -- we can -- we can do less, so to
5 speak, but NASA won't let us.

6 MR. FIELDS: So we run into some of that -- do less,
7 not able to do less.

8 But, you know, we're -- we've never constructed
9 anything on JPL facility, but we did get a civil
10 contractor, who is also a Caltech civil contractor. We're
11 working with construction firms. We're trying -- we're
12 doing the best job we can to minimize those difficulties.
13 But, you know, still there are uncertainties with any
14 design and implementation process; there's tweaks and
15 hangups and things that you didn't expect.

16 MR. BURIL: Got a few snags but --

17 MR. FIELDS: Yeah. We keep making progress.

18 MR. ZAIDI: I think this (inaudible) was extremely
19 useful because. It's changed the hydraulic connectivity from
20 28 -- 22 feet per day to about 100 feet per day, which is
21 significant.

22 MR. FIELDS: Yeah. And I think it's good. I think
23 it's really good that we have this understanding, a better
24 understanding of maybe some sort of a semi-confining unit.
25 I'm glad that -- I don't think at this point it changes our

1 design.

2 MR. ZAIDI: No.

3 MR. FIELDS: I think our treatability study would
4 work. It may change our design in the future for how many
5 wells we need to get containment of a different area so,
6 yes, definitely very useful.

7 MR. RIPPERDA: Thanks, Mohammed.

8 MR. ZAIDI: All right. Here to serve the public.

9 MR. FIELDS: Here to serve; right.

10 MR. RIPPERDA: I work for the government. I'm here to
11 help.

12 MR. ZAIDI: Yeah. This hydraulic conductivity was not
13 (inaudible), because when I saw (inaudible), they are
14 pretty (inaudible) and not matching with that so...

15 MR. SLATEN: Anything else about OU-1?

16 MR. ZAIDI: So approximate date of this report will be
17 what?

18 MR. FIELDS: I have a draft of it that I need to get
19 to Steve.

20 MR. ZAIDI: So about a week? Three weeks?

21 MR. FIELDS: Aquifer testing summary.

22 MR. RIPPERDA: So how is the conventional -- you just
23 moved the treatment location -- I'm sorry. Was that the
24 answer to the question you wanted?

25 MR. ZAIDI: Yeah. Yeah.

1 MR. RIPPERDA: I didn't want to jump in.

2 By moving the treatment location to the north,
3 how is that going to impact when you drill your two
4 additional plus or minus extraction wells? Will you just
5 use that same site and beef it up a little bit, or are you
6 going to build another treatment plant?

7 MR. SLATEN: Are you talking about out in the kind of
8 next phase?

9 MR. RIPPERDA: Right. Next phase.

10 MR. SLATEN: Doesn't really make any difference.
11 We'll -- you know, there is more room now kind of all
12 around us to add on reactors, I guess, when it gets to that
13 point.

14 MR. RIPPERDA: Because you're thinking 400, and maybe
15 it's 5- or 600 gallons a minute, you'll be able to just
16 beef up that one rather than having to build a whole new
17 one like you're going to have to handle 4,000 gallons a
18 minute?

19 MR. SLATEN: Right.

20 MR. RIPPERDA: Okay.

21 MR. SLATEN: Yes.

22 MR. FIELDS: Hoping for.

23 MR. SLATEN: Yeah. It's kind of -- it's expandable, I
24 guess you would say.

25 MR. RIPPERDA: On that order of magnitude?

1 MR. SLATEN: Right.

2 MR. RIPPERDA: At that point, if it's determined that
3 that closed loop reinjection plan is not optimal and you
4 would rather be injecting, you know, down at the bottom,
5 you can just redirect the water and --

6 MR. SLATEN: We keep the plant here and, you know, run
7 the piping to the other extraction reinjection.

8 MR. FIELDS: I think -- I think we want to carefully
9 consider, not only -- you know, we have Phase 1 that we're
10 doing right now of our ETS. We have this parallel Phase 2,
11 you know, like a similar system right to the west of it.
12 And we're talking about an additional extraction well sort
13 of closer to the boundary.

14 I think we want to look at all of that together
15 and determine if Phase 2 should go forward as we've been
16 proposing or if we need to -- I think we want to rethink
17 the whole thing. And we left that flexibility in
18 the ETS work plan. So I think that will be part of the
19 next step.

20 MR. RIPPERDA: By Phase 2, you mean the original
21 expansion of the onsite treatability study?

22 MR. FIELDS: Yeah. So right now, we have this --
23 these two injection wells and this extraction well. This
24 was the original conceptualized master plan, Stage 2 --
25 Phase 2. But now "Phase 2," I think, is onsite expan- --

1 you know, we're looking at other options, other thoughts on
2 how to best achieve the objectives.

3 MR. RIPPERDA: Yeah.

4 MR. BURIL: Keith, given our better understanding of
5 perchlorate treatment now with the proposed systems being
6 placed at the wellhead for the water purveyors, is there
7 any thought being given to additional phases onsite
8 utilizing that technology?

9 MR. SLATEN: You know, I think it's probably about
10 concentration perchlorate that kind of tips the scale.
11 Perchlorate concentrations are high enough up here that FDR
12 is good for that.

13 You know, if you go to lower concentrations of
14 perchlorate, it may tip the scale towards the ion exchange
15 resin kind of thing. But I think, for right now and the
16 type of concentrations we're expecting to have and volumes
17 we're expecting to have, FDR is probably still the best way
18 to go.

19 MR. FIELDS: And I asked that question directly to
20 U.S. Filter on Tuesday, and their -- they said, you know,
21 if the cost break comes around 200 parts per billion of
22 perchlorate before you're changing out that resin, maybe,
23 because that resin, I think they told us is \$400,000 to
24 change out or something like that.

25 So if we stay -- but, you know, one thing -- the

1 whole idea, just like we see with soil vapor extraction,
2 just because we see 6.6 milligrams per liter of perchlorate
3 right now, six months after we start, that may be dropping
4 down to some lower level. And so we need to keep that in
5 mind.

6 There's also these tailored carbon, you know, are
7 on the horizon that U.S. Filter feels is very promising,
8 and, you know, I think we want to -- you know, it'll be our
9 objective to keep up with the technology.

10 If there comes a point where it makes more sense
11 to pull out the FDR and just use tailored carbon in our
12 activated carbon vessels and that achieves our
13 objective, we may want to look at that.

14 MR. SLATEN: We've already talked -- FDR for this
15 phase.

16 MR. BURIL: That's a done deal. I agree with you
17 about the cost of the break as far as the FDR versus the
18 resin, given the higher concentrations.

19 Just a historical point of interest, when we were
20 doing our pilot test previously, we were actually at a
21 point of having to spike the influent with perchlorate in
22 order to get the concentrations high enough in order to get
23 testing.

24 I don't know whether you have any time frame data
25 for your 8-hour pump test indicates that this is

1 constant, dropped off, or whatever, but it's something to
2 consider down the road. This is an operation for six
3 months or a year before you go to Phase 2, that you take a
4 very hard look at what your concentrations have done over
5 the course of time.

6 MR. FIELDS: Absolutely.

7 And that -- you know, what that may mean is we
8 can get a higher flow rate through our FBR and extract --
9 you know, use that for, you know, more wells or something
10 like that. I think we'll -- we want to look at --

11 MR. BURIL: Assuming your contact time is still okay.

12 MR. SLATEN: So Bob is still going to be the first one
13 on and pumping anything.

14 MS. FELLOWS: Maybe.

15 MR. SLATEN: Maybe.

16 MR. RIPPERDA: Well, he better. He will.

17 MS. FELLOWS: He will?

18 MR. RIPPERDA: Even if there are some hangups with
19 various things between you, him, and DHS, it would still
20 only be on the order of a few weeks --

21 MS. FELLOWS: Weeks.

22 MR. RIPPERDA: -- not in the order of six months.

23 MR. FIELDS: He has his pad in and his vessel is being
24 delivered and he already has his own deck in
25 place.

1 MR. SLATEN: And he's got extraction well, and he's
2 got a place to send the water afterwards.

3 MR. FIELDS: He has it all.

4 MR. SLATEN: Okay. Well, if nothing else, it was a
5 nice meeting today.

6 MR. RIPPERDA: Just a couple questions about Sunset,
7 that Sunset group.

8 MR. SLATEN: Okay.

9 MR. RIPPERDA: What's -- I don't want to distract you
10 guys -- for the next week, it's all about Lincoln Avenue.
11 But after that, once that permit application of the CEQA
12 stuff is turned in, what's your idea of a work plan for
13 those monitoring wells, and what's the schedule?

14 MR. SLATEN: The work plan is on my desk; right,
15 Keith?

16 MR. FIELDS: Yes, sir.

17 MR. SLATEN: So it's up to me to get a look at it and
18 get it out.

19 MR. RIPPERDA: Okay.

20 MR. SLATEN: I got to go home last night about 10:30,
21 so maybe I'll work on it tonight.

22 MR. RIPPERDA: I would say -- you know, like I said,
23 for the next week, it should just be Lincoln Avenue. So
24 I'm not looking for it this week. I want you guys to focus
25 on getting everything in to DHS, and after that, you know,

1 stay here until ten o'clock working on the other stuff.

2 MS. FELLOWS: Last time (inaudible).

3 MR. RIPPERDA: I wish I could say it's good to be
4 back. No. It is good to be back.

5 MR. SCHUMACHER: Are you guys going to push Bob to get
6 the information in to DHS?

7 MR. FIELDS: We are currently supporting Bob to get
8 the information (inaudible).

9 MR. SCHUMACHER: He has to be pushed. I'm telling
10 you, he still doesn't understand. He doesn't.

11 MR. FIELDS: Information, what are you talking about?

12 MS. FELLOWS: Should we go off the record?

13 MR. SLATEN: Yeah. We're done.

14 (The proceedings concluded at 2:09 p.m.)

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