

**EPA AEROJET GENERAL SUPERFUND SITE
PROPOSED PLAN FOR OU-5 CLEANUP**

PUBLIC MEETING
RANCHO CORDOVA CITY HALL
2729 PROSPECT PARK DRIVE
RANCHO CORDOVA

Public Meeting, held on August 11, 2009,
at 2729 Prospect Park Drive, Rancho Cordova, California,
commencing at 7:00 p.m., before Angie Materazzi, Court
Reporter and Notary Public in and for the State of
California.

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APPEARANCES :

KEVIN MAYER, U.S. EPA
REMEDIAL PROJECT MANAGER
OUS 3 & 5

JACKIE LANE, U.S. EPA
COMMUNITY INVOLVEMENT COORDINATOR

ALEX MAC DONALD, RWQCB
PROJECT MANAGER
REGIONAL WATER QUALITY CONTROL BOARD

ED CARGILE, DTSC
PROJECT MANAGER
DEPARTMENT OF TOXIC SUBSTANCE CONTROL

LYNN SUER, U.S. EPA
CHIEF OF THE CALIFORNIA
SITE CLEANUP, SECTION 2

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APPEARANCES: (CONT'D.)

PUBLIC COMMENT SPEAKERS

ANDY SOLUE

CONNIE BERRY

DAVID BERRY

LARRY LADD

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JACKIE LANE: Good evening, everyone.

I just wanted to thank you all for coming out tonight and your for involvement in the cleanup decision for the Perimeter Groundwater Operable Unit 5 of the Aerojet-General Superfund Site. It is much appreciated. My name is Jackie Lane. I'm the community involvement coordinator for this site. My office is located in San Francisco.

I have made sure that most of you have signed in and have picked up our presentation as well as a copy of the Proposed Plan, if you did not get it in the mail. If you're not on our mailing list, you will not get future mailings, so I suggest to you that you check yes on the box. If you ever need to get in touch with me or our project manager Kevin Mayer, our contact information is in the Proposed Plan and also at the end of the presentation.

Now, to get why we are here tonight, tonight we are here to present the Proposed

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2 Plan as well as to gather verbal comments
3 from the public. After the presentation, I
4 will invite you all -- who's ever able and
5 would like to give a public comment. I want
6 to remind you that the original comment
7 period was from August 3rd through September
8 1st, 2009, but we had a request of an
9 extension and we have approved that, so the
10 extension is until October 1st. So we would
11 like to encourage you to get any written
12 comments, either by e-mail, fax, or by mail,
13 postmarked no later than October 1st, 2009.

14 We do have a court reporter present
15 with us, Angie. She'll be recording the
16 Proposed Plan meeting as well as the comment
17 period. And the recording is helpful for us
18 later on when we have to develop our
19 response to comments.

20 The comments that we receive tonight,
21 as well as the ones that we receive in the
22 mail, will be addressed and will be called a
23 responsiveness summary. And this will be
24 attached to the record of decision. The
25 record of decision actually memorializes EPA's

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2 decision for the Operable Unit 5, which we
3 will affectionately refer to as OU-5 for the
4 rest of the evening.

5 The comments that we receive, we
6 take very seriously and they can influence
7 our final decision. So if you do have
8 comments, we would love for you submit those.

9 After the record of decision is
10 approved, we will make it available in the
11 sites local repository and I will put an ad
12 in the local paper letting you know that
13 that's available. And the locations for the
14 repositories is also in your Proposed Plan.
15 We will also do a summary fact sheet that we
16 will send to our mailing list.

17 One thing I want to do right now is
18 just introduce a couple of people. One, is
19 Lynn Suer. She's the chief of our
20 California site clean up section two for EPA.
21 Then we also have with us tonight Alex
22 MacDonald. He's with the Central Valley
23 Regional Water Quality Control Board; and
24 then we have Ed Cargile, who is with the
25 California Department of Toxic Substances

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2 Control. And then finally we have Kevin
3 Mayer, who is the project manager for this
4 site.

5 Kevin will present to us the site
6 history. He'll talk about the Proposed Plan
7 alternatives that we have looked at. And
8 then he'll answer any clarification questions
9 on the presentation at the end.

10 If it appears to me that your
11 question is in the form of a comment, I will
12 stop you and say so. I'll ask you to state
13 your name and spell it, so that we can be
14 responsive when we have to develop the
15 responsiveness summary. If you do speak,
16 please speak loudly and clearly so that the
17 court reporter will be able to record everything
18 successfully tonight.

19 If you've never been to City Hall
20 and you need to find the restroom or water,
21 if you go to the right and to the right
22 again, you'll run right into the restrooms
23 and the water fountain. And without further
24 ado, I'd like Kevin to come up to present
25 the plan.

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Thank you.

KEVIN MAYER: Thank you, Jackie.

I'm wondering, do you all think I need to use the microphone? If you do, just give me a wave and I'll be happy to. Otherwise, I'll be wondering about projecting.

Thank you so much for coming. I really do appreciate you all showing an interest in the project. I actually have been on the project only a short while relative to -- not only how long this has been part of the Superfund program, but certainly how long Aerojet has been here and operating in the Rancho Cordova area. This picture goes back into the Cold War, shows some of the reason that Aerojet was here with all of the dredge spoils and the big wide open spaces.

Hopefully, you're aware -- we're here in Rancho Cordova now (points at map). The Aerojet property is here, just south of Highway 50 and south of the American River. But the Aerojet site, the Superfund Site, is defined by wherever contamination has spread,

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1 where it started and where it's come to be.
2 So we will show you that the contamination
3 has spread through the groundwater outside
4 the boundaries of the Aerojet property. And
5 we have a couple of different projects going
6 on or pieces of the overall project. This
7 is only one of them. So if I can show you
8 -- this the Aerojet property there that big
9 open spot. Groundwater contamination is
10 spreading in various directions, including to
11 the west, toward Rancho Cordova here. What
12 this particular piece of the puzzle, is the
13 remainder of the non-property groundwater that
14 hasn't already been dealt with in the
15 Operable Unit -- what we call Operable Unit
16 3. And just for administrative purposes,
17 these are broken up into zones, but mostly
18 you won't have to worry about zones. Just
19 this colored part is Operable Unit-5. There
20 are also some soil areas that have been
21 appended to this Operable Unit 5. There are
22 going to be a couple of pieces to this
23 Operable Unit and a couple of pieces to this
24 presentation.
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2 So what I'm going to present is just
3 give you a general outline of the site, what
4 the Operable Units are, why we have broken
5 them up, and where they are, and our general
6 approach -- the Superfund approach to
7 cleaning this up. And then we have got
8 these two pieces. The groundwater piece and
9 the soil piece. So I'll try and step you
10 through what the nature of the problem is
11 and what we're trying to do here -- why
12 we're using various risk and regulations to
13 set some clean up levels. What the cleanup
14 alternatives are and why we are preferring
15 one in particular. And then, when we talk
16 about groundwater, I think we really do need
17 to talk a bit about soil vapor, since some
18 of the contaminants in the groundwater are
19 volatile. That is, they go from the water
20 into the soil gas and will move up toward
21 the surface. And then we'll talk about
22 soil, the problems, objectives, and the clean
23 up alternatives.

24 So this is both one of my favorite
25 and one of my least favorite maps. It's one

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2 that sort of tells me everything, but for
3 folks just looking at it, tells you nothing.
4 All right. Let me try to decipher this.
5 We have this broken line -- if you follow
6 this red line all the way across, that's
7 the further extent that we have measured
8 groundwater contamination in any layer of any
9 particular contaminants.

10 This colored area is the Aerojet
11 property. And you see we have broken it up
12 into these different colored sections. These
13 are five different Operable Units or pieces
14 that we're going to be trying to deal with
15 individually and ultimately tie them
16 altogether to an overall cleanup.

17 There are two major groundwater or
18 off site -- off property Operable Units.
19 One is OU-3, the Western Groundwater Operable
20 Unit, that goes through Rancho Cordova and up
21 into Carmichael; and then OU-5, is the one
22 we're talking about now. Now, why we've got
23 groundwater all around this site is because
24 the groundwater spreads in all of those
25 different directions. If you look at these

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2 black arrows, that's the general flow
3 direction of groundwater. So if you were
4 trying to contaminate as much groundwater as
5 you could, you would put it somewhere around
6 here so it would spread to the furthest
7 extent in all sorts of directions.

8 Certainly back in the Cold War era
9 they weren't thinking about groundwater
10 contamination. Well, we have to think about
11 it now because communities are all around
12 here and encroaching on some of the property
13 too.

14 So overall we have got seven
15 Operable Units. Two groundwater Operable
16 Units; and then five Operable Units of the
17 source areas. And this is one of those two
18 groundwater Operable Units. We are starting
19 to deal with some of the soil on the edges.

20 Let's talk about groundwater. When
21 EPA deals with groundwater contamination, our
22 first issue is to protect the public drinking
23 water. Much of that's has already been
24 dealt with. No one now is getting public
25 drinking water supply that doesn't meet all

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2 of the standards. But we're also trying to
3 do a couple of other things. To keep the
4 plume -- the extent of the contamination,
5 keep it from spreading any further and
6 affecting any other wells, we want to keep
7 -- basically, control the sources and then
8 eventually clean up the aquifer so that it
9 can be used. This is a simple way of
10 showing this. If this is the source, what
11 we're going to try and do is to keep the
12 furthest extent of the groundwater from
13 getting it -- groundwater contamination from
14 getting any further. But, as the
15 contaminants spread from the source, they
16 become more and more dilute and what we
17 would like to do is to cutoff the higher
18 concentration of groundwater before it reaches
19 out to the outer extent. And if we do it
20 properly, by cutting this off, in
21 intermediate area, we become much more
22 effective at extracting and treating the
23 higher concentrations of contaminants and we
24 allow the area in between to eventually clean
25 up somewhat faster. Now, fast is of course

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2 all relative. But, we'll show you some of
3 the estimates.

4 All I wanted to show you with this
5 slide, from the Sierra Nevada into the
6 Central Valley, is that the land that we're
7 on now is made up of layer after layer after
8 layer of materials that's washed down from
9 the mountains. And so it's not quite so
10 simple as a two-dimensional issue. We have
11 got multiple layers that make it a little
12 bit trickier so that we have to make sure
13 that we get all three dimensions, not just
14 the two that I just showed you with that
15 simple target.

16 What contaminants are we looking at?
17 We got a range of them but primarily there
18 are three: Perchlorate, which is an anion,
19 a salt; NDMA, which is semi-volatile organic
20 chemical; and then what we will oftentimes
21 call VOCs, volatile organic chemicals.
22 Volatile, means it will go off into the air
23 and usually that's what it does, except when
24 it gets into the groundwater and then we
25 have to clean up those contaminants. The

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2 primary one of Operable Unit 5, is TCE.
3 It's a chlorinated solvent used to degrease
4 metal.

5 And in the water, we're trying to
6 contain the plume to the drinking water
7 standards, both federal and state. You can
8 see many of these standards are state
9 standards, which are more stringent than the
10 federal. Some are just federal standards.
11 MCL, stands for Maximum Contaminants Level.
12 That's the drinking water standard. These
13 are regulations. But, you'll notice these
14 two, NDMA and Dioxane, for which there are
15 not regulatory standards. In this case,
16 we're using health advisory numbers. One for
17 California and one that the federal levels
18 have for a health advisory. So these
19 numbers are set to alternatives to the
20 regulations.

21 Now, does this mean that this is
22 what we treat it to? Well, no, because part
23 of the clean up remedy, which I'll go into a
24 little bit more detail, is to treat it to an
25 end-use concentration. And for many reasons

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2 because some of this will -- probably most
3 of it -- will eventually get into surface
4 water, the treatment standards for discharge
5 of surface water, are even more stringent
6 than these. So when we treat this water, we
7 have to treat to --

8 Yes. You had a question?

9 QUESTION: Are you saying discharged
10 surface water standards are more stringent
11 than drinking water standards?

12 KEVIN MAYER: Many of them are, yes.
13 Not all of them are, but many of them are.

14 QUESTION: Is that what you were
15 talking about now?

16 KEVIN MAYER: Yes.

17 This is also a complicated slide.
18 What we're trying to show here is that in
19 order to stop the groundwater contaminants
20 from spreading, we need to put in wells and
21 pumps and pump the contaminated groundwater
22 so that as the water flows off the site, it
23 gets caught in these wells and brought back
24 -- these dotted lines are pipelines -- to
25 various treatment systems around the site.

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2 So notice the dark red line is the
3 extent of contamination. What I want to do
4 is show you this area up here as an example.
5 So what we have is this dark area where the
6 contamination already has migrated. When we
7 get all the wells in place -- many of them
8 are already in place -- when we get all of
9 these wells in place and operating, then
10 we'll be able to capture all of the
11 contaminants plume. This outer red line, is
12 the capture zone. So it's like the drain in
13 the bathtub. You see the water being pumped
14 out or drained out. It forms that
15 tornado-shaped zone of depression and the
16 water then flows into the well instead of
17 flowing beyond into clean areas.

18 If all we wanted to do is to
19 capture this, we would just need to add a
20 couple more wells, make sure the treatment
21 system that's back in this area -- the GET,
22 Groundwater Extraction Treatment System -- is
23 fully operating and we will have capture.
24 But we want to do another step, which is to
25 add a couple of more wells down toward the

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2 source that capture the higher concentration
3 material before it gets into the furthest
4 extent of the plume and that way we will
5 clean this area up to the beneficial uses
6 more rapidly.

7 Well, how much more rapidly? This
8 is probably impossible to see. What this
9 says is that with groundwater containment
10 alone -- once we get those sources under
11 control -- we're looking at 150 to 350 years
12 before these various parts of the groundwater
13 -- the contaminated groundwater plume are
14 cleaned up. If we add another step, which
15 is what we call groundwater containment with
16 mass removal, we cut these times -- in some
17 cases by over 100 years, and in some cases
18 only a few decades. But what we notice is
19 that the cost, the increased cost, to do
20 that increased pumping, really isn't all that
21 much more expensive and doesn't really make a
22 big enough difference over the long run if
23 we're talking about times that go to 100
24 years or so.

25 This is a simplified evaluation,

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2 looking at EPA Superfunds 9 criteria for
3 deciding on a cleanup. What this says is
4 these top two we have to meet. It has to
5 be protective overall. It must comply with
6 state and federal laws. And then we look at
7 long-term effectiveness. Something we call
8 implementability, can we actually build the
9 thing. Short-term effectiveness, which means,
10 while we're putting the remedy into place,
11 will there be any risks to the community or
12 to the workers while they are putting it
13 into place. And EPA Superfund is very big
14 on reduction of toxicity mobility or volume
15 by treatment. We don't like leaving stuff
16 there. We want to clean it up and go away.
17 And then the other criteria, are costs; state
18 agency acceptance and community acceptance,
19 which is what we're talking to you about
20 today.

21 What I want to point out is, no
22 action, we have to use that as a baseline.
23 And, of course, it doesn't meet any of our
24 criteria. Groundwater containment does pretty
25 good. It's going to take longer, so the

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2 long-term effectiveness is only partially met.
3 The dark means it fully meets the criteria.
4 The white means it doesn't meet the criteria;
5 and half and half means it's -- gets you
6 part way there.

7 But if we do groundwater containment
8 with mass removal, what we prefer, we're only
9 adding a few million dollars -- maybe 10
10 percent or so -- to the overall cost over
11 the next 30 years and we do get more rapid
12 clean up.

13 So let me explain the three parts.
14 This shows the different groundwater
15 extraction and treatment systems, what they
16 are supposed to capture.

17 Let me show you a picture of this
18 treatment plant here. So we have got
19 multiple contaminants, we need multiple types
20 of treatment systems. But this is already
21 in existence. All the treatment systems are
22 up and as of today -- well, there's one
23 that's still being built. That's right.
24 But the major one is up and running. So
25 we've got very standard, very reliable

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2 treatment technologies. For the three
3 different types of contaminants, we'll need
4 different types of treatment. In this case,
5 we've got at least two of the different
6 types of treatment. We'll have three
7 different kinds of treatment.

8 QUESTION: Are you currently -- is
9 that treatment plant currently receiving the
10 plume -- Sailor Bar contamination, is that
11 being pumped into the American River to that
12 Aerojet site you just showed?

13 KEVIN MAYER: You're talking about
14 the Sailor Bar, this one out -- Zone 1,
15 right?

16 QUESTION: Because you currently have
17 -- I don't know how many wells or pumps at
18 the intersection of Sailor Bar 503 and 4 and
19 there's probably four or five or six there
20 at the street at Emperor and Kenneth Avenue.
21 They take samples there periodically right in
22 that spot.

23 KEVIN MAYER: They are monitoring
24 wells and extraction wells. Most of the
25 extraction wells for this area are in place

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2 and they are pumping and they are being
3 treated.

4 QUESTION: That is coming back to
5 Aerojet?

6 KEVIN MAYER: Right. There's
7 pipelines through here. There's -- I keep
8 getting mixed up with the Carmichael area,
9 which isn't coming across, but that's in
10 OU-3.

11 QUESTION: Since you're talking about
12 that area. There was a plan to monitor the
13 well at the intersection of Park and Winding
14 Way. And then after that there was going to
15 be an extraction well and that was supposed
16 to be built last year. I've attended a
17 couple of meetings on that.

18 JACKIE LANE: Can we do that right
19 after he finishes the presentation? And we
20 can actually talk to you further about the
21 continuation of the clean up. If that's
22 okay with you? We'll be here so we can get
23 all of your questions answered. But I want
24 Kevin to go on and try and complete the
25 presentation.

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2 KEVIN MAYER: Neither of them have
3 been built yet and we're still talking to
4 the homeowner that is adjacent to those well
5 sites.

6 What I wanted to talk to about on
7 this is that once it's treated, it's
8 primarily discharged to surface water
9 currently. EPA has no objection to Aerojet
10 reusing that water for like a cooling tower
11 uses. But ultimately it will be discharged
12 to surface water. And because it's
13 discharged to surface water, depending on
14 where you are to different water bodies, the
15 treatment levels for surface discharge, must
16 meet state discharge limits. If it's on
17 site, it must meet all the numbers. If it's
18 discharged off site, it must get a permit
19 from the state.

20 I wanted to shift gears a little bit
21 and talk about vapor intrusion. Because the
22 last several years have been primarily
23 researching the potential risks from these
24 volatile organic chemicals in the groundwater
25 that could move into the soil gas and

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2 eventually migrate up to the soil surface.

3 Now, they move in such a way that
4 immediately above the soil surface is, you
5 know, diluting into the atmosphere, but if
6 there's a building on there and the building
7 is a slab or the basement is cracked, just
8 as in Radon issues, you can get the
9 potential for accumulation. So we took a
10 very careful look at the groundwater
11 contamination levels and all the physical and
12 chemical parameters in the soil above the
13 water table. And we're looking at perhaps
14 100 feet between the water table and the
15 soil surface.

16 And we looked pretty hard to get --
17 not just calculations -- but to actually get
18 a lot of samples of the water in the soil
19 gas to really measure how it's moving up.
20 We took more than our -- nearly 300
21 locations, we took soil gas and water samples
22 to feed into our estimate. And the good
23 news is that, for the vast majority,
24 essentially all of the off site, off property
25 groundwater, that the risks are not -- do

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2 not trigger any action that we need to take.
3 Bad news is that on some of the property --
4 that's still on Aerojet property -- there are
5 a couple of places where we can measure the
6 soil gas that's not at acceptable or
7 protected levels. So we need to deal with
8 that.

9 Which gets me into what we're
10 talking about in terms of the soil clean up.
11 Now, our objectives in these contaminated
12 soil areas, are to protect the groundwater,
13 to prevent exposure of those gaseous
14 chemicals, to get it down to protective
15 levels, and to ultimately eliminate exposure
16 of these non-volatile chemicals that could be
17 in the soil as well.

18 What are we talking about? We are
19 here in the soil areas here. We have
20 measured a bunch of different chemicals, not
21 all of these chemicals are every place. In
22 fact, none of them -- in no location do we
23 have them all. And they vary from lead and
24 mercury, silver and zinc metals, to
25 Perchlorate, the salt, and some organic

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2 chemicals that will come out into the air
3 and some that won't. Dioxin, D-I-O-X-I-N, is
4 one of those semi-volatile or non-volatile
5 chemicals. And we have got various reasons
6 -- since there's no equivalent to a drinking
7 water standard for soil, we do risk
8 evaluations. And the basis for these risks
9 are whether they are cancer or non-cancer.
10 And these concentrations in the soil would be
11 protective under residential use or what we
12 call unrestricted use -- assuming that there
13 will be kids getting their hands dirty,
14 kicking up dust, people growing gardens on
15 that. So typically the residential use is
16 the most restrictive. Although, for some of
17 the metals, Cadmium and Chromium, it would be
18 the construction worker kicking up dust that
19 would be most at risk. For commercial, use
20 where you don't have quite that level of
21 exposure, the soil concentrations tend to be
22 lower.

23 One thing I want to add is that for
24 Perchlorate, since it is a very soluble salt,
25 we're looking at a much lower level to

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2 protect the groundwater. If there's any
3 water that comes on it, it could flow down
4 to groundwater.

5 Let me show you. These blue circles
6 are areas that we studied but found that we
7 don't need to clean those up. They are
8 already at protective levels. These red
9 circles -- 1, 2, 3, 4, red circles are
10 contaminated with typically metals. Although,
11 in this case there's Perchlorate as well.
12 What we need to do there is to dig that
13 material out and take it to a certified
14 landfill and replace it with clean soil.

15 QUESTION: Is that all Aerojet
16 property?

17 KEVIN MAYER: Yes. This is all on
18 all Aerojet property, right.

19 In this area, we have sort of blown
20 this up here. Let me explain that. In
21 this area, there are four locations where we
22 have got those volatile chemicals. And what
23 the standard way of dealing with that, is to
24 put a temporary cap over it and just pump
25 soil gas until we have cleaned that out. So

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2 we have got excavation, soil vapor
3 extraction, and then we have got some that
4 are a bit problematical. These green
5 locations are where there is volatile organic
6 chemicals in the groundwater. And until the
7 groundwater gets cleaned up, soil vapor
8 extraction won't protect these -- at least to
9 the residential levels. So we're looking at
10 ways to control exposure until the
11 groundwater gets cleaned up.

12 QUESTION: First question. You said
13 you're cleaning this up. Are you cleaning
14 it all up to the residential level?

15 KEVIN MAYER: Yes.

16 QUESTION: The second is, how do we
17 decide when to excavate versus use soil
18 vapor?

19 KEVIN MAYER: For metals, they don't
20 go into the vapor. They are there in the
21 soil. So you got to dig those out. Soil
22 vapor, you could dig it out, but it will
23 potentially come back up in the gas. So
24 that's where you use soil vapor. That's the
25 most effective way to go.

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2 Thank you for asking that.

3 This is a little bit confusing.

4 What we have done is broken into those three
5 categories. This is the excavation. This
6 is the soil vapor extraction. And one
7 possibility was to leave this property solely
8 for commercial use or non-residential use.
9 And so one possibility was to cap it and put
10 on a land use controls deed restriction.
11 But we weren't too happy with it. It didn't
12 reduce toxicity. So what we're trying to do
13 is to do a more aggressive clean up. That's
14 our preferred option. It does cost several
15 times more. But in terms of the overall
16 site expenses, it's not that much more. Plus,
17 it deals with the problem, and I won't have
18 to do reports every five years on whether
19 this is protective or not.

20 Unfortunately, those green areas we're
21 not exactly thrilled about vapor mitigation
22 and deed restrictions. But until we've got
23 a better way of dealing with it, that seems
24 to be the only viable option.

25 So, basically, I'm toward the end

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1 here. What we need to do -- we're sort of
2 working in toward the center. And after
3 this Operable Unit, we will be dealing with
4 the source areas. So we have got to deal
5 with the source areas before we can
6 ultimately clean up this entire site. All
7 we're doing is a piece of the puzzle and
8 we'll try to eventually get this -- get the
9 entire site cleaned up. It's going to take
10 many years before we propose solutions to all
11 of these source areas and many many, more
12 years before the groundwater is all cleaned
13 up.
14

15 This is basically the end. We've
16 extended the comment period to October 1st.
17 Please get your comments by e-mail, phone,
18 fax, letter, postmarked no later than October
19 1st. I think conveniently you can't read
20 where to send it. That's my name. My
21 address is on the back of the Proposed
22 Planned.

23 Thank you.

24 JACKIE LANE: If you don't mind, we
25 can have some clarification questions on the

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2 presentation. And then we'll open it up for
3 public comment. Before we start with the
4 questions for the presentation, how many of
5 you would like to make a public comment
6 tonight?

7 Go ahead, sir.

8 QUESTION: I think it's on Page 15
9 of the printout. I notice that it says,
10 Overall Protectiveness meets criterion. But
11 in the Long-term Effectiveness, it only
12 partially meets the criterion. And then in
13 the Reduction of Toxicity, says that it
14 doesn't meet the criterion. Can you explain?
15 Can you explain what those partials mean and
16 what's the long-term impact of that?

17 KEVIN MAYER: First of all, the no
18 action, doesn't mean anything. I think what
19 we're looking at is for those areas with the
20 volatile contaminants, until we get those out
21 of the ground, we really haven't fully
22 cleaned up that site. So if all we do is
23 leave it where it is, and then just protect
24 the people living over it, even though we're
25 protective -- that's that top one -- we

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2 haven't met this criteria. Now, the ones
3 that we must -- that we are required to meet
4 -- are those top two. We have to meet
5 those. Because if it's not protective and
6 it doesn't follow the law, we're outside of
7 the Superfund Legislation. We really want
8 this to be fully meeting the criteria. But
9 if it just partially meets it, that's better
10 than just leaving it there.

11 QUESTION: So if the circle is only
12 half filled, that means it's not meeting it
13 totally?

14 KEVIN MAYER: Not meeting the
15 criterion.

16 QUESTION: Does that half filled
17 mean it's compliant?

18 KEVIN MAYER: It's at least
19 partially. We would need to work it out
20 with the state to get it fully compliant.
21 But, yeah, the way it is -- until we get a
22 deed restrictions in there -- if the cap
23 works and the deed restriction is effective,
24 then it would probably would meet the state
25 requirements.

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QUESTION: But you're going for the one in the white anyway, right?

KEVIN MAYER: We're suggesting -- this is our preferred alternative.

What I'm trying to tell you, is that, I, as the technical project manager for EPA, I'm not very confident that we will fully meet the criteria in the ones that are partially filled. And there lots of reasons that there could be. But in this case, we're not sure that capping alone is going to keep -- really --

JACKIE LANE: And as part of the record of decision, you will be explaining a lot of that, right?

KEVIN MAYER: Yeah, that gets explained in great detail.

QUESTION: In the areas where it required additional pumping to clean up the groundwater before you can clean up the soil -- overlying soil -- has there been any estimates of how long that pumping might take?

KEVIN MAYER: No. Because part of

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2 that is working with the next Operable Unit
3 from the source area to get that source
4 dealt with. But generally, you're probably
5 looking at a decade or multiple decades.

6 Groundwater takes a long time to
7 contaminate this widely and it takes a long
8 time to get it out of there.

9 QUESTION: Is Aerojet still
10 contaminating?

11 KEVIN MAYER: Are they still
12 contaminating?

13 QUESTION: Is their process still
14 producing contaminants? They are still
15 operating.

16 KEVIN MAYER: They are still
17 operating. Their, what we call, somewhat
18 euphemistically, their housekeeping is much,
19 much better. So, no, they are not -- my
20 understanding is they are not putting more
21 contaminants into the soil and into the
22 groundwater.

23 We do now have regulations that are
24 both federal and state regulations about how
25 to handle toxic chemicals. However, there

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2 are parts of the soil and contaminants that
3 have gotten in high enough concentrations
4 down into the groundwater, that they will
5 continue to add to the groundwater until we
6 get those under control -- those source areas
7 under control.

8 QUESTION: In a best case scenario,
9 it looks like the groundwater will be
10 contaminated for at least 120 years.

11 KEVIN MAYER: These are estimates.
12 But, yeah, a century. Certain parts of the
13 groundwater will be contaminated that long.

14 QUESTION: First of all, in the
15 literature I didn't see any estimate of acre
16 foot pumped per year. I don't know if
17 that's been done. And secondly, it's kind
18 of a follow up to what earlier discussed.
19 Has there been any consideration, any of the
20 analysis, since groundwater is a limited
21 resource, some kind of aquifer recharge?

22 KEVIN MAYER: To answer your first
23 question, for this Operable Unit, we estimate
24 10 to 15 million gallons a day. 10 million
25 gallons is 3-acre feet, so 3- to 5-acre feet

PUBLIC MEETING

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2 a day for this Operable Unit. And this is
3 half of the overall site.

4 Groundwater replacement, groundwater
5 recharge, I don't have a recharge plan in my
6 Operable Unit. One of the issues are that
7 if we were to cycle it back into the soil,
8 you know, that might be one way to flush
9 contaminants through the source areas. But
10 we are really looking at the source area.

11 We're very concerned about conserving
12 water. Even though water is going into
13 surface water, there are instances where the
14 users of the American River are being able
15 to use that water. It's a complicated
16 question and I don't have a real clear
17 answer.

18 JACKIE LANE: Could you spell your
19 name.

20 ANDY SOLUE: Sure. Andy S-O-L-U-E,
21 California American Water Company.

22 QUESTION: I have two quick
23 questions. One, you didn't find any soil
24 contamination either in Rancho Cordova,
25 outside of the Aerojet property or in Sailor

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Bar?

KEVIN MAYER: No. And basically the main factors are how highly contaminated -- what the concentrations are in the groundwater. So as you get further out, it becomes more and more dilute. So the amount of -- the total mass getting into the soil vapor is less and less as you get as you get further away from the sources.

The second factor is how far it is to the water table. As you get further from the site, the contaminated layers are deeper and deeper. So you get both less mass and more dilution. To answer your question, the answer is, yes. I gave you a couple factors as to why that's not unexpected.

QUESTION: This is a very simple question that maybe is not as simple as it sounds. One of your pictures that you showed us, a bullet, when you're trying to focus on your wells right there and get right at the center of the source. If you look at the --

KEVIN MAYER: The target, yeah.

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2 QUESTION: If you look at the maps
3 of Aerojet, it's almost as if you could draw
4 a line, let's say, at Hazel and west of
5 Hazel, going east to Prairie City Road, for
6 instance, you don't have the contaminants
7 there. So if you have the source right
8 there toward the center and the aquifers are
9 going from east to west, then wouldn't it be
10 -- maybe like I said too simple -- to say
11 that it's beginning in one spot there, why
12 couldn't you find some source right there if
13 it's continued all of these years to continue
14 to pollute the water, why can't there be
15 some way to focus on that area where it
16 begins and really start drawing out there.
17 Because I would think that it would make it
18 much more simple to clean the water up
19 further down stream.

20 KEVIN MAYER: You're right. And in
21 most Superfund Sites, that's exactly what we
22 would do. The scale -- I'm not sure that I
23 explained the scale. We're looking at over
24 10 square miles of Aerojet property and 27
25 square miles total of property and

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2 groundwater contamination. So over this 10
3 square miles, there were dozens and dozens
4 and dozens of operations: Burn pits,
5 chemical tests, and wastewater discharges.

6 My simplification, was not to suggest
7 there was a point, but that there's an area
8 that's of higher concentration. And as you
9 move away, you get more and more dilution.
10 We want to cut that off where you're getting
11 more bang for your buck as you pump that out
12 and allow that area in between the various
13 capture zones, the -- if we cut the plume
14 off here, we got a better chance of this
15 part of the plume cleaning up faster.

16 I'm not sure I answered your
17 question, except to say, it is very
18 complicated.

19 JACKIE LANE: We have one more
20 question. You want to add to that?

21 ED CARGILE: That really is the
22 plan. Since 1979, the goal has been to try
23 and contain and to stop the spread. And
24 this portion -- this OU will finish
25 controlling the spread of the problem.

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2 Aerojet is already underway on various OUs --
3 five OUs, on the property, to try to develop
4 the plan to get the source controlled in
5 place. So we have the outer edge
6 controlled. We have an intermediate area
7 around the property boundaries where it's
8 being controlled and then there will be
9 source controlled inside. So we're getting
10 the highest concentration.

11 QUESTION: Is it the same old thing,
12 that we have to dig and drill?

13 ED CARGILE: Thousands and thousands
14 of samples are being taken right now.

15 JACKIE LANE: We have one more
16 question.

17 QUESTION: When you were talking
18 about the soil contaminants and the numbers
19 that you have down here. You said the
20 levels came from assessments and they were
21 protective to a certain level. And I was
22 wondering what that level was?

23 KEVIN MAYER: When we clean
24 something up, we -- depending on whether --
25 there are two broad types of contaminants.

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2 One, we call carcinogens; and the other, are
3 non-carcinogens. For carcinogens, our goal
4 is to reduce the risk to what we call one
5 in a million, which means that -- just by
6 being an American -- an additional one in a
7 million chance of getting cancer. For
8 American, you've got about a 1-in-4 chance of
9 developing cancer. And what we want is that
10 from these chemicals, we want you to have a
11 1-in-4.000001. So that's our clean up
12 objective.

13 For non-carcinogens, we have,
14 depending on the toxicity, we have what's
15 called a hazard index or health index. And
16 we want to be below a fairly conservative
17 number that's considered protective of
18 whatever effect that is. Lead could be
19 Neurotoxin.

20 JACKIE LANE: We have one more
21 question.

22 QUESTION: If Aerojet is no longer
23 adding contaminants and the source of the
24 contamination has been identified is -- I'm
25 having trouble understanding how movement of

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2 the water is still carrying contaminants.
3 It's like, you know, if you have water up
4 here and it's running down there, after
5 awhile there is no water up here. So is
6 the source of the contamination, that
7 concentrated area of soil, continuing to seep
8 down and feed into the groundwater or has
9 all that already taken place and we're just
10 talking about cleaning up one great big
11 reservoir of contaminated water?

12 KEVIN MAYER: I think you've
13 answered your question very well. But it's
14 not just the contaminants like Perchlorate,
15 which is a salt. So whenever you have water
16 coming from, you know, the sky or if they
17 were to spread water, irrigations -- they
18 don't -- then you would get water moving
19 down through the soil column picking up the
20 contaminants and carrying it to the
21 groundwater. That's also true for a lot
22 these organic solvents. Especially, if you
23 dump motor oil onto the ground, you would
24 get those blobs of oil or oily dirt in the
25 soil and then as water comes down through,

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2 it picks a little bit of this up, even
3 though oil isn't very soluble in water, but
4 it will pick some of it up and carry it to
5 the groundwater. There's another issue, if
6 you dumped enough of these solvent or oily
7 gunk onto the surface, some of that would
8 migrate all the way, as a liquid, into the
9 water and you'll have blobs of this stuff in
10 the water. And now those blobs -- you know,
11 those oil droplets, aren't going to move --
12 the groundwater doesn't move all that fast,
13 maybe a foot a day. It's not that fast.
14 But what does happen is that, even though
15 it's only slightly, only a little bit of it
16 dissolves slowly, enough of it dissolves that
17 when you're looking at parts per billion or
18 in some cases parts per trillion, as a
19 protective level, that you don't want in
20 drinking water, that can continue to
21 contaminate any water that is moving through
22 that contaminated area. When you get those
23 blobs in the water, that is a real bear to
24 get out. And we've got spots all over
25 there, some that we haven't even identified.

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2 You can put thousands and thousands
3 of wells over ten square miles and, you
4 know, you're still having to interpret in
5 between those wells to what is there.

6 QUESTION: Will there be a public
7 health survey for selected residents in
8 Rancho Cordova and Fair Oaks to see whether
9 indeed there is a health problem now and in
10 the future? In Fair Oaks, one of our wells
11 has been closed. Has there been any
12 suggestion or is there a movement to do
13 that?

14 KEVIN MAYER: I'm not aware that
15 we're going to do another public health
16 assessment. Typically, we look at what the
17 -- you know, the ways that contaminants get
18 to people. And if we measure what's in the
19 drinking water -- which is very highly
20 monitored -- then we have to think what
21 other ways are there.

22 In some cases, you might have
23 noticed, where we're concerned about, soil
24 vapor, we would need to monitor that to see
25 whether we're actually are protective.

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QUESTION: You said another survey.

KEVIN MAYER: The ATSDR, typically does those things. And if they did it, it was a long time ago.

JACKIE LANE: We have another question.

QUESTION: On Page 15, again, it speaks of deed restrictions. What does mean to the EPA? Is that commercial versus residential use? What does that mean?

KEVIN MAYER: There's a wide range. It can mean many, many things. One, is that it can be restricted to non-residential use. So, for example, I've got a site in Sacramento, where we're looking at a deed restriction. You're not allowed to put a residence there. You're not allowed to put a school or a hospital, things like that. It's restricted to commercial or residential where the exposure is much less than to have somebody actually living there.

We could also require in the deed that -- that a -- say a soil vapor system is in place and that it's monitored

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2 regularly.

3 JACKIE LANE: It's very site
4 specific.

5 KEVIN MAYER: Chemical specific.

6 ED CARGILE: It is part of the
7 deed. If you divide the property, it moves
8 with the deed. So it's for the benefit of
9 anyone who wants to buy and live there, it
10 clearly states what the problem is and what
11 the controls are.

12 JACKIE LANE: We have another
13 question.

14 QUESTION: This has to do with
15 residents. We've been a resident in Rancho
16 Cordova for like over 20 years. I've raised
17 children since they were two years old. It
18 has to do with the health issues. And I
19 was wondering if anybody has done any kind
20 of survey of people who have lived in these
21 places for a long period of time, that these
22 wells have been shut down.

23 I have two members in my family, one
24 has Graves' disease that was diagnosed at 15
25 years old; and I have a husband that has

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2 nodules, might be cancerous, we'll find out
3 in another day or two; a son that has a
4 weird cysts on his legs.

5 I don't understand why -- we're
6 talking about the chemicals and the areas
7 that you're going to clean up. What about
8 the effect that this is having and just
9 because you close the wells -- of the other
10 residents that have been living here for 20
11 some years. Have you done any -- I mean,
12 has anybody investigated any of these
13 territories?

14 JACKIE LANE: What I suggest you do
15 is give your name and spell it for us and
16 this becomes part of your comment area. And
17 we can make sure you have an answer to your
18 question.

19 CONNIE BERRY: Connie, B-E-R-R-Y.

20 JACKIE LANE: Are there any other
21 questions?

22 QUESTION: My question is, what is
23 my comment going to add or take away from
24 OU-5 actually becoming a reality? What is
25 my comment actually going to do?

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2 KEVIN MAYER: Depends on the
3 comment.

4 QUESTION: If I say don't build it,
5 you're not going to build it?

6 KEVIN MAYER: A lot of these things
7 are already built.

8 QUESTION: That's right.

9 KEVIN MAYER: I've had plenty of
10 projects that have altered -- where a public
11 comment has altered not necessarily -- well,
12 in some cases what we did. But usually how
13 we do it and how we avoid causing more
14 problems that we wouldn't have known about.

15 This goes back 20 years ago, but in
16 Southern California, we had a situation where
17 we were looking at couple of different ways
18 of treating these volatile chemicals. There
19 already was a treatment system in place that
20 blew the volatiles into the air. And we got
21 some pretty strong comments that that didn't
22 make a lot of sense. Well, it doesn't make
23 a lot of sense to EPA either. When we have
24 the community making those sorts of comments,
25 we say, yes, we've got to switch to the

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2 other type, even though we've got that one
3 type already built. We want to switch to
4 the other type that keeps it in the carbon
5 filter.

6 We have done things that we've --
7 you know, when pipelines haven't already been
8 built, we have been able to time our
9 construction to avoid sensitive periods or
10 sensitive areas. I can't tell you exactly
11 how you'll make a difference, but I can tell
12 you that it has made a difference. And even
13 if you think it's not making a difference --
14 for example, if you say, Oh, well, we
15 support your preferred option. Realize that
16 there -- oftentimes, other folks who are
17 going to be making comments saying, Oh, no,
18 that's too expensive. You should do this or
19 do this other thing. So when we have got,
20 you know, comments from community and
21 comments from other types of stakeholders,
22 that really helps us -- helps me write the
23 records of decision, saying, you know, if I
24 look at the community acceptance, that's a
25 strong issue for going one way or another.

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2 JACKIE LANE: We have two more
3 questions and then we're going to try and
4 open it up for public comment.

5 QUESTION: While we're talking about
6 money, who is paying for this?

7 KEVIN MAYER: Aerojet. Aerojet is
8 paying it for directly.

9 QUESTION: We really don't care how
10 much this is going to cost?

11 KEVIN MAYER: Yes, we do. Because
12 Aerojet is government contractor. There some
13 -- ultimately what they sell to the federal
14 government is likely to come out of the tax
15 payer.

16 QUESTION: This lady mentioned how
17 we ended up shutting down wells. Why does a
18 well get shut down? Is that we were giving
19 people water and we weren't checking and then
20 we found out later? How does that happen
21 that when you end up giving people water for
22 a long period of time and then you find out
23 you were giving them water that was hurting
24 them? I just don't understand the process.
25 I'm an engineer also -- different type of

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2 engineer. How does that happen that when
3 you give somebody water that's hurting them
4 for ten years and then you find out after
5 people get sick, as opposed to checking the
6 water before you give it to them.

7 KEVIN MAYER: I'll give you a couple
8 of examples. One, is that -- this is
9 decades ago. But 30 years ago, people --
10 water agencies and regulatory agencies, were
11 not routinely checking groundwater for these
12 industrial chemicals. Part of the reason is
13 that, until you got to -- sort of
14 state-of-the-art researchers, the assumption
15 was that soil cleaned contaminants. And that
16 the groundwater was being protected by all of
17 that layer of soil. It's not so true with
18 things that don't breakdown microbially,
19 bacteria.

20 Yes, you can put a septic system
21 near the surface. And by the time it gets
22 to the groundwater -- at least some of the
23 nitrogen and some of the other things are
24 taken out by natural processes. When you
25 put in something that the bacteria are not

PUBLIC MEETING

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2 used to breaking down like, TCE.

3 So there was a learning process that
4 went on. Certainly that happened throughout
5 California where once you started looking for
6 it, there it was and wells shut down all
7 over the place for VOCs back in the --
8 primarily in the 70s -- when that big thing
9 happened. But even up into the 80s, people
10 were thinking, Oh, no, our water system is
11 way back in the San Bernardino Mountains.
12 We don't have to worry about these chemicals
13 and yet it showed up.

14 Perchlorate is an example. Until
15 just three years ago, there was no standard
16 for Perchlorate. Until ten years ago, there
17 was no good way of measuring Perchlorate at
18 levels below about a part per billion. Now,
19 we can not only measure it down below a part
20 per billion, but at least in California --
21 the federal government is hanging on behind.
22 They may never catch up to California -- but
23 California established a drinking water level
24 at 6 parts per billion. So until we started
25 being able to measure it, to even bother

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2 looking for it, and then to decide, you
3 know, what's the right number for protecting
4 it, Perchlorate wasn't being dealt with at
5 all.

6 QUESTION: Just a follow up.

7 When you look at water, are you only
8 saying, Okay, I have a glass of water and
9 you check it to see what's in it as opposed
10 to testing it to see if it's pure water?
11 If I don't know what I'm looking for, there
12 still could be something in the water today?

13 Do you understand my question?

14 KEVIN MAYER: Yeah. There's lots
15 and lots of stuff in the water, just because
16 we're in the world and stuff gets into the
17 water. But generally it's at such low
18 levels, you can't even measure it. There
19 are ways of measuring most kinds of
20 chemicals. That when we take groundwater
21 samples -- especially around a Superfund
22 Site, we're looking for not just those list
23 of chemicals that I showed you, but we're
24 looking for anything else that shows up in
25 the gas chromatograph. And then we're trying

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2 to figure out what that stuff is.

3 But generally the things that we're
4 worried about, are the -- that list that I
5 showed on the board.

6 QUESTION: I guess my fundamental
7 question is, in 1970 or 1960, you didn't
8 know to be looking for these things, fair?

9 KEVIN MAYER: That's true.

10 QUESTION: I guess my fundamental
11 question is, in 2009, in theory, could there
12 be things that in 2029, we go, We had no
13 idea this was here to go look for. Is that
14 how you do it?

15 KEVIN MAYER: There are lots of way
16 to be worried about water. Lots of reasons
17 to be worried. The plastic in the water
18 bottle. We find more and more about how
19 chemicals react to different parts of our
20 bodies. The more and more we research the
21 more we get interested in that. Well,
22 maybe, this breakdown product might be of
23 concern at least with very, very low levels.

24 But in general, we know the major
25 chemicals that are out there and we know the

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2 major chemicals that are likely to cause
3 these various health problems. And you're
4 not the only who's asked that question. In
5 fact, EPA asks that question -- by law we
6 have to ask that question over and over and
7 over and over again.

8 JACKIE LANE: We have one more
9 question.

10 KEVIN MAYER: We will never stop
11 asking that question.

12 QUESTION: My question is, we were
13 never told there was anything wrong with the
14 water, and that was in the 80s. We have
15 lived ever since then. And the children
16 were in the developmental ages. This family
17 has a lot of problems and no one else in
18 their family has those kinds of problems.
19 And the thyroid is one of the issues.

20 Is anybody taking studies on this?
21 Just because our wells have been shut down
22 -- when I first started going to the
23 meetings, I think there was three of them
24 that were shut down. The others were still
25 going. There's more that have been shut

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2 down in the area. Is there anybody at all
3 that studies to see, you know, the effect of
4 after the wells have been shut down, on the
5 families that have gotten sick. Because when
6 we go to the doctor, the doctor just raises
7 his eyebrows like, Oh, Rancho. It's thyroid
8 problems. Can you warn some people? We
9 started with low numbers too.

10 KEVIN MAYER: There are a couple of
11 issues that I don't want to get into all of
12 these details. It's very hard to make --
13 draw conclusions from -- unless you got a
14 large enough population. That you've got
15 enough control over what they have been
16 exposed to. But there are indicators of
17 greater or less health issues.

18 I am aware that EPA has -- at least
19 indirectly -- given money to research
20 organizations, University of California, to
21 try to get at some of these questions.
22 We've got -- what I think is a very good
23 study on Perchlorate. But it starts, not
24 very long ago.

25 QUESTION: How long ago?

PUBLIC MEETING

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2 KEVIN MAYER: In order to do it --

3 QUESTION: How many more people have
4 to get sick before something is done?

5 KEVIN MAYER: We're trying not to
6 expose anyone to this. That's what we're
7 trying to do. That's our first option. EPA
8 can't go back and undo exposures that have
9 happened in the past.

10 QUESTION: No. But they can figure
11 out if there's a big mass that people have
12 lived in a certain area for 20 years and
13 people in the family that are having thyroid
14 problems, surely somebody know this. When we
15 go to the doctors, they write it down. And,
16 you know, do you have anymore, you know,
17 brother or sister, or does so and so have
18 any thyroid problems. When you have lived
19 in a place for 20 years you would think you
20 would be a pretty good subject for them to
21 study. Especially, in some areas, you know,
22 where people have lived. Nobody warned us.

23 KEVIN MAYER: You make a good point.
24 And I can't get into -- I don't know enough
25 about how to do an adequate study on that.

PUBLIC MEETING

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2 QUESTION: But isn't that the whole
3 reason to try and clean up this water,
4 though, is for health reasons?

5 KEVIN MAYER: Yes. Absolutely.

6 QUESTION: Why shouldn't we be doing
7 something else to find out how much it's
8 affecting us.

9 KEVIN MAYER: Right. It's really
10 tough, like I say, to go back and fix --

11 QUESTION: If I was running a
12 business and I was contaminating people, I
13 would be out of business. Why is that they
14 get to continue on or they are not moved out
15 someplace else so they don't hurt anymore
16 families.

17 KEVIN MAYER: We're still left with
18 the contaminants here that we need to deal
19 with.

20 QUESTION: They are still in
21 business.

22 KEVIN MAYER: Yes, they are still in
23 business.

24 JACKIE LANE: Can we now take those
25 people who wanted to give public comment.

PUBLIC MEETING

1
2 DAVID BERRY: I have three public
3 comments. My name is David Berry, B-E-R-R-Y.

4 First comment. I've lived in Rancho
5 Cordova for the vast majority of time since
6 1958. I have a twin sister who died of
7 cancer. I have a daughter who has Grave's
8 disease, which is hyperthyroid. I have a
9 brother with prostate cancer. And the day
10 after tomorrow, I go to see if I have
11 thyroid cancer. That's kind of a high
12 percentage, although I'm almost 60.

13 My point is that you absolutely must
14 do some sort -- and this is what my wife
15 was getting to -- some sort of public health
16 assessment of the people in these affected
17 areas. And I know you have the ability to
18 pin it down by asking how long they have
19 lived, where else they have been, etcetera.
20 Because we know for a fact that the thyroid
21 problem is present. And we have never been
22 asked to be part of a survey. You
23 absolutely need to do that public health
24 assessment by doing a survey to see how many
25 people have already been affected.

PUBLIC MEETING

1
2 Number 2. Page 4 of this document,
3 Proposed Plan, indicates that Aerojet is in
4 the process of applying for zoning
5 modifications to its special planning area
6 designation by Sacramento County ordinance for
7 its land within OU-5 to allow for mixed
8 residential and commercial use. My comment
9 is that that is ludicrous. It's criminal;
10 should not be allowed.

11 Third comment. Although, I know
12 it's your place here, whenever you include
13 the general public, including the residents
14 in the affected area, there's an area that
15 be needs to be in some fashion addressed by
16 the government, whether it's EPA, the state,
17 the county. And that is the issue of
18 liability and compensation. The law that
19 you're acting under is called Comprehensive
20 Enviromental Response Compensation and
21 Liability Act. And I haven't heard a word
22 -- no criticism of you -- about compensation
23 and not much about liability. It's obvious
24 that Aerojet is liable. If they are paying
25 then they have accepted liability. It's

PUBLIC MEETING

1
2 proven. What isn't proven to somebody's
3 satisfaction is the connection between, for
4 instance, Perchlorate and thyroid problems.
5 It's very strongly indicated. And I don't
6 see anybody addressing that. I think that
7 that needs to be a part of your process to
8 direct -- if not to address it -- because
9 you obviously can't assign fines and all that
10 kind of stuff -- Aerojet will resist all
11 lawsuits until I'm dead and buried. This
12 will be going on until I'm 180.

13 I know that there have been lawsuits
14 filed. And I have read recently that the
15 courts put a stay on a case that was started
16 by the law firm that Erin Brockovich was
17 working for. The main attorney has died and
18 nobody has heard a word for years.

19 So clean up the mess, that's fine.
20 Address the damage already done to people
21 medically and physically, that part is
22 missing.

23 Thank you.

24 LARRY LADD: Hi, my name is Larry
25 Ladd. I'm a resident of Ranch Cordova,

PUBLIC MEETING

1
2 11064 Santiam River Court. I'm a regular
3 member of community advisory group for
4 Aerojet Superfund Site issues. Kevin and I
5 have been working together for 12 years.

6 The two issues I'm going to bring up
7 are not new to him. But I haven't had the
8 opportunity to bring them up for the record
9 in a formal setting.

10 My first comment is a question as to
11 why we are not using EPA Method 521 to
12 monitor the groundwater here. This is my
13 understanding. With the Aerozine 50 rocket
14 fuel that you've used at the east end of the
15 site, when it comes in contact with air, it
16 breaks down into --

17 THE COURT REPORTER: You need to
18 slow down and stand up, please. I cannot
19 understand what you are saying.

20 LARRY LADD: It also breaks down
21 into NDMA, Nitrosodimethylamine. My
22 understanding is that in lab test those are
23 -- that's not the only nitrosamine that's
24 formed by the decomposition of Aerozine 50.
25 There's an approved form by the EPA called

PUBLIC MEETING

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Method 521.

KEVIN MAYER: Speak a little slower,
Larry.

LARRY LADD: There's an approved
method that's been approved since 2004 for
multiple nitrosamines including NDMA, including
some of the nitrosamines that could come from
liquid rocket fuel. My understanding is, not
only is that test more comprehensive, but
it's cheaper than the neutron bombardment
test that we use now just to check for NDMA.
This is nothing new. Kevin and I have
discussed this for quite sometime.

For the record, I would like to know
why we don't use, EPA Method 521 on site?
And the follow up, in terms of treatment, my
understanding is that the ultraviolet that is
used to treat the NDMAs is specific --
wavelength that breaks up the NDMA, would it
also break up the other nitrosamines. I
suppose that's a detection question and a
treatment question.

Not specific necessarily to this
zone, but in terms of checking for vapor

PUBLIC MEETING

1
2 pressure off site, again, an old issue is,
3 the Sunriver neighborhood, which before the
4 Sunrise Bridge was built, was where the
5 (unclear) went out and percolated into
6 groundwater in the cobbles there, what is
7 called the Citrus Ponds. There's been no --
8 other than one drilling site, there's been no
9 other drilling in the neighborhood to see if
10 there's any purged VOCs presenting, a vapor
11 intrusion problem -- but that's outside the
12 scope of this particular project. But since
13 I got the microphone.

14 Thank you.

15 ELISSA CALLMAN: My name is Elissa
16 Callman, E-L-I-S-S-A C-A-L-L-M-A-N. I'm here
17 on behalf the City of Sacramento, Department
18 of Utilities, American River Source Water
19 Protection Program.

20 And I just have a quick question for
21 tonight. Thank you, for the presentation.
22 My question is whether it would be possible
23 for the remedial investigation and feasibility
24 study and tonight's presentation to be
25 available electronically?

PUBLIC MEETING

JACKIE LANE: Any other comments?

And for just people's information, we do have the Feasible Study online. That e-mail address is in your Proposed Plan.

I like to thank everyone for coming tonight. Kevin and I and some of our state counterparts will be here for any questions that you might have.

Thank you.

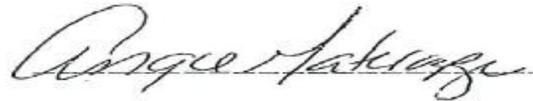
(Whereupon, the public meeting concluded.)

PUBLIC MEETING

CERTIFICATE

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I, Angie Materazzi, a Court Reporter and Notary Public in the State of California, do hereby certify that the foregoing record taken by me at the time and place as noted in the heading hereof, is a true and accurate transcript of same, to the best of my knowledge and belief.



Angie Materazzi

Dated: August 27, 2009

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PUBLIC MEETING, AUGUST 11, 2009

<p style="text-align: center;">Page 1</p> <p>1 2 EPA AEROJET GENERAL SUPERFUND SITE PROPOSED PLAN FOR OU-5 CLEANUP 3 4 5 PUBLIC MEETING 6 RANCHO CORDOVA CITY HALL 7 2729 PROSPECT PARK DRIVE 8 RANCHO CORDOVA 9 10 11 Public Meeting, held on August 11, 2009, 12 at 2729 Prospect Park Drive, Rancho Cordova, California, 13 commencing at 7:00 p.m., before Angie Materazzi, Court 14 Reporter and Notary Public in and for the State of 15 California. 16 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: center;">Page 3</p> <p>1 2 APPEARANCES: (CONT'D.) 3 4 PUBLIC COMMENT SPEAKERS 5 ANDY SOLUE 6 CONNIE BERRY 7 DAVID BERRY 8 LARRY LADD 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>
<p style="text-align: center;">Page 2</p> <p>1 2 APPEARANCES: 3 4 KEVIN MAYER, U.S. EPA REMEDIAL PROJECT MANAGER OUS 3 & 5 5 6 JACKIE LANE, U.S. EPA COMMUNITY INVOLVEMENT COORDINATOR 7 8 ALEX MAC DONALD, RWQCB PROJECT MANAGER 9 REGIONAL WATER QUALITY CONTROL BOARD 10 11 ED CARGILE, DTSC PROJECT MANAGER DEPARTMENT OF TOXIC SUBSTANCE CONTROL 12 13 LYNN SUER, U.S. EPA CHIEF OF THE CALIFORNIA SITE CLEANUP, SECTION 2 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: center;">Page 4</p> <p>1 2 PUBLIC MEETING 3 AUGUST 11, 2009 4 JACKIE LANE: Good evening, everyone. 5 I just wanted to thank you all for coming 6 out tonight and your for involvement in the 7 cleanup decision for the Perimeter Groundwater 8 Operable Unit 5 of the Aerojet-General 9 Superfund Site. It is much appreciated. My 10 name is Jackie Lane. I'm the community 11 involvement coordinator for this site. My 12 office is located in San Francisco. 13 I have made sure that most of you 14 have signed in and have picked up our 15 presentation as well as a copy of the 16 Proposed Plan, if you did not get it in the 17 mail. If you're not on our mailing list, 18 you will not get future mailings, so I 19 suggest to you that you check yes on the 20 box. If you ever need to get in touch with 21 me or our project manager Kevin Mayer, our 22 contact information is in the Proposed Plan 23 and also at the end of the presentation. 24 Now, to get why we are here tonight, 25 tonight we are here to present the Proposed</p>

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1
2 Plan as well as to gather verbal comments
3 from the public. After the presentation, I
4 will invite you all -- who's ever able and
5 would like to give a public comment. I want
6 to remind you that the original comment
7 period was from August 3rd through September
8 1st, 2009, but we had a request of an
9 extension and we have approved that, so the
10 extension is until October 1st. So we would
11 like to encourage you to get any written
12 comments, either by e-mail, fax, or by mail,
13 postmarked no later than October 1st, 2009.
14 We do have a court reporter present
15 with us, Angie. She'll be recording the
16 Proposed Plan meeting as well as the comment
17 period. And the recording is helpful for us
18 later on when we have to develop our
19 response to comments.
20 The comments that we receive tonight,
21 as well as the ones that we receive in the
22 mail, will be addressed and will be called a
23 responsiveness summary. And this will be
24 attached to the record of decision. The
25 record of decision actually memorializes EPA's

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1
2 decision for the Operable Unit 5, which we
3 will affectionately refer to as OU-5 for the
4 rest of the evening.
5 The comments that we receive, we
6 take very seriously and they can influence
7 our final decision. So if you do have
8 comments, we would love for you submit those.
9 After the record of decision is
10 approved, we will make it available in the
11 sites local repository and I will put an ad
12 in the local paper letting you know that
13 that's available. And the locations for the
14 repositories is also in your Proposed Plan.
15 We will also do a summary fact sheet that we
16 will send to our mailing list.
17 One thing I want to do right now is
18 just introduce a couple of people. One, is
19 Lynn Suer. She's the chief of our
20 California site clean up section two for EPA.
21 Then we also have with us tonight Alex
22 MacDonald. He's with the Central Valley
23 Regional Water Quality Control Board; and
24 then we have Ed Cargile, who is with the
25 California Department of Toxic Substances

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1
2 Control. And then finally we have Kevin
3 Mayer, who is the project manager for this
4 site.
5 Kevin will present to us the site
6 history. He'll talk about the Proposed Plan
7 alternatives that we have looked at. And
8 then he'll answer any clarification questions
9 on the presentation at the end.
10 If it appears to me that your
11 question is in the form of a comment, I will
12 stop you and say so. I'll ask you to state
13 your name and spell it, so that we can be
14 responsive when we have to develop the
15 responsiveness summary. If you do speak,
16 please speak loudly and clearly so that the
17 court reporter will be able to record everything
18 successfully tonight.
19 If you've never been to City Hall
20 and you need to find the restroom or water,
21 if you go to the right and to the right
22 again, you'll run right into the restrooms
23 and the water fountain. And without further
24 ado, I'd like Kevin to come up to present
25 the plan.

Page 8

1
2 Thank you.
3 KEVIN MAYER: Thank you, Jackie.
4 I'm wondering, do you all think I
5 need to use the microphone? If you do, just
6 give me a wave and I'll be happy to.
7 Otherwise, I'll be wondering about projecting.
8 Thank you so much for coming. I
9 really do appreciate you all showing an
10 interest in the project. I actually have
11 been on the project only a short while
12 relative to -- not only how long this has
13 been part of the Superfund program, but
14 certainly how long Aerojet has been here and
15 operating in the Rancho Cordova area. This
16 picture goes back into the Cold War, shows
17 some of the reason that Aerojet was here
18 with all of the dredge spoils and the big
19 wide open spaces.
20 Hopefully, you're aware -- we're here
21 in Rancho Cordova now (points at map). The
22 Aerojet property is here, just south of
23 Highway 50 and south of the American River.
24 But the Aerojet site, the Superfund Site, is
25 defined by wherever contamination has spread,

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1
2 where it started and where it's come to be.
3 So we will show you that the contamination
4 has spread through the groundwater outside
5 the boundaries of the Aerojet property. And
6 we have a couple of different projects going
7 on or pieces of the overall project. This
8 is only one of them. So if I can show you
9 -- this the Aerojet property there that big
10 open spot. Groundwater contamination is
11 spreading in various directions, including to
12 the west, toward Rancho Cordova here. What
13 this particular piece of the puzzle, is the
14 remainder of the non-property groundwater that
15 hasn't already been dealt with in the
16 Operable Unit -- what we call Operable Unit
17 3. And just for administrative purposes,
18 these are broken up into zones, but mostly
19 you won't have to worry about zones. Just
20 this colored part is Operable Unit-5. There
21 are also some soil areas that have been
22 appended to this Operable Unit 5. There are
23 going to be a couple of pieces to this
24 Operable Unit and a couple of pieces to this
25 presentation.

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1
2 So what I'm going to present is just
3 give you a general outline of the site, what
4 the Operable Units are, why we have broken
5 them up, and where they are, and our general
6 approach -- the Superfund approach to
7 cleaning this up. And then we have got
8 these two pieces. The groundwater piece and
9 the soil piece. So I'll try and step you
10 through what the nature of the problem is
11 and what we're trying to do here -- why
12 we're using various risk and regulations to
13 set some clean up levels. What the cleanup
14 alternatives are and why we are preferring
15 one in particular. And then, when we talk
16 about groundwater, I think we really do need
17 to talk a bit about soil vapor, since some
18 of the contaminants in the groundwater are
19 volatile. That is, they go from the water
20 into the soil gas and will move up toward
21 the surface. And then we'll talk about
22 soil, the problems, objectives, and the clean
23 up alternatives.
24 So this is both one of my favorite
25 and one of my least favorite maps. It's one

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1
2 that sort of tells me everything, but for
3 folks just looking at it, tells you nothing.
4 All right. Let me try to decipher this.
5 We have this broken line -- if you follow
6 this red line all the way across, that's
7 the further extent that we have measured
8 groundwater contamination in any layer of any
9 particular contaminants.
10 This colored area is the Aerojet
11 property. And you see we have broken it up
12 into these different colored sections. These
13 are five different Operable Units or pieces
14 that we're going to be trying to deal with
15 individually and ultimately tie them
16 altogether to an overall cleanup.
17 There are two major groundwater or
18 off site -- off property Operable Units.
19 One is OU-3, the Western Groundwater Operable
20 Unit, that goes through Rancho Cordova and up
21 into Carmichael; and then OU-5, is the one
22 we're talking about now. Now, why we've got
23 groundwater all around this site is because
24 the groundwater spreads in all of those
25 different directions. If you look at these

Page 12

1
2 black arrows, that's the general flow
3 direction of groundwater. So if you were
4 trying to contaminate as much groundwater as
5 you could, you would put it somewhere around
6 here so it would spread to the furthest
7 extent in all sorts of directions.
8 Certainly back in the Cold War era
9 they weren't thinking about groundwater
10 contamination. Well, we have to think about
11 it now because communities are all around
12 here and encroaching on some of the property
13 too.
14 So overall we have got seven
15 Operable Units. Two groundwater Operable
16 Units; and then five Operable Units of the
17 source areas. And this is one of those two
18 groundwater Operable Units. We are starting
19 to deal with some of the soil on the edges.
20 Let's talk about groundwater. When
21 EPA deals with groundwater contamination, our
22 first issue is to protect the public drinking
23 water. Much of that's has already been
24 dealt with. No one now is getting public
25 drinking water supply that doesn't meet all

Page 13

1
2 of the standards. But we're also trying to
3 do a couple of other things. To keep the
4 plume -- the extent of the contamination,
5 keep it from spreading any further and
6 affecting any other wells, we want to keep
7 -- basically, control the sources and then
8 eventually clean up the aquifer so that it
9 can be used. This is a simple way of
10 showing this. If this is the source, what
11 we're going to try and do is to keep the
12 furthest extent of the groundwater from
13 getting it -- groundwater contamination from
14 getting any further. But, as the
15 contaminants spread from the source, they
16 become more and more dilute and what we
17 would like to do is to cutoff the higher
18 concentration of groundwater before it reaches
19 out to the outer extent. And if we do it
20 properly, by cutting this off, in
21 intermediate area, we become much more
22 effective at extracting and treating the
23 higher concentrations of contaminants and we
24 allow the area in between to eventually clean
25 up somewhat faster. Now, fast is of course

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1
2 primary one of Operable Unit 5, is TCE.
3 It's a chlorinated solvent used to degrease
4 metal.
5 And in the water, we're trying to
6 contain the plume to the drinking water
7 standards, both federal and state. You can
8 see many of these standards are state
9 standards, which are more stringent than the
10 federal. Some are just federal standards.
11 MCL, stands for Maximum Contaminants Level.
12 That's the drinking water standard. These
13 are regulations. But, you'll notice these
14 two, NDMA and Dioxane, for which there are
15 not regulatory standards. In this case,
16 we're using health advisory numbers. One for
17 California and one that the federal levels
18 have for a health advisory. So these
19 numbers are set to alternatives to the
20 regulations.
21 Now, does this mean that this is
22 what we treat it to? Well, no, because part
23 of the clean up remedy, which I'll go into a
24 little bit more detail, is to treat it to an
25 end-use concentration. And for many reasons

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1
2 all relative. But, we'll show you some of
3 the estimates.
4 All I wanted to show you with this
5 slide, from the Sierra Nevada into the
6 Central Valley, is that the land that we're
7 on now is made up of layer after layer after
8 layer of materials that's washed down from
9 the mountains. And so it's not quite so
10 simple as a two-dimensional issue. We have
11 got multiple layers that make it a little
12 bit trickier so that we have to make sure
13 that we get all three dimensions, not just
14 the two that I just showed you with that
15 simple target.
16 What contaminants are we looking at?
17 We got a range of them but primarily there
18 are three: Perchlorate, which is an anion,
19 a salt; NDMA, which is semi-volatile organic
20 chemical; and then what we will oftentimes
21 call VOCs, volatile organic chemicals.
22 Volatile, means it will go off into the air
23 and usually that's what it does, except when
24 it gets into the groundwater and then we
25 have to clean up those contaminants. The

Page 16

1
2 because some of this will -- probably most
3 of it -- will eventually get into surface
4 water, the treatment standards for discharge
5 of surface water, are even more stringent
6 than these. So when we treat this water, we
7 have to treat to --
8 Yes. You had a question?
9 QUESTION: Are you saying discharged
10 surface water standards are more stringent
11 than drinking water standards?
12 KEVIN MAYER: Many of them are, yes.
13 Not all of them are, but many of them are.
14 QUESTION: Is that what you were
15 talking about now?
16 KEVIN MAYER: Yes.
17 This is also a complicated slide.
18 What we're trying to show here is that in
19 order to stop the groundwater contaminants
20 from spreading, we need to put in wells and
21 pumps and pump the contaminated groundwater
22 so that as the water flows off the site, it
23 gets caught in these wells and brought back
24 -- these dotted lines are pipelines -- to
25 various treatment systems around the site.

Page 17

1
2 So notice the dark red line is the
3 extent of contamination. What I want to do
4 is show you this area up here as an example.
5 So what we have is this dark area where the
6 contamination already has migrated. When we
7 get all the wells in place -- many of them
8 are already in place -- when we get all of
9 these wells in place and operating, then
10 we'll be able to be capture all of the
11 contaminants plume. This outer red line, is
12 the capture zone. So it's like the drain in
13 the bathtub. You see the water being pumped
14 out or drained out. It forms that
15 tornado-shaped zone of depression and the
16 water then flows into the well instead of
17 flowing beyond into clean areas.
18 If all we wanted to do is to
19 capture this, we would just need to add a
20 couple more wells, make sure the treatment
21 system that's back in this area -- the GET,
22 Groundwater Extraction Treatment System -- is
23 fully operating and we will have capture.
24 But we want to do another step, which is to
25 add a couple of more wells down toward the

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1
2 source that capture the higher concentration
3 material before it gets into the furthest
4 extent of the plume and that way we will
5 clean this area up to the beneficial uses
6 more rapidly.
7 Well, how much more rapidly? This
8 is probably impossible to see. What this
9 says is that with groundwater containment
10 alone -- once we get those sources under
11 control -- we're looking at 150 to 350 years
12 before these various parts of the groundwater
13 -- the contaminated groundwater plume are
14 cleaned up. If we add another step, which
15 is what we call groundwater containment with
16 mass removal, we cut these times -- in some
17 cases by over 100 years, and in some cases
18 only a few decades. But what we notice is
19 that the cost, the increased cost, to do
20 that increased pumping, really isn't all that
21 much more expensive and doesn't really make a
22 big enough difference over the long run if
23 we're talking about times that go to 100
24 years or so.
25 This is a simplified evaluation,

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1
2 looking at EPA Superfunds 9 criteria for
3 deciding on a cleanup. What this says is
4 these top two we have to meet. It has to
5 be protective overall. It must comply with
6 state and federal laws. And then we look at
7 long-term effectiveness. Something we call
8 implementability, can we actually build the
9 thing. Short-term effectiveness, which means,
10 while we're putting the remedy into place,
11 will there be any risks to the community or
12 to the workers while they are putting it
13 into place. And EPA Superfund is very big
14 on reduction of toxicity mobility or volume
15 by treatment. We don't like leaving stuff
16 there. We want to clean it up and go away.
17 And then the other criteria, are costs; state
18 agency acceptance and community acceptance,
19 which is what we're talking to you about
20 today.
21 What I want to point out is, no
22 action, we have to use that as a baseline.
23 And, of course, it doesn't meet any of our
24 criteria. Groundwater containment does pretty
25 good. It's going to take longer, so the

Page 20

1
2 long-term effectiveness is only partially met.
3 The dark means it fully meets the criteria.
4 The white means it doesn't meet the criteria;
5 and half and half means it's -- gets you
6 part way there.
7 But if we do groundwater containment
8 with mass removal, what we prefer, we're only
9 adding a few million dollars -- maybe 10
10 percent or so -- to the overall cost over
11 the next 30 years and we do get more rapid
12 clean up.
13 So let me explain the three parts.
14 This shows the different groundwater
15 extraction and treatment systems, what they
16 are supposed to capture.
17 Let me show you a picture of this
18 treatment plant here. So we have got
19 multiple contaminants, we need multiple types
20 of treatment systems. But this is already
21 in existence. All the treatment systems are
22 up and as of today -- well, there's one
23 that's still being built. That's right.
24 But the major one is up and running. So
25 we've got very standard, very reliable

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1
2 treatment technologies. For the three
3 different types of contaminants, we'll need
4 different types of treatment. In this case,
5 we've got at least two of the different
6 types of treatment. We'll have three
7 different kinds of treatment.

8 QUESTION: Are you currently -- is
9 that treatment plant currently receiving the
10 plume -- Sailor Bar contamination, is that
11 being pumped into the American River to that
12 Aerojet site you just showed?

13 KEVIN MAYER: You're talking about
14 the Sailor Bar, this one out -- Zone 1,
15 right?

16 QUESTION: Because you currently have
17 -- I don't know how many wells or pumps at
18 the intersection of Sailor Bar 503 and 4 and
19 there's probably four or five or six there
20 at the street at Emperor and Kenneth Avenue.
21 They take samples there periodically right in
22 that spot.

23 KEVIN MAYER: They are monitoring
24 wells and extraction wells. Most of the
25 extraction wells for this area are in place

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1
2 and they are pumping and they are being
3 treated.

4 QUESTION: That is coming back to
5 Aerojet?

6 KEVIN MAYER: Right. There's
7 pipelines through here. There's -- I keep
8 getting mixed up with the Carmichael area,
9 which isn't coming across, but that's in
10 OU-3.

11 QUESTION: Since you're talking about
12 that area. There was a plan to monitor the
13 well at the intersection of Park and Winding
14 Way. And then after that there was going to
15 be an extraction well and that was supposed
16 to be built last year. I've attended a
17 couple of meetings on that.

18 JACKIE LANE: Can we do that right
19 after he finishes the presentation? And we
20 can actually talk to you further about the
21 continuation of the clean up. If that's
22 okay with you? We'll be here so we can get
23 all of your questions answered. But I want
24 Kevin to go on and try and complete the
25 presentation.

Page 23

1
2 KEVIN MAYER: Neither of them have
3 been built yet and we're still talking to
4 the homeowner that is adjacent to those well
5 sites.

6 What I wanted to talk to about on
7 this is that once it's treated, it's
8 primarily discharged to surface water
9 currently. EPA has no objection to Aerojet
10 reusing that water for like a cooling tower
11 uses. But ultimately it will be discharged
12 to surface water. And because it's
13 discharged to surface water, depending on
14 where you are to different water bodies, the
15 treatment levels for surface discharge, must
16 meet state discharge limits. If it's on
17 site, it must meet all the numbers. If it's
18 discharged off site, it must get a permit
19 from the state.

20 I wanted to shift gears a little bit
21 and talk about vapor intrusion. Because the
22 last several years have been primarily
23 researching the potential risks from these
24 volatile organic chemicals in the groundwater
25 that could move into the soil gas and

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1
2 eventually migrate up to the soil surface.

3 Now, they move in such a way that
4 immediately above the soil surface is, you
5 know, diluting into the atmosphere, but if
6 there's a building on there and the building
7 is a slab or the basement is cracked, just
8 as in Radon issues, you can get the
9 potential for accumulation. So we took a
10 very careful look at the groundwater
11 contamination levels and all the physical and
12 chemical parameters in the soil above the
13 water table. And we're looking at perhaps
14 100 feet between the water table and the
15 soil surface.

16 And we looked pretty hard to get --
17 not just calculations -- but to actually get
18 a lot of samples of the water in the soil
19 gas to really measure how it's moving up.
20 We took more than our -- nearly 300
21 locations, we took soil gas and water samples
22 to feed into our estimate. And the good
23 news is that, for the vast majority,
24 essentially all of the off site, off property
25 groundwater, that the risks are not -- do

Page 25

1
2 not trigger any action that we need to take.
3 Bad news is that on some of the property --
4 that's still on Aerojet property -- there are
5 a couple of places where we can measure the
6 soil gas that's not at acceptable or
7 protected levels. So we need to deal with
8 that.
9 Which gets me into what we're
10 talking about in terms of the soil clean up.
11 Now, our objectives in these contaminated
12 soil areas, are to protect the groundwater,
13 to prevent exposure of those gaseous
14 chemicals, to get it down to protective
15 levels, and to ultimately eliminate exposure
16 of these non-volatile chemicals that could be
17 in the soil as well.
18 What are we talking about? We are
19 here in the soil areas here. We have
20 measured a bunch of different chemicals, not
21 all of these chemicals are every place. In
22 fact, none of them -- in no location do we
23 have them all. And they vary from lead and
24 mercury, silver and zinc metals, to
25 Perchlorate, the salt, and some organic

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1
2 chemicals that will come out into the air
3 and some that won't. Dioxin, D-I-O-X-I-N, is
4 one of those semi-volatile or non-volatile
5 chemicals. And we have got various reasons
6 -- since there's no equivalent to a drinking
7 water standard for soil, we do risk
8 evaluations. And the basis for these risks
9 are whether they are cancer or non-cancer.
10 And these concentrations in the soil would be
11 protective under residential use or what we
12 call unrestricted use -- assuming that there
13 will be kids getting their hands dirty,
14 kicking up dust, people growing gardens on
15 that. So typically the residential use is
16 the most restrictive. Although, for some of
17 the metals, Cadmium and Chromium, it would be
18 the construction worker kicking up dust that
19 would be most at risk. For commercial, use
20 where you don't have quite that level of
21 exposure, the soil concentrations tend to be
22 lower.
23 One thing I want to add is that for
24 Perchlorate, since it is a very soluble salt,
25 we're looking at a much lower level to

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1
2 protect the groundwater. If there's any
3 water that comes on it, it could flow down
4 to groundwater.
5 Let me show you. These blue circles
6 are areas that we studied but found that we
7 don't need to clean those up. They are
8 already at protective levels. These red
9 circles -- 1, 2, 3, 4, red circles are
10 contaminated with typically metals. Although,
11 in this case there's Perchlorate as well.
12 What we need to do there is to dig that
13 material out and take it to a certified
14 landfill and replace it with clean soil.
15 QUESTION: Is that all Aerojet
16 property?
17 KEVIN MAYER: Yes. This is all on
18 all Aerojet property, right.
19 In this area, we have sort of blown
20 this up here. Let me explain that. In
21 this area, there are four locations where we
22 have got those volatile chemicals. And what
23 the standard way of dealing with that, is to
24 put a temporary cap over it and just pump
25 soil gas until we have cleaned that out. So

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1
2 we have got excavation, soil vapor
3 extraction, and then we have got some that
4 are a bit problematical. These green
5 locations are where there is volatile organic
6 chemicals in the groundwater. And until the
7 groundwater gets cleaned up, soil vapor
8 extraction won't protect these -- at least to
9 the residential levels. So we're looking at
10 ways to control exposure until the
11 groundwater gets cleaned up.
12 QUESTION: First question. You said
13 you're cleaning this up. Are you cleaning
14 it all up to the residential level?
15 KEVIN MAYER: Yes.
16 QUESTION: The second is, how do we
17 decide when to excavate versus use soil
18 vapor?
19 KEVIN MAYER: For metals, they don't
20 go into the vapor. They are there in the
21 soil. So you got to dig those out. Soil
22 vapor, you could dig it out, but it will
23 potentially come back up in the gas. So
24 that's where you use soil vapor. That's the
25 most effective way to go.

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1
2 Thank you for asking that.
3 This is a little bit confusing.
4 What we have done is broken into those three
5 categories. This is the excavation. This
6 is the soil vapor extraction. And one
7 possibility was to leave this property solely
8 for commercial use or non-residential use.
9 And so one possibility was to cap it and put
10 on a land use controls deed restriction.
11 But we weren't too happy with it. It didn't
12 reduce toxicity. So what we're trying to do
13 is to do a more aggressive clean up. That's
14 our preferred option. It does cost several
15 times more. But in terms of the overall
16 site expenses, it's not that much more. Plus,
17 it deals with the problem, and I won't have
18 to do reports every five years on whether
19 this is protective or not.
20 Unfortunately, those green areas we're
21 not exactly thrilled about vapor mitigation
22 and deed restrictions. But until we've got
23 a better way of dealing with it, that seems
24 to be the only viable option.
25 So, basically, I'm toward the end

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1
2 here. What we need to do -- we're sort of
3 working in toward the center. And after
4 this Operable Unit, we will be dealing with
5 the source areas. So we have got to deal
6 with the source areas before we can
7 ultimately clean up this entire site. All
8 we're doing is a piece of the puzzle and
9 we'll try to eventually get this -- get the
10 entire site cleaned up. It's going to take
11 many years before we propose solutions to all
12 of these source areas and many many, more
13 years before the groundwater is all cleaned
14 up.
15 This is basically the end. We've
16 extended the comment period to October 1st.
17 Please get your comments by e-mail, phone,
18 fax, letter, postmarked no later than October
19 1st. I think conveniently you can't read
20 where to send it. That's my name. My
21 address is on the back of the Proposed
22 Planned.
23 Thank you.
24 JACKIE LANE: If you don't mind, we
25 can have some clarification questions on the

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1
2 presentation. And then we'll open it up for
3 public comment. Before we start with the
4 questions for the presentation, how many of
5 you would like to make a public comment
6 tonight?
7 Go ahead, sir.
8 QUESTION: I think it's on Page 15
9 of the printout. I notice that it says,
10 Overall Protectiveness meets criterion. But
11 in the Long-term Effectiveness, it only
12 partially meets the criterion. And then in
13 the Reduction of Toxicity, says that it
14 doesn't meet the criterion. Can you explain?
15 Can you explain what those partials mean and
16 what's the long-term impact of that?
17 KEVIN MAYER: First of all, the no
18 action, doesn't mean anything. I think what
19 we're looking at is for those areas with the
20 volatile contaminants, until we get those out
21 of the ground, we really haven't fully
22 cleaned up that site. So if all we do is
23 leave it where it is, and then just protect
24 the people living over it, even though we're
25 protective -- that's that top one -- we

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1
2 haven't met this criteria. Now, the ones
3 that we must -- that we are required to meet
4 -- are those top two. We have to meet
5 those. Because if it's not protective and
6 it doesn't follow the law, we're outside of
7 the Superfund Legislation. We really want
8 this to be fully meeting the criteria. But
9 if it just partially meets it, that's better
10 than just leaving it there.
11 QUESTION: So if the circle is only
12 half filled, that means it's not meeting it
13 totally?
14 KEVIN MAYER: Not meeting the
15 criterion.
16 QUESTION: Does that half filled
17 mean it's compliant?
18 KEVIN MAYER: It's at least
19 partially. We would need to work it out
20 with the state to get it fully compliant.
21 But, yeah, the way it is -- until we get a
22 deed restrictions in there -- if the cap
23 works and the deed restriction is effective,
24 then it would probably would meet the state
25 requirements.

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1
2 QUESTION: But you're going for the
3 one in the white anyway, right?
4 KEVIN MAYER: We're suggesting --
5 this is our preferred alternative.
6 What I'm trying to tell you, is
7 that, I, as the technical project manager for
8 EPA, I'm not very confident that we will
9 fully meet the criteria in the ones that are
10 partially filled. And there lots of reasons
11 that there could be. But in this case,
12 we're not sure that capping alone is going
13 to keep -- really --
14 JACKIE LANE: And as part of the
15 record of decision, you will be explaining a
16 lot of that, right?
17 KEVIN MAYER: Yeah, that gets
18 explained in great detail.
19 QUESTION: In the areas where it
20 required additional pumping to clean up the
21 groundwater before you can clean up the soil
22 -- overlying soil -- has there been any
23 estimates of how long that pumping might
24 take?
25 KEVIN MAYER: No. Because part of

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1
2 that is working with the next Operable Unit
3 from the source area to get that source
4 dealt with. But generally, you're probably
5 looking at a decade or multiple decades.
6 Groundwater takes a long time to
7 contaminate this widely and it takes a long
8 time to get it out of there.
9 QUESTION: Is Aerojet still
10 contaminating?
11 KEVIN MAYER: Are they still
12 contaminating?
13 QUESTION: Is their process still
14 producing contaminants? They are still
15 operating.
16 KEVIN MAYER: They are still
17 operating. Their, what we call, somewhat
18 euphemistically, their housekeeping is much,
19 much better. So, no, they are not -- my
20 understanding is they are not putting more
21 contaminants into the soil and into the
22 groundwater.
23 We do now have regulations that are
24 both federal and state regulations about how
25 to handle toxic chemicals. However, there

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1
2 are parts of the soil and contaminants that
3 have gotten in high enough concentrations
4 down into the groundwater, that they will
5 continue to add to the groundwater until we
6 get those under control -- those source areas
7 under control.
8 QUESTION: In a best case scenario,
9 it looks like the groundwater will be
10 contaminated for at least 120 years.
11 KEVIN MAYER: These are estimates.
12 But, yeah, a century. Certain parts of the
13 groundwater will be contaminated that long.
14 QUESTION: First of all, in the
15 literature I didn't see any estimate of acre
16 foot pumped per year. I don't know if
17 that's been done. And secondly, it's kind
18 of a follow up to what earlier discussed.
19 Has there been any consideration, any of the
20 analysis, since groundwater is a limited
21 resource, some kind of aquifer recharge?
22 KEVIN MAYER: To answer your first
23 question, for this Operable Unit, we estimate
24 10 to 15 million gallons a day. 10 million
25 gallons is 3-acre feet, so 3- to 5-acre feet

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1
2 a day for this Operable Unit. And this is
3 half of the overall site.
4 Groundwater replacement, groundwater
5 recharge, I don't have a recharge plan in my
6 Operable Unit. One of the issues are that
7 if we were to cycle it back into the soil,
8 you know, that might be one way to flush
9 contaminants through the source areas. But
10 we are really looking at the source area.
11 We're very concerned about conserving
12 water. Even though water is going into
13 surface water, there are instances where the
14 users of the American River are being able
15 to use that water. It's a complicated
16 question and I don't have a real clear
17 answer.
18 JACKIE LANE: Could you spell your
19 name.
20 ANDY SOLUE: Sure. Andy S-O-L-U-E,
21 California American Water Company.
22 QUESTION: I have two quick
23 questions. One, you didn't find any soil
24 contamination either in Rancho Cordova,
25 outside of the Aerojet property or in Sailor

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2 Bar?

3 KEVIN MAYER: No. And basically the
4 main factors are how highly contaminated --
5 what the concentrations are in the
6 groundwater. So as you get further out, it
7 becomes more and more dilute. So the amount
8 of -- the total mass getting into the soil
9 vapor is less and less as you get as you
10 get further away from the sources.

11 The second factor is how far it is
12 to the water table. As you get further from
13 the site, the contaminated layers are deeper
14 and deeper. So you get both less mass and
15 more dilution. To answer your question, the
16 answer is, yes. I gave you a couple factors
17 as to why that's not unexpected.

18 QUESTION: This is a very simple
19 question that maybe is not as simple as it
20 sounds. One of your pictures that you
21 showed us, a bullet, when you're trying to
22 focus on your wells right there and get
23 right at the center of the source. If you
24 look at the --

25 KEVIN MAYER: The target, yeah.

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2 QUESTION: If you look at the maps
3 of Aerojet, it's almost as if you could draw
4 a line, let's say, at Hazel and west of
5 Hazel, going east to Prairie City Road, for
6 instance, you don't have the contaminants
7 there. So if you have the source right
8 there toward the center and the aquifers are
9 going from east to west, then wouldn't it be
10 -- maybe like I said too simple -- to say
11 that it's beginning in one spot there, why
12 couldn't you find some source right there if
13 it's continued all of these years to continue
14 to pollute the water, why can't the there be
15 some way to focus on that area where it
16 begins and really start drawing out there.
17 Because I would think that it would make it
18 much more simple to clean the water up
19 further down stream.

20 KEVIN MAYER: You're right. And in
21 most Superfund Sites, that's exactly what we
22 would do. The scale -- I'm not sure that I
23 explained the scale. We're looking at over
24 10 square miles of Aerojet property and 27
25 square miles total of property and

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1
2 groundwater contamination. So over this 10
3 square miles, there were dozens and dozens
4 and dozens of operations: Burn pits,
5 chemical tests, and wastewater discharges.

6 My simplification, was not to suggest
7 there was a point, but that there's an area
8 that's of higher concentration. And as you
9 move away, you get more and more dilution.
10 We want to cut that off where you're getting
11 more bang for your buck as you pump that out
12 and allow that area in between the various
13 capture zones, the -- if we cut the plume
14 off here, we got a better chance of this
15 part of the plume cleaning up faster.

16 I'm not sure I answered your
17 question, except to say, it is very
18 complicated.

19 JACKIE LANE: We have one more
20 question. You want to add to that?

21 ED CARGILE: That really is the
22 plan. Since 1979, the goal has been to try
23 and contain and to stop the spread. And
24 this portion -- this OU will finish
25 controlling the spread of the problem.

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2 Aerojet is already underway on various OUs --
3 five OUs, on the property, to try to develop
4 the plan to get the source controlled in
5 place. So we have the outer edge
6 controlled. We have an intermediate area
7 around the property boundaries where it's
8 being controlled and then there will be
9 source controlled inside. So we're getting
10 the highest concentration.

11 QUESTION: Is it the same old thing,
12 that we have to dig and drill?

13 ED CARGILE: Thousands and thousands
14 of samples are being taken right now.

15 JACKIE LANE: We have one more
16 question.

17 QUESTION: When you were talking
18 about the soil contaminants and the numbers
19 that you have down here. You said the
20 levels came from assessments and they were
21 protective to a certain level. And I was
22 wondering what that level was?

23 KEVIN MAYER: When we clean
24 something up, we -- depending on whether --
25 there are two broad types of contaminants.

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2 One, we call carcinogens; and the other, are
3 non-carcinogens. For carcinogens, our goal
4 is to reduce the risk to what we call one
5 in a million, which means that -- just by
6 being an American -- an additional one in a
7 million chance of getting cancer. For
8 American, you've got about a 1-in-4 chance of
9 developing cancer. And what we want is that
10 from these chemicals, we want you to have a
11 1-in-4.000001. So that's our clean up
12 objective.

13 For non-carcinogens, we have,
14 depending on the toxicity, we have what's
15 called a hazard index or health index. And
16 we want to be below a fairly conservative
17 number that's considered protective of
18 whatever effect that is. Lead could be
19 Neurotoxin.

20 JACKIE LANE: We have one more
21 question.

22 QUESTION: If Aerojet is no longer
23 adding contaminants and the source of the
24 contamination has been identified is -- I'm
25 having trouble understanding how movement of

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1
2 the water is still carrying contaminants.
3 It's like, you know, if you have water up
4 here and it's running down there, after
5 awhile there is no water up here. So is
6 the source of the contamination, that
7 concentrated area of soil, continuing to seep
8 down and feed into the groundwater or has
9 all that already taken place and we're just
10 talking about cleaning up one great big
11 reservoir of contaminated water?

12 KEVIN MAYER: I think you've
13 answered your question very well. But it's
14 not just the contaminants like Perchlorate,
15 which is a salt. So whenever you have water
16 coming from, you know, the sky or if they
17 were to spread water, irrigations -- they
18 don't -- then you would get water moving
19 down through the soil column picking up the
20 contaminants and carrying it to the
21 groundwater. That's also true for a lot
22 these organic solvents. Especially, if you
23 dump motor oil onto the ground, you would
24 get those blobs of oil or oily dirt in the
25 soil and then as water comes down through,

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1
2 it picks a little bit of this up, even
3 though oil isn't very soluble in water, but
4 it will pick some of it up and carry it to
5 the groundwater. There's another issue, if
6 you dumped enough of these solvent or oily
7 gunk onto the surface, some of that would
8 migrate all the way, as a liquid, into the
9 water and you'll have blobs of this stuff in
10 the water. And now those blobs -- you know,
11 those oil droplets, aren't going to move --
12 the groundwater doesn't move all that fast,
13 maybe a foot a day. It's not that fast.
14 But what does happen is that, even though
15 it's only slightly, only a little bit of it
16 dissolves slowly, enough of it dissolves that
17 when you're looking at parts per billion or
18 in some cases parts per trillion, as a
19 protective level, that you don't want in
20 drinking water, that can continue to
21 contaminate any water that is moving through
22 that contaminated area. When you get those
23 blobs in the water, that is a real bear to
24 get out. And we've got spots all over
25 there, some that we haven't even identified.

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2 You can put thousands and thousands
3 of wells over ten square miles and, you
4 know, you're still having to interpret in
5 between those wells to what is there.

6 QUESTION: Will there be a public
7 health survey for selected residents in
8 Rancho Cordova and Fair Oaks to see whether
9 indeed there is a health problem now and in
10 the future? In Fair Oaks, one of our wells
11 has been closed. Has there been any
12 suggestion or is there a movement to do
13 that?

14 KEVIN MAYER: I'm not aware that
15 we're going to do another public health
16 assessment. Typically, we look at what the
17 -- you know, the ways that contaminants get
18 to people. And if we measure what's in the
19 drinking water -- which is very highly
20 monitored -- then we have to think what
21 other ways are there.

22 In some cases, you might have
23 noticed, where we're concerned about, soil
24 vapor, we would need to monitor that to see
25 whether we're actually are protective.

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1
2 QUESTION: You said another survey.
3 KEVIN MAYER: The ATSDR, typically
4 does those things. And if they did it, it
5 was a long time ago.
6 JACKIE LANE: We have another
7 question.
8 QUESTION: On Page 15, again, it
9 speaks of deed restrictions. What does mean
10 to the EPA? Is that commercial versus
11 residential use? What does that mean?
12 KEVIN MAYER: There's a wide range.
13 It can mean many, many things. One, is that
14 it can be restricted to non-residential use.
15 So, for example, I've got a site in
16 Sacramento, where we're looking at a deed
17 restriction. You're not allowed to put a
18 residence there. You're not allowed to put
19 a school or a hospital, things like that.
20 It's restricted to commercial or residential
21 where the exposure is much less than to have
22 somebody actually living there.
23 We could also require in the deed
24 that -- that a -- say a soil vapor system
25 is in place and that it's monitored

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1
2 regularly.
3 JACKIE LANE: It's very site
4 specific.
5 KEVIN MAYER: Chemical specific.
6 ED CARGILE: It is part of the
7 deed. If you divide the property, it moves
8 with the deed. So it's for the benefit of
9 anyone who wants to buy and live there, it
10 clearly states what the problem is and what
11 the controls are.
12 JACKIE LANE: We have another
13 question.
14 QUESTION: This has to do with
15 residents. We've been a resident in Rancho
16 Cordova for like over 20 years. I've raised
17 children since they were two years old. It
18 has to do with the health issues. And I
19 was wondering if anybody has done any kind
20 of survey of people who have lived in these
21 places for a long period of time, that these
22 wells have been shut down.
23 I have two members in my family, one
24 has Graves' disease that was diagnosed at 15
25 years old; and I have a husband that has

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2 nodules, might be cancerous, we'll find out
3 in another day or two; a son that has a
4 weird cysts on his legs.
5 I don't understand why -- we're
6 talking about the chemicals and the areas
7 that you're going to clean up. What about
8 the effect that this is having and just
9 because you close the wells -- of the other
10 residents that have been living here for 20
11 some years. Have you done any -- I mean,
12 has anybody investigated any of these
13 territories?
14 JACKIE LANE: What I suggest you do
15 is give your name and spell it for us and
16 this becomes part of your comment area. And
17 we can make sure you have an answer to your
18 question.
19 CONNIE BERRY: Connie, B-E-R-R-Y.
20 JACKIE LANE: Are there any other
21 questions?
22 QUESTION: My question is, what is
23 my comment going to add or take away from
24 OU-5 actually becoming a reality? What is
25 my comment actually going to do?

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2 KEVIN MAYER: Depends on the
3 comment.
4 QUESTION: If I say don't build it,
5 you're not going to build it?
6 KEVIN MAYER: A lot of these things
7 are already built.
8 QUESTION: That's right.
9 KEVIN MAYER: I've had plenty of
10 projects that have altered -- where a public
11 comment has altered not necessarily -- well,
12 in some cases what we did. But usually how
13 we do it and how we avoid causing more
14 problems that we wouldn't have known about.
15 This goes back 20 years ago, but in
16 Southern California, we had a situation where
17 we were looking at couple of different ways
18 of treating these volatile chemicals. There
19 already was a treatment system in place that
20 blew the volatiles into the air. And we got
21 some pretty strong comments that that didn't
22 make a lot of sense. Well, it doesn't make
23 a lot of sense to EPA either. When we have
24 the community making those sorts of comments,
25 we say, yes, we've got to switch to the

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1
2 other type, even though we've got that one
3 type already built. We want to switch to
4 the other type that keeps it in the carbon
5 filter.
6 We have done things that we've --
7 you know, when pipelines haven't already been
8 built, we have been able to time our
9 construction to avoid sensitive periods or
10 sensitive areas. I can't tell you exactly
11 how you'll make a difference, but I can tell
12 you that it has made a difference. And even
13 if you think it's not making a difference --
14 for example, if you say, Oh, well, we
15 support your preferred option. Realize that
16 there -- oftentimes, other folks who are
17 going to be making comments saying, Oh, no,
18 that's too expensive. You should do this or
19 do this other thing. So when we have got,
20 you know, comments from community and
21 comments from other types of stakeholders,
22 that really helps us -- helps me write the
23 records of decision, saying, you know, if I
24 look at the community acceptance, that's a
25 strong issue for going one way or another.

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2 engineer. How does that happen that when
3 you give somebody water that's hurting them
4 for ten years and then you find out after
5 people get sick, as opposed to checking the
6 water before you give it to them.
7 KEVIN MAYER: I'll give you a couple
8 of examples. One, is that -- this is
9 decades ago. But 30 years ago, people --
10 water agencies and regulatory agencies, were
11 not routinely checking groundwater for these
12 industrial chemicals. Part of the reason is
13 that, until you got to -- sort of
14 state-of-the-art researchers, the assumption
15 was that soil cleaned contaminants. And that
16 the groundwater was being protected by all of
17 that layer of soil. It's not so true with
18 things that don't breakdown microbially,
19 bacteria.
20 Yes, you can put a septic system
21 near the surface. And by the time it gets
22 to the groundwater -- at least some of the
23 nitrogen and some of the other things are
24 taken out by natural processes. When you
25 put in something that the bacteria are not

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2 JACKIE LANE: We have two more
3 questions and then we're going to try and
4 open it up for public comment.
5 QUESTION: While we're talking about
6 money, who is paying for this?
7 KEVIN MAYER: Aerojet. Aerojet is
8 paying it for directly.
9 QUESTION: We really don't care how
10 much this is going to cost?
11 KEVIN MAYER: Yes, we do. Because
12 Aerojet is government contractor. There some
13 -- ultimately what they sell to the federal
14 government is likely to come out of the tax
15 payer.
16 QUESTION: This lady mentioned how
17 we ended up shutting down wells. Why does a
18 well get shut down? Is that we were giving
19 people water and we weren't checking and then
20 we found out later? How does that happen
21 that when you end up giving people water for
22 a long period of time and then you find out
23 you were giving them water that was hurting
24 them? I just don't understand the process.
25 I'm an engineer also -- different type of

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2 used to breaking down like, TCE.
3 So there was a learning process that
4 went on. Certainly that happened throughout
5 California where once you started looking for
6 it, there it was and wells shut down all
7 over the place for VOCs back in the --
8 primarily in the 70s -- when that big thing
9 happened. But even up into the 80s, people
10 were thinking, Oh, no, our water system is
11 way back in the San Bernardino Mountains.
12 We don't have to worry about these chemicals
13 and yet it showed up.
14 Perchlorate is an example. Until
15 just three years ago, there was no standard
16 for Perchlorate. Until ten years ago, there
17 was no good way of measuring Perchlorate at
18 levels below about a part per billion. Now,
19 we can not only measure it down below a part
20 per billion, but at least in California --
21 the federal government is hanging on behind.
22 They may never catch up to California -- but
23 California established a drinking water level
24 at 6 parts per billion. So until we started
25 being able to measure it, to even bother

<p style="text-align: center;">Page 53</p> <p>1 2 looking for it, and then to decide, you 3 know, what's the right number for protecting 4 it, Perchlorate wasn't being dealt with at 5 all. 6 QUESTION: Just a follow up. 7 When you look at water, are you only 8 saying, Okay, I have a glass of water and 9 you check it to see what's in it as opposed 10 to testing it to see if it's pure water? 11 If I don't know what I'm looking for, there 12 still could be something in the water today? 13 Do you understand my question? 14 KEVIN MAYER: Yeah. There's lots 15 and lots of stuff in the water, just because 16 we're in the world and stuff gets into the 17 water. But generally it's at such low 18 levels, you can't even measure it. There 19 are ways of measuring most kinds of 20 chemicals. That when we take groundwater 21 samples -- especially around a Superfund 22 Site, we're looking for not just those list 23 of chemicals that I showed you, but we're 24 looking for anything else that shows up in 25 the gas chromatograph. And then we're trying</p>	<p style="text-align: center;">Page 55</p> <p>1 2 major chemicals that are likely to cause 3 these various health problems. And you're 4 not the only who's asked that question. In 5 fact, EPA asks that question -- by law we 6 have to ask that question over and over and 7 over and over again. 8 JACKIE LANE: We have one more 9 question. 10 KEVIN MAYER: We will never stop 11 asking that question. 12 QUESTION: My question is, we were 13 never told there was anything wrong with the 14 water, and that was in the 80s. We have 15 lived ever since then. And the children 16 were in the developmental ages. This family 17 has a lot of problems and no one else in 18 their family has those kinds of problems. 19 And the thyroid is one of the issues. 20 Is anybody taking studies on this? 21 Just because our wells have been shut down 22 -- when I first started going to the 23 meetings, I think there was three of them 24 that were shut down. The others were still 25 going. There's more that have been shut</p>
<p style="text-align: center;">Page 54</p> <p>1 2 to figure out what that stuff is. 3 But generally the things that we're 4 worried about, are the -- that list that I 5 showed on the board. 6 QUESTION: I guess my fundamental 7 question is, in 1970 or 1960, you didn't 8 know to be looking for these things, fair? 9 KEVIN MAYER: That's true. 10 QUESTION: I guess my fundamental 11 question is, in 2009, in theory, could there 12 be things that in 2029, we go, We had no 13 idea this was here to go look for. Is that 14 how you do it? 15 KEVIN MAYER: There are lots of way 16 to be worried about water. Lots of reasons 17 to be worried. The plastic in the water 18 bottle. We find more and more about how 19 chemicals react to different parts of our 20 bodies. The more and more we research the 21 more we get interested in that. Well, 22 maybe, this breakdown product might be of 23 concern at least with very, very low levels. 24 But in general, we know the major 25 chemicals that are out there and we know the</p>	<p style="text-align: center;">Page 56</p> <p>1 2 down in the area. Is there anybody at all 3 that studies to see, you know, the effect of 4 after the wells have been shut down, on the 5 families that have gotten sick. Because when 6 we go to the doctor, the doctor just raises 7 his eyebrows like, Oh, Rancho. It's thyroid 8 problems. Can you warn some people? We 9 started with low numbers too. 10 KEVIN MAYER: There are a couple of 11 issues that I don't want to get into all of 12 these details. It's very hard to make -- 13 draw conclusions from -- unless you got a 14 large enough population. That you've got 15 enough control over what they have been 16 exposed to. But there are indicators of 17 greater or less health issues. 18 I am aware that EPA has -- at least 19 indirectly -- given money to research 20 organizations, University of California, to 21 try to get at some of these questions. 22 We've got -- what I think is a very good 23 study on Perchlorate. But it starts, not 24 very long ago. 25 QUESTION: How long ago?</p>

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2 KEVIN MAYER: In order to do it --
3 QUESTION: How many more people have
4 to get sick before something is done?
5 KEVIN MAYER: We're trying not to
6 expose anyone to this. That's what we're
7 trying to do. That's our first option. EPA
8 can't go back and undo exposures that have
9 happened in the past.
10 QUESTION: No. But they can figure
11 out if there's a big mass that people have
12 lived in a certain area for 20 years and
13 people in the family that are having thyroid
14 problems, surely somebody know this. When we
15 go to the doctors, they write it down. And,
16 you know, do you have anymore, you know,
17 brother or sister, or does so and so have
18 any thyroid problems. When you have lived
19 in a place for 20 years you would think you
20 would be a pretty good subject for them to
21 study. Especially, in some areas, you know,
22 where people have lived. Nobody warned us.
23 KEVIN MAYER: You make a good point.
24 And I can't get into -- I don't know enough
25 about how to do an adequate study on that.

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2 DAVID BERRY: I have three public
3 comments. My name is David Berry, B-E-R-R-Y.
4 First comment. I've lived in Rancho
5 Cordova for the vast majority of time since
6 1958. I have a twin sister who died of
7 cancer. I have a daughter who has Grave's
8 disease, which is hyperthyroid. I have a
9 brother with prostate cancer. And the day
10 after tomorrow, I go to see if I have
11 thyroid cancer. That's kind of a high
12 percentage, although I'm almost 60.
13 My point is that you absolutely must
14 do some sort -- and this is what my wife
15 was getting to -- some sort of public health
16 assessment of the people in these affected
17 areas. And I know you have the ability to
18 pin it down by asking how long they have
19 lived, where else they have been, etcetera.
20 Because we know for a fact that the thyroid
21 problem is present. And we have never been
22 asked to be part of a survey. You
23 absolutely need to do that public health
24 assessment by doing a survey to see how many
25 people have already been affected.

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2 QUESTION: But isn't that the whole
3 reason to try and clean up this water,
4 though, is for health reasons?
5 KEVIN MAYER: Yes. Absolutely.
6 QUESTION: Why shouldn't we be doing
7 something else to find out how much it's
8 affecting us.
9 KEVIN MAYER: Right. It's really
10 tough, like I say, to go back and fix --
11 QUESTION: If I was running a
12 business and I was contaminating people, I
13 would be out of business. Why is that they
14 get to continue on or they are not moved out
15 someplace else so they don't hurt anymore
16 families.
17 KEVIN MAYER: We're still left with
18 the contaminants here that we need to deal
19 with.
20 QUESTION: They are still in
21 business.
22 KEVIN MAYER: Yes, they are still in
23 business.
24 JACKIE LANE: Can we now take those
25 people who wanted to give public comment.

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2 Number 2. Page 4 of this document,
3 Proposed Plan, indicates that Aerojet is in
4 the process of applying for zoning
5 modifications to its special planning area
6 designation by Sacramento County ordinance for
7 its land within OU-5 to allow for mixed
8 residential and commercial use. My comment
9 is that that is ludicrous. It's criminal;
10 should not be allowed.
11 Third comment. Although, I know
12 it's your place here, whenever you include
13 the general public, including the residents
14 in the affected area, there's an area that
15 be needs to be in some fashion addressed by
16 the government, whether it's EPA, the state,
17 the county. And that is the issue of
18 liability and compensation. The law that
19 you're acting under is called Comprehensive
20 Environmental Response Compensation and
21 Liability Act. And I haven't heard a word
22 -- no criticism of you -- about compensation
23 and not much about liability. It's obvious
24 that Aerojet is liable. If they are paying
25 then they have accepted liability. It's

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1
2 proven. What isn't proven to somebody's
3 satisfaction is the connection between, for
4 instance, Perchlorate and thyroid problems.
5 It's very strongly indicated. And I don't
6 see anybody addressing that. I think that
7 that needs to be a part of your process to
8 direct -- if not to address it -- because
9 you obviously can't assign fines and all that
10 kind of stuff -- Aerojet will resist all
11 lawsuits until I'm dead and buried. This
12 will be going on until I'm 180.
13 I know that there have been lawsuits
14 filed. And I have read recently that the
15 courts put a stay on a case that was started
16 by the law firm that Erin Brockovich was
17 working for. The main attorney has died and
18 nobody has heard a word for years.
19 So clean up the mess, that's fine.
20 Address the damage already done to people
21 medically and physically, that part is
22 missing.
23 Thank you.
24 LARRY LADD: Hi, my name is Larry
25 Ladd. I'm a resident of Ranch Cordova,

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1
2 11064 Santiam River Court. I'm a regular
3 member of community advisory group for
4 Aerojet Superfund Site issues. Kevin and I
5 have been working together for 12 years.
6 The two issues I'm going to bring up
7 are not new to him. But I haven't had the
8 opportunity to bring them up for the record
9 in a formal setting.
10 My first comment is a question as to
11 why we are not using EPA Method 521 to
12 monitor the groundwater here. This is my
13 understanding. With the Aerozine 50 rocket
14 fuel that you've used at the east end of the
15 site, when it comes in contact with air, it
16 breaks down into --
17 THE COURT REPORTER: You need to
18 slow down and stand up, please. I cannot
19 understand what you are saying.
20 LARRY LADD: It also breaks down
21 into NDMA, Nitrosodimethylamine. My
22 understanding is that in lab test those are
23 -- that's not the only nitrosamine that's
24 formed by the decomposition of Aerozine 50.
25 There's an approved form by the EPA called

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1
2 Method 521.
3 KEVIN MAYER: Speak a little slower,
4 Larry.
5 LARRY LADD: There's an approved
6 method that's been approved since 2004 for
7 multiple nitrosamines including NDMA, including
8 some of the nitrosamines that could come from
9 liquid rocket fuel. My understanding is, not
10 only is that test more comprehensive, but
11 it's cheaper than the neutron bombardment
12 test that we use now just to check for NDMA.
13 This is nothing new. Kevin and I have
14 discussed this for quite sometime.
15 For the record, I would like to know
16 why we don't use, EPA Method 521 on site?
17 And the follow up, in terms of treatment, my
18 understanding is that the ultraviolet that is
19 used to treat the NDMA's is specific --
20 wavelength that breaks up the NDMA, would it
21 also break up the other nitrosamines. I
22 suppose that's a detection question and a
23 treatment question.
24 Not specific necessarily to this
25 zone, but in terms of checking for vapor

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2 pressure off site, again, an old issue is,
3 the Sunriver neighborhood, which before the
4 Sunrise Bridge was built, was where the
5 (unclear) went out and percolated into
6 groundwater in the cobbles there, what is
7 called the Citrus Ponds. There's been no --
8 other than one drilling site, there's been no
9 other drilling in the neighborhood to see if
10 there's any purged VOCs presenting, a vapor
11 intrusion problem -- but that's outside the
12 scope of this particular project. But since
13 I got the microphone.
14 Thank you.
15 ELISSA CALLMAN: My name is Elissa
16 Callman, E-L-I-S-S-A C-A-L-L-M-A-N. I'm here
17 on behalf the City of Sacramento, Department
18 of Utilities, American River Source Water
19 Protection Program.
20 And I just have a quick question for
21 tonight. Thank you, for the presentation.
22 My question is whether it would be possible
23 for the remedial investigation and feasibility
24 study and tonight's presentation to be
25 available electronically?

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2 JACKIE LANE: Any other comments?
3 And for just people's information, we do have
4 the Feasible Study online. That e-mail
5 address is in your Proposed Plan.
6 I like to thank everyone for coming
7 tonight. Kevin and I and some of our state
8 counterparts will be here for any questions
9 that you might have.
10 Thank you.
11 (Whereupon, the public meeting
12 concluded.)
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2 CERTIFICATE
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4 I, Angie Materazzi, a Court Reporter
5 and Notary Public in the State of California,
6 do hereby certify that the foregoing record
7 taken by me at the time and place as noted
8 in the heading hereof, is a true and
9 accurate transcript of same, to the best of
10 my knowledge and belief.
11
12
13
14 Angie Materazzi
15
16 Dated: August 27, 2009
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