HEARING

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Application for	)	
Certification for the	)	Docket No. 99-AFC-1
ELK HILLS POWER PROJECT	)	
	)	
_____	)	

CALIFORNIA ENERGY COMMISSION

FIRST FLOOR HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

TUESDAY, FEBRUARY 1, 2000

9:38 A. M.

Reported by:
Debi Baker
Contract No. 170-99-001

COMMITTEE MEMBER PRESENT

Michal Moore, Presiding Member

STAFF PRESENT

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I N D E X

P R O C E E D I N G S

9:38 a.m.

PRESIDING MEMBER MOORE: Good morning. This is the Elk Hills Power Project continuation of the evidentiary hearings, today being Tuesday, February 1, the year 2000.

I'm Michael Moore; I'm joined by Major Williams here on my right. We are the Committee that will be hearing this matter. And today we're going to hear waste management and worker safety and fire protection.

I have only really one housekeeping item from my end and that is that I have to be party to a conference call at 11:00, so we'll plan to take a break then from about 11:00 to 11:15 so I can accomplish that.

And beyond that let me turn to Major and ask him if he's got any housekeeping items, and then we'll begin.

HEARING OFFICER WILLIAMS: Good morning, again. I'd like to apologize to the parties for the delay this morning. There obviously was a disconnect when Commissioner Moore announced from the dias that we'd begin at 9:00 instead of 10:00. And I won't get into the details.

PRESIDING MEMBER MOORE: Except that he's blaming me for it.

(Laughter.)

PRESIDING MEMBER MOORE: Getting to get pretty par for the course around here. I don't know.

HEARING OFFICER WILLIAMS: I will say it was not Commissioner Moore's fault.

I have distributed an exhibit list this morning. Do any parties have a change to the tentative exhibit list that I've passed out?

MS. LUCKHARDT: We don't have a change at this time. I'd just like to note for the record that we have provided copies of exhibit 21D to everyone this morning. That was the errata to public health testimony submitted by Steve Radus orally on January 25th.

HEARING OFFICER WILLIAMS: Thank you, counsel. I would note, also, that CURE has distributed a new exhibit; it's the errata to Ms. Fox's testimony on waste management and worker safety. I have marked it as 21-I for identification.

MS. LUCKHARDT: Just wonder if you have some extra copies of that?

DR. FOX: No.

MS. LUCKHARDT: There was one over here. I thought it was for the court reporter.

MS. REYNOLDS: No, it was for you.

MS. LUCKHARDT: Okay.

MS. REYNOLDS: I've given her a separate copy.

MS. LUCKHARDT: Okay.

HEARING OFFICER WILLIAMS: I would also state for the record that the identical parties who were here when we last met are here again for the proceedings. And there are no public participants here.

MS. REYNOLDS: Mr. Williams, I have one correction to make to the list.

HEARING OFFICER WILLIAMS: Okay, why don't we do that.

MS. REYNOLDS: 27B, I think, was left off. That's the same description as 27A, except in parentheses it should say uncontrolled most likely.

HEARING OFFICER WILLIAMS: Thank you, counsel. Any others?

MS. REYNOLDS: Not from me. Actually, yes, I'm sorry.

HEARING OFFICER WILLIAMS: Okay.

MS. REYNOLDS: I realize there's 27C and 27D, also. 27C was the same figure with Dr. Fox's marking about the change to the ISO plat. And 27D was the same figure with Joe Rowley's marking of the existing ammonia tank.

HEARING OFFICER WILLIAMS: Okay, I've noted those changes. And the list will be updated at the next hearing on March 7th. Anything further?

Well, I think at this point we're prepared to begin with the applicant's presentation on waste management. As Commissioner Moore indicated, we've got two topics today.

MS. LUCKHARDT: Yeah, I believe we've already presented the waste management panel and this is the worker safety panel we have prepared to go today.

HEARING OFFICER WILLIAMS: Okay.

MS. LUCKHARDT: Would you like me to start with them?

HEARING OFFICER WILLIAMS: Yeah, why don't you go ahead.

MS. LUCKHARDT: Okay, the three witnesses the applicant calls for the worker

safety and site contamination issues are Mr. Joe Rowley, Mr. Gary Cronk, who have previously been sworn, and if I could get Roe Rowley to come up and join us that would be great. And also Mr. Roger Margotto, who needs to be sworn.

HEARING OFFICER WILLIAMS: Swear the witness, please.

Whereupon,

JOSEPH ROWLEY and GARY CRONK

were called as witnesses herein and having been previously duly sworn, were examined and testified as follows:

Whereupon,

ROGER MARGOTTO

was called as a witness herein and after first being duly sworn, was examined and testified as follows:

MS. LUCKHARDT: I'll start with Mr. Rowley.

DIRECT EXAMINATION

BY MS. LUCKHARDT:

Q Mr. Rowley has previously stated his name, qualifications and experience for the record, so at this point, Mr. Rowley, would you please identify the exhibits which you are

sponsoring into evidence at this time?

HEARING OFFICER WILLIAMS: Counsel, excuse me, before you get into the presentation, could we swear the witness and get that done with.

MS. LUCKHARDT: Oh, have you not? I'm sorry.

HEARING OFFICER WILLIAMS: And we'll just please swear --

SPEAKER: She just did.

MS. LUCKHARDT: I thought we -- yeah.

HEARING OFFICER WILLIAMS: Oh, we did? Oh, okay, I'm sorry, must have missed it.

MS. LUCKHARDT: It was while I was --

HEARING OFFICER WILLIAMS: Okay. Thanks.

MS. LUCKHARDT: Okay, then I will ask Mr. Rowley again to identify the exhibits he's sponsoring today.

MR. ROWLEY: I'm sponsoring section 3.410, 412, 413, and 425 of the AFC, exhibit 1, all having to do with various aspects of fire protection.

MS. LUCKHARDT: And do you have any corrections to make to your testimony today?

MR. ROWLEY: No.

MS. LUCKHARDT: And do you adopt the portions of exhibit 1 identified earlier as your true and sworn testimony on fire protection in this proceeding?

MR. ROWLEY: Yes, I do.

MS. LUCKHARDT: Okay. Now, I will switch to Mr. Cronk. Mr. Cronk has also previously stated his name, title and qualifications for the record.

DIRECT EXAMINATION

BY MS. LUCKHARDT:

Q So I'd like, at this time, Mr. Cronk, to identify the exhibits he is sponsoring. Are you --

MR. CRONK: No.

MS. LUCKHARDT: Okay, Mr. Cronk has previously -- I'm sorry, Mr. Cronk has previously provided his testimony on waste management, and that was entered into the record on Thursday, and he is available and will be available to respond to some additional questions on site contamination issues as it relates to worker safety and health impacts.

So I'm going to turn to Mr. Margotto. Mr. Margotto's qualifications have previously been

filed.

DIRECT EXAMINATION

BY MS. LUCKHARDT:

Q And, Mr. Margotto, would you please state your name and your title for the record?

MARGOTTO: Yes, I'm Roger Margotto. I am an Environmental Health and Safety Manager for Foster Wheeler Environmental Corporation.

MS. LUCKHARDT: And would you please identify the exhibits that you are sponsoring today?

MR. MARGOTTO: Yes, I'm sponsoring AFC section 5.14, worker safety, 5.18.3, cumulative impacts, and section 6.42 and 6.514 worker safety, laws, ordinances, regulations and standards.

MS. LUCKHARDT: And the AFC is exhibit 1 in this proceeding.

Do you have any corrections to make to your exhibits today?

MR. MARGOTTO: No, I do not.

MS. LUCKHARDT: And are you also sponsoring attachment A, testimony of Roger Margotto, regarding worker safety in support of the application for certification for the Elk Hills Power Project?

MR. MARGOTTO: Yes, I am.

MS. LUCKHARDT: And do you have any corrections to make to that today?

MR. MARGOTTO: No.

MS. LUCKHARDT: And do you adopt the prefiled testimony as your true and sworn testimony today?

MR. MARGOTTO: I do.

MS. LUCKHARDT: And, Mr. Margotto, would you briefly summarize your testimony in the area of worker safety?

MR. MARGOTTO: Well, my testimony on worker safety is based upon my experience as well as the laws and regulations of the State of California for CalOSHA. And that's basically how this was prepared.

MS. LUCKHARDT: Thank you. And can you give us a rough estimate of how many worker health and safety plans that you have written or reviewed in your career?

MR. MARGOTTO: I would guess well over 300 of them.

MS. LUCKHARDT: And in your position do your certifications that you have obtained and that are previously provided in your rÇsum

require continuing education and training?

MR. MARGOTTO: Yes, they do. I'm required to do annual continuing education.

MS. LUCKHARDT: And do you teach those courses?

MR. MARGOTTO: I teach some courses, yes.

MS. LUCKHARDT: And, Mr. Margotto, could you please describe your field experience with oil field wastes?

MR. MARGOTTO: I've worked on many projects with oil field waste. I was a health and safety manager to a chemical waste management Kettleman Hills Facility, which accepted oil field waste materials, as well as being originally a site which oil muds were brought to.

And I've also recently worked on a project which was comprised of a 15-acre site that was nothing but oil field waste, muds and oil field waste, in Huntington Beach.

MS. LUCKHARDT: And, as a health and safety manager what is your primary concern?

MR. MARGOTTO: My primary concern is protection of the worker.

MS. LUCKHARDT: And as you have reviewed

this case what type of site is it that the proposed project is on, or proposed for?

MR. MARGOTTO: The site for this project is an oil field. And basically with my experience in this area I would characterize the site as any other type of oil field site.

MS. LUCKHARDT: And how do you look at worker safety at a site like this?

MR. MARGOTTO: I would basically consider what type of site it was, what were the past activities at that particular site, and then evaluate how I would protect the workers on that site through my experience, through knowledge of the type of site that it was.

MS. LUCKHARDT: And do you do this through the preparation of certain worker safety and health management plans?

MR. MARGOTTO: Yes, I do.

MS. LUCKHARDT: And can you identify those plans?

MR. MARGOTTO: I look at the scope of work and the proposed work to be done, and consider the type of procedures that are going to be employed in conducting that work. And then from there I evaluate what the potential hazards

are, the potential for exposure to contaminants. And I would write a plan that basically addresses those issues for protection of the workers.

MS. LUCKHARDT: And have you reviewed Dr. Fox's testimony?

MR. MARGOTTO: Yes, I have.

MS. LUCKHARDT: And, in your opinion, are there any legal requirements that address workers at a construction site where contamination may be encountered?

MR. MARGOTTO: Yes, there are numerous regulations that actually address this. California Code under CalOSHA basically says that first of all that general industry safety orders apply to all employees in the State of California except where there are specific standards for a type of employment; in this case the construction safety orders.

And in the construction safety orders it makes references to sites where there may be contamination. And refers to other sections within the regulations applying to construction workers.

MS. LUCKHARDT: And do those regulations set exposure levels?

MR. MARGOTTO: Yes, the CalOSHA does set permissible exposure levels within Title 8.

MS. LUCKHARDT: And, Mr. Cronk, have you also reviewed Dr. Fox's testimony in this case?

MR. CRONK: Yes, I have.

MS. LUCKHARDT: And in your opinion is this an unusual site?

MR. CRONK: No, this is not an unusual site. This is not a known hazardous waste site. It's an oil field construction site. Routine type of construction site. There are no oil wells or no sumps on the plant site.

Nonetheless, even though we wouldn't be expecting to encounter contamination we would take normal safety precautions, normal health and safety plan procedures would be enacted and the workers would be trained and be equipped with field instrumentation to detect any contamination that would be encountered.

MS. LUCKHARDT: And, Mr. Margotto, would your plans adequately address running into contamination that was not previously identified?

MR. MARGOTTO: The plans would specify what type of activities or actions that should be taken in the event that unexpected materials are

encountered on the site.

MS. LUCKHARDT: And with the information that you have available to you today regarding the site, and assuming that you had a construction plan, would you feel comfortable, as a health and safety officer, going forward with developing the required plans and starting construction?

MR. MARGOTTO: Yes, with the construction plan in place, I would.

MS. LUCKHARDT: And why is it important to have the construction plan?

MR. MARGOTTO: Primarily I need to know the way in which the work is planned to be executed so that I can anticipate the particular hazards that workers may encounter. And in which case then I can specify in the plan how to deal with those.

MS. LUCKHARDT: And does that include the specific equipment that is planned to be used on site?

MR. MARGOTTO: Typically it does, yes.

MS. LUCKHARDT: And, Mr. Cronk, would you recommend soil analyses along the linear facilities prior to construction?

MR. CRONK: No, it wouldn't necessarily

be required. There are no oil wells within 50 feet of the linear alignments. That is a requirement of the Department of Oil and Gas.

There's no known contamination along the linears. Wells with known contamination with chromium were all cleaned up; all but one of the arsenic site well pads were cleaned up. And that one particular site is not near a linear facility.

Again, the workers would be trained that were doing the excavation along these linears. And there are no regulations that would require you to collect soil samples in advance.

MS. LUCKHARDT: And when you refer to the requirement for 50 feet, were you referencing that a linear facility needs to be at least 50 feet from that oil well?

MR. CRONK: That's correct.

MS. LUCKHARDT: And, Mr. Margotto, do you agree with Mr. Cronk's statement?

MR. MARGOTTO: Yes, I do.

MS. LUCKHARDT: And, Mr. Margotto, what are the appropriate worker exposure limits for construction workers?

MR. MARGOTTO: As I stated earlier, there are CalOSHA permissible exposure limits

which are specified in the regulations, and those would be the levels that would be the ones that I would look at as far as assessing or looking at the potential worker exposure.

MS. LUCKHARDT: And do those include action levels, as well?

MR. MARGOTTO: The permissible exposure limit is the guideline, actually the legal requirement. We have a requirement that basically states that an action level is set at 50 percent of the PEL, the permissible exposure limit. And at that point we begin implementation of assessing the workplace to make sure that we have met procedures to protect the worker from getting to that level of exposure.

MS. LUCKHARDT: And are there permissible exposure limits for the types of contaminants you expect could be found during construction?

MR. MARGOTTO: Yes, there are.

MS. LUCKHARDT: And are the CalOSHA regulations more stringent than the FedOSHA regulations?

MR. MARGOTTO: The CalOSHA regulations, first of all, have to be as stringent as the

FedOSHA regulations. And in many cases are more strict than FedOSHA regulations.

MS. LUCKHARDT: And Dr. Fox in her testimony refers to, I believe it's benzene in a pounds/hour, or a pound figure. How do you relate data reported in pounds/hour or pounds to worker exposure?

MR. MARGOTTO: I really can't make a correlation because of the fact that pounds/hour is not a measure of unit volume, very difficult to make that kind of calculation unless you know what volume is involved in terms of mass per unit volume such as in mg/cubic meter, or in terms of ppm in the breathing zone of workers.

MS. LUCKHARDT: And for construction workers, what is the primary route for exposure?

MR. MARGOTTO: As with all workers, the primary route for exposure is inhalation.

MS. LUCKHARDT: And will there be a place for construction workers to wash their hands and clean their tools on site?

MR. MARGOTTO: The regulations actually require that wherever contaminated soil is present. So I would expect that there would be.

MS. LUCKHARDT: And, Mr. Cronk, CURE has

testified that the environmental professional should be independent and report directly to the CPM, not the applicant. Do you agree with that statement?

MR. CRONK: No, I don't. There's literally hundreds of site assessment remediation projects that are conducted every week in California without that type of requirement for a third-party oversight.

The environmental professional, by definition, is an unbiased independent party, bound by their professional duty. I don't see any compromise in professional standards.

MS. LUCKHARDT: And Dr. Fox has further testified that most -- and I will use her word -- contamination in an oil field cannot be identified through observation. Do you agree with that?

MR. CRONK: I would disagree with that statement. In my experience I've worked on eight to ten oil field remediation projects where crude oil was a predominant contaminant.

Crude oil, by its nature, is very heavy oil, very dark. It stains soil a very dark color, easily very distinct from the native soils. So you can tell pockets of contamination that are

contaminated with crude oil. As well as with the odor. But the visual observation is obviously he most obvious.

Now there are other contaminants associated with crude oil and in an oil field. There may be volatile organic compounds, there may be polynucleararomatics, there may be heavy metals. But again, in my experience, those are normally associated with the crude oil.

They may be associated also with sumps, where drilling muds may have been discharged to a sump. But, again, you would have a mixture of crude oil and some of these other contaminants.

And the drilling muds, themselves, are a clay, a bentonite clay, which are usually distinct from the native soils, you would be able to distinguish them easily.

MS. LUCKHARDT: And what about natural gas liquids?

MR. CRONK: It's my understanding there may be some natural gas liquids, or there were some natural gas liquids processed at this site. And it's my understanding that natural gasoline, which is a condensate product that may come from the gaslines, may have been handled at this

particular site.

And if it was something similar to gasoline, again, that would be very easily detected, both by odor and by field instrumentation.

MS. LUCKHARDT: And that field instrumentation would be a --

MR. CRONK: A PID or an FID, a photo ionization detector or a flame ionization detector.

MS. LUCKHARDT: And Dr. Fox has further testified that if soil contamination is discovered during excavation or construction that the construction activity should be immediately suspended.

Do you agree with that statement?

MR. CRONK: No. Again, I've worked on lots of projects and I've never seen the need to necessarily stop a construction project in mid-stream if contamination is detected.

Typically they would excavate known contaminated soil, they would remove it to an area outside of the construction zone. They would cover it to keep emissions down. They would take a sample of the soil, send it to a laboratory for

analysis, and then make a decision on what to do with the contaminated soil at that point, whether it be hauled off site or treated or whatever the case may be.

MS. LUCKHARDT: And, Mr. Margotto, I believe you were here on Thursday when Mr. Rowley identified the location of an existing anhydrous ammonia storage facility about a quarter mile from the proposed project. Are you aware of that?

MR. MARGOTTO: I am, yes.

MS. LUCKHARDT: And would CalOSHA, not asking for specific details on that, that project or that site, but would CalOSHA and Prop 65 regulations require that those workers be instructed on the actions to take upon a release from the existing tank?

MR. MARGOTTO: Yes, I believe that they would be trained on that. That would be required under the regulations. I would expect those workers would have that training and be made aware of what the plans were, what they need to do in event of evacuation, et cetera.

MS. LUCKHARDT: Thank you. I have no further direct. And at this time I would like to enter applicant's exhibits in the area of worker

safety into evidence.

HEARING OFFICER WILLIAMS: Any objections? Seeing none, so admitted.

MS. LUCKHARDT: Okay, the witnesses, at this time, are available for cross-examination.

HEARING OFFICER WILLIAMS: Thank you, counsel.

MS. WILLIS: Staff does not have any questions at this time.

MS. REYNOLDS: Yes, we have a few questions.

HEARING OFFICER WILLIAMS: Please proceed.

CROSS-EXAMINATION

BY MS. REYNOLDS:

Q Mr. Cronk, section 5.13 of the AFC which you are sponsoring states that if low level petroleum hydrocarbon impacted soil is encountered but does not exceed regional water quality control board soil cleanup levels it may remain on site. That's on page 5.13-4.

What are the regional water quality control board's soil cleanup levels?

MR. CRONK: They're determined on a case-by-case basis. There are no set standards.

MS. REYNOLDS: Have standards been set for this project?

MR. CRONK: No, they haven't.

MS. REYNOLDS: The AFC also states on page 5.13-5 that if petroleum hydrocarbon impacted soil is encountered but is classified as nonhazardous it may be disposed of either off site or remain on site contingent upon the quantity of soil, concentrations of constituents present and other potential factors.

First, can you tell us what quantity of soil would be appropriate to remain on site?

MR. CRONK: Well, that would be approved by a regulatory agency. Obviously if we detected contamination we would need to notify Kern County Environmental Health department, the water quality control board, and my understanding now is also DTSC, because there is a memorandum of understanding with the DTSC.

So all those agencies would be notified. They may not all get involved in the cleanup, depending on the level of contamination, what type contamination it is, and the extent of it.

MS. REYNOLDS: Would that be true if the soil was classified nonhazardous, but still was

petroleum hydrocarbon impacted?

MR. CRONK: Yes.

MS. REYNOLDS: Could you tell us what concentration levels of constituents would be used as thresholds to determine whether it's appropriate to allow the soil to remain on site?

MR. CRONK: Again, that would have to be approved by a regulatory agency. An environmental professional may submit a report making some recommendations. But, again, that would have to be approved by a regulatory agency if contaminated soil is left on site.

MS. REYNOLDS: Can you identify the other potential factors that would factor into the decision about whether to keep the contaminated soil on site or ship it off site?

MR. CRONK: It would depend upon if there's a risk to say groundwater. If there's a threat to groundwater quality. In this particular case because the groundwater is so deep and nonbeneficial use, there's really no threat to groundwater quality.

If there's a threat to public health by the contaminants then that would be determined again by the levels of the contaminants, the type

of contaminants they are, whether they're just petroleum hydrocarbons or whether they might be polynucleararomatics or other volatiles or metals.

Each of those would have different types of cleanup thresholds or they would be looked at independently by a regulatory agency.

MS. REYNOLDS: In your testimony you describe procedures that, based on your experience, the environmental professional would normally follow to detect soil contamination. And you also stated on direct that an FID or a PID would be used.

Do staff's proposed conditions of certification require any of these instruments or procedures?

MR. CRONK: Well, on waste-4 it does specify that an environmental professional would be on site during excavation --

MS. REYNOLDS: Actually could you tell us where you --

MR. CRONK: I'm looking at the staff, final staff assessment on page 85, waste-4 condition.

MS. REYNOLDS: Right.

MR. CRONK: Conditions of certification.

MS. REYNOLDS: Could you tell us specifically where that requires the environmental professional to be on site during soil excavation?

MR. CRONK: Well, the way I read it, it does not specify that an environmental professional needs to be on site. But in my experience, because a health and safety plan would be prepared for this site, the health and safety plan would specify that there would be a health and safety officer which may indeed be the same person as the environmental professional that's required by this condition.

And that person would be on site; that person would screen soil; that person would have a PID or an FID on site to screen soil.

MS. REYNOLDS: Are any of those things that you just stated required as conditions of certification by the --

MR. CRONK: No, but they're generally required in a health and safety plan at this type of site in my experience.

MS. REYNOLDS: Required --

MR. CRONK: They would be a typical requirement in a health and safety plan.

MS. REYNOLDS: In your testimony you

list several mitigation measures, and that's in attachment A, page 4. The first measure states that excavation contractors hired to perform demolition of equipment and initial grading of the plant site will be OSHA trained in hazardous waste operations.

I'm trying to get some clarification on that. Would all construction workers engaged in any soil disturbing activities receive HAZWOPER training?

MR. CRONK: Not necessarily. In fact, I would suspect that the environmental professional, the health and safety officer at the site that's very near the point of excavation, that's screening the soil with the PID/FID, that person would be health and safety trained, 40-hour HAZWOPER training.

The other persons on site, depending on the type of work they're doing and the type of exposure they may encounter would receive less training, or training dependent upon their level of exposure.

MS. REYNOLDS: Can you visually detect arsenic and chromium?

MR. CRONK: If it's in association with

crude oil, yes. Well, you wouldn't specifically, but typically if they're in an oil field, you know, you suspect those type of contaminants typically associated with a crude oil contamination.

MS. REYNOLDS: Is it always?

MR. CRONK: I wouldn't say that it's always associated with it, but from my experience it commonly is.

MS. REYNOLDS: Mr. Cronk, have any of the plants that you've been referring to that would be prepared to address worker safety and contamination issues, have any of those been prepared yet?

MR. CRONK: Are you talking about health and safety plan? Are you talking about -- no, none of those have been prepared yet.

MS. REYNOLDS: Mr. Margotto, you state in your testimony that because construction workers could come into contact with contaminated soil they would receive appropriate OSHA hazardous material safety training. That's in attachment A, pages 3 and 4.

Could you explain what appropriate training means for this project?

MR. MARGOTTO: Well, it depends upon what the workers may or may not be exposed to. The issue is that in most projects of this type we have persons in place who would assess the job site, as we talked about, the environmental health professional who would be at the site.

And when that condition is noted, then at that point there is a change to the work that progresses to the extent that if the soil has to be disturbed, or workers have to come in contact then with that soil, then only those workers that have had that specific type of training would be working with that material.

But to that point there is not a requirement that workers in general construction have that specific training.

MS. REYNOLDS: As far as contamination that is discovered during construction, how would that work?

MR. MARGOTTO: Well once the contamination has been noted, then the requirement would be that those workers that work with that contamination that would have to physically remove it or work in the proximity of that contamination would then have to be at least capable of having

either the proper protective gear, or the knowledge, at least, to be able to work with that material.

And they should have that training in order to do that particular work.

MS. REYNOLDS: Will the hazards analysis -- you state in your testimony that the hazards analysis, which is included in the construction -- which will be included in the construction IIPP will specifically address hazards posed by the handling of soils contaminated with bihydrocarbons. That's in attachment A,
page 3.

Will the hazards analysis specifically address hazards posed by soils contaminated with metals such as arsenic and chromium?

MR. MARGOTTO: I believe that it would. There are requirements that we would have to address in that issue.

MS. REYNOLDS: And the requirements?

MR. MARGOTTO: Again, the regulations. If there's any potential for exposure to the contaminants, then obviously we would have to address those issues within the plan.

MS. REYNOLDS: Have any of these worker safety plans been prepared yet?

MR. MARGOTTO: No, they have not.

MS. REYNOLDS: Will these plans be prepared before the Energy Commission certifies the project?

MR. MARGOTTO: No.

MS. REYNOLDS: How long does it usually take to develop these types of worker safety plans?

MR. MARGOTTO: Depends upon the extent of the proposed project. But typically these plans normally take anywhere between 20 to 40 hours to prepare.

MS. REYNOLDS: Those are all the questions I have.

MS. LUCKHARDT: I just have a couple on redirect.

REDIRECT EXAMINATION

BY MS. LUCKHARDT:

Q First, Mr. Cronk, you were asked whether you could visually detect arsenic and chromium. How would you visually detect arsenic and chromium at the site?

MR. CRONK: I wouldn't visually detect

it, but basically if there was crude contamination, if there was visual evidence that there was crude oil contamination the routine sampling that we would take of that contaminated soil might be screened for a sample taken and analyzed for arsenic and chromium, in particular, to see if those contaminants were in association with the crude oil.

MS. LUCKHARDT: And are arsenic and chromium items that you would typically find in drilling muds?

MR. CRONK: They might be. Those were added to drilling fluids during construction of the well and they may be in association with the drilling muds.

MS. LUCKHARDT: And how do you identify drilling muds?

MR. CRONK: Again, the drilling muds were more typically bentonite clay and the clay material that would be left in a sump would be much different in texture and composition than the native soils which are sands and silt and gravels.

MS. LUCKHARDT: And for this particular site would you expect any arsenic or chromium to be associated with drilling muds?

MR. CRONK: Could you repeat that question again?

MS. LUCKHARDT: At this particular site if arsenic or chromium were there would you expect them to be associated with drilling muds?

MR. CRONK: That would probably be the most likely place they would be found.

MS. LUCKHARDT: And, Mr. Margotto, you were asked about the preparation of the different plans. Have you included detailed outlines of those plans in the AFC?

MR. MARGOTTO: I've included outlines in the AFC, yes.

MS. LUCKHARDT: And in order to prepare those plans earlier you stated you needed a construction plan. Could you describe the level of detailed information that's provided in the construction plan?

MR. MARGOTTO: Well, the construction plan describes the type of equipment, procedures and processes that are going to be done on a construction site. Basically the plan for implementation of the actual project work.

In reviewing those plans, as a health and safety professional, I would look at those and

determine issues relevant to the disturbance of the soil, issues relevant to the way in which it's excavated.

I have concerns that obviously include all aspects of the project and the construction.

MS. LUCKHARDT: And so would it be possible to prepare your health and safety plans prior to receiving a detailed construction plan?

MR. MARGOTTO: It would be almost impossible because of the fact that I wouldn't have enough detail prior to knowing what the construction process is going to be in preparing that plan.

MS. LUCKHARDT: And, Mr Rowley, could you prepare a construction plan without final design?

MR. ROWLEY: The construction plan is best prepared by the party that is actually going to be conducting the construction. And that is the same party that would be doing the design of the project, in other words, it would be the engineering, procurement and construction contractor.

The retaining of that contractor is still sometime in the future. And once that

contractor is retained, then of course he would be responsible for having the, for example, health and safety officer on site and fulfilling the requirements of the regulations.

And he would be able to factor in the design that he is performing in conjunction with the construction plan.

MS. LUCKHARDT: I have nothing further.

HEARING OFFICER WILLIAMS: Anything further?

MS. REYNOLDS: Just a few.

RECROSS-EXAMINATION

BY MS. REYNOLDS:

Q Mr. Margotto, the AFC contains a list of construction equipment in the air appendix, like a number of bulldozers, et cetera. And it also --

MS. LUCKHARDT: I don't believe Mr. Margotto has reviewed the air quality section of the AFC.

MS. REYNOLDS: That's my question.

BY MS. REYNOLDS:

Q My question is have you seen the list of construction equipment that the applicant has stated would be used?

MR. MARGOTTO: No, I have not seen that

portion.

MS. REYNOLDS: Is that the type of information you would need to prepare these plans?

MR. MARGOTTO: It would be a start. It would tell me the type of equipment, but it still doesn't necessarily tell me how it's used.

MS. REYNOLDS: Okay. Mr. Rowley, you said that the construction plan is best prepared by the contractor, and you have not retained a contractor.

Is it possible for the applicant to give Mr. Margotto the information he needs about the type of construction activities that would be necessary to construct this project?

MR. ROWLEY: We could speculate as to what the specific construction activities would be. But that would all be subject to change based on what the actual EPC contractor decided was the best way to approach the project.

So, we could speculate and develop plans, but in the end it would be the EPC contractor that would be in the best position to finalize that.

MS. REYNOLDS: Through work that you have done with this project before the Energy

Commission, have you identified areas of soil that are most likely to be disturbed by project construction?

MR. ROWLEY: Yes.

MS. REYNOLDS: I have no further questions.

HEARING OFFICER WILLIAMS: Anything further, counsel?

MS. LUCKHARDT: I'm thinking.

(Pause.)

MS. LUCKHARDT: I have one further question.

FURTHER REDIRECT EXAMINATION

BY MS. LUCKHARDT:

Q You just responded, Mr. Rowley, to a question as far as knowing which areas might be disturbed. If you were to conduct a phase two, would you test every single square inch of that area?

Maybe I should refer that to one of the other experts, Mr. Cronk or Mr. Margotto? When you do a phase two, do you test every square inch?

MR. CRONK: No. You typically would only collect soil samples at areas that are suspect or areas that you might suspect that

contamination may have occurred, may have leaked or otherwise been released.

MS. LUCKHARDT: Could you miss something in a phase two?

MR. CRONK: Oh, yes.

MS. LUCKHARDT: Thank you.

HEARING OFFICER WILLIAMS: Anything further?

MS. REYNOLDS: No.

HEARING OFFICER WILLIAMS: Okay. We'll proceed now to staff.

MS. WILLIS: Staff calls Mike Ringer and Rick Tyler. Mr. Tyler will be sponsoring the worker safety and fire protection, and Mr. Ringer was the author of the waste management.

So, we'll start with Mr. Ringer, and then we'll move to Mr. Tyler.

PRESIDING MEMBER MOORE: Has Mr. Ringer been previously sworn?

MS. WILLIS: No, he has not.

PRESIDING MEMBER MOORE: Okay, would you swear the witness, please.

Whereupon,

MICHAEL RINGER

was called as a witness herein, and after first

having been duly sworn, was examined and testified as follows:

HEARING OFFICER WILLIAMS: Proceed.

DIRECT EXAMINATION

BY MS. WILLIS:

Q Mr. Ringer, did you prepare the section of the final staff assessment entitled waste management?

A Yes, I did.

Q And that is part of the FSA that has been previously identified as exhibit 19. Did you include in exhibit 19 a statement of your qualifications?

A Yes.

Q Do you have any changes or corrections to your testimony today?

A No, I don't.

Q And do the opinions in your testimony represent your best professional judgment?

A Yes, they do.

MS. WILLIS: Mr. Tyler has been previously sworn in and has given a statement of his qualifications.

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Whereupon,

RICK TYLER

was recalled as a witness herein, and having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION

BY MS. WILLIS:

Q Mr. Tyler, are you sponsoring the worker safety and fire protection section of the final staff assessment?

A Yes, I am.

Q Do you have any changes or corrections to your testimony today?

A No, I don't.

Q Do the opinions contained in this testimony represent your best professional judgment?

A Yes, they do.

MS. WILLIS: Mr. Ringer, could you please provide a brief summary of your waste management testimony?

MR. RINGER: Yes. My main objectives in the waste management section were to make sure that the management of all waste from the project would be in compliance with all laws, ordinances,

regulations and standards.

This is especially important in the area of waste management, since hazardous wastes and solid wastes are pretty highly regulated. So, insuring compliance with all the applicable regulations and laws would insure that waste generated during the operation and construction of the proposed facility would be environmentally sound.

My second main objective was to make sure that the disposal of project wastes would not result in any significant adverse impacts to existing waste disposal facilities.

The applicant provided a phase one environmental site assessment which I reviewed, and based on the results of that I concluded that that there was a low probability of significant contamination at the site.

So it's unlikely that there would be significant amounts of hazardous waste generated due to project construction from site preparation activities from contaminated soils.

As far as the actual nonhazardous and hazardous wastes that could be generated during construction and operation, this facility would

generate normal construction wastes, both hazardous and nonhazardous.

Nonhazardous including things like excess lumber and concrete and scrap metal, et cetera.

Hazardous wastes including waste oil and grease, paint, spent solvent and things like that that are common from these types of construction facilities.

I looked at operational wastes, again both nonhazardous and hazardous. Nonhazardous wastes include things like trash, office waste, empty containers, broken parts, et cetera.

Hazardous wastes include spent air pollution control catalysts, used oil, cleaning solvents, waste paint and the like.

I looked at the quantities set that are expected to be generated of these types of materials. I looked at the proposed waste disposal facilities that could be used, both nonhazardous and hazardous.

And I concluded that the waste from the facility would not meaningfully impact any of the landfills capacities or operating lifetimes.

So, in conclusion, looking at all of the

different factors, I concluded that management of wastes generated both during construction and operation would not result in any significant adverse impacts.

And included in that would be the conditions of certification in compliance with all the applicable regulations and laws.

MS. WILLIS: Mr. Ringer, did you review CURE's testimony presented by Dr. Fox?

MR. RINGER: Yes, I did.

MS. WILLIS: And do you have any comments on that testimony?

MR. RINGER: Yes, I have some comments on that. Referring to Dr. Fox's testimony on pages 1 through 3, approximately, Dr. Fox alleges that due to contamination at the project site, waste management impacts would be significant.

However, Dr. Fox doesn't present any specific credible evidence that the proposed site is contaminated. She only speculates that it could be, citing an overview of historic oil field practices at other portions of the oil field which relate to wells or waste facilities such as ponds, sumps, pits, landfills and the like.

She ignores the fact that there is no

evidence that the site has ever been used for any purpose other than gas storage. There is no record of well drilling on the property. And there are no active or abandoned oil production wells, oil storage or processing facilities, or oil sumps on the site.

On page 5 Dr. Fox tries to narrow it down a little bit. She tries to show the likelihood of contamination at the project site by citing the Department of Toxic Substances Control RCRA facility assessment, which is included in her testimony as exhibit D.

This document identified 147 solid waste management units and areas of concern. Thirteen of these require additional investigation for contamination, and are located in section 35R where the power plant would be located.

As part of her exhibit D she includes several pages for the facility assessment showing the different areas where further investigation is required.

However, with respect to the facility assessment and potential site contamination, it would be more instructive to note the letter from the Department of Toxic Substances Control to

Marc Pryor, which is dated April 8, 1999, and docketed on April 12, 1999, which states that DTSC has reviewed the application --

HEARING OFFICER WILLIAMS: Excuse me, are you reading from a document now, Mr. Ringer?

MR. RINGER: This is -- I'm not reading from the document, but I'm referring to a letter from the Department of Toxic Substances Control which was docketed in this docket file on April 12th.

HEARING OFFICER WILLIAMS: Has that been admitted into evidence?

MS. WILLIS: No, it has not.

HEARING OFFICER WILLIAMS: Why don't we mark it and give the other parties an opportunity. Do you have copies, Mr. Ringer?

MR. RINGER: I have one copy.

HEARING OFFICER WILLIAMS: Can we get copies of that?

MR. RINGER: In that letter DTSC stated, "Based on our review we have determined that the proposed project is not within the areas of concern identified by DTSC report titled 'Naval Petroleum Reserve No. 1, Elk Hills, California, RCRA Facility Assessment'" and, quote, "Therefore,

DTSC has no comments on the proposed project."

On page 6 Dr. Fox discusses contamination near a proposed linear construction. It should be noted that the water supply pipe will be located in an existing corridor. The wastewater pipeline will be located along the existing Elk Hills Road corridor. The natural gas pipeline will be located entirely above-ground within an existing pipeway.

The transmission line route 1B follows an existing transmission line corridor and a roadway corridor. And transmission line route 1A is not near any identified well pads or sumps.

Specifically on page 6, Dr. Fox states, of her testimony, the project linears are also located near sites of known contamination, referring to contaminated well pads. But then qualifies that by saying, although some of these were apparently remediated.

She includes exhibit E of her testimony which shows the proposed linear facilities in relation to the chromium-contaminated sites. The exhibit E in her testimony is from the Department of Energy's 1993 supplement to the 1979 final environmental impact statement for petroleum

production at Elk Hills. And figure 3.2-1 of that document does show 65 chromium spill sites which she identified on her map.

Discussing the apparent remediation of some sites, it would probably be more accurate to quote page 3.2-8 of the EIS which states, the chromium cleanup level was negotiated with DTSC, and that all 65 sites have now been remediated. Verification testing to insure complete remediation of these sites has been completed.

It is interesting to note, though, even if residual chromium were to remain, the environmental impact statement on page 3.2-7 explains that due to acidic conditions and reactions with native clay soils, virtually all of the chrom6, that's hexavalent chromium, which is the hazardous form, would be expected to be reduced to chrom3, which is the less hazardous form.

And the EIS states, tests of the spent drilling fluids show that virtually no hexavalent chromium remains.

Also, the EIS points out, on page 3.2-7 and 8 that chromates and dichromates are soluble in water and can be transported by capillary

action to the surface where they can appear as a powdery yellow to yellow-green deposit that can best be seen after a rain.

In fact, the Department of Energy utilizes this phenomenon and has a visual inspection program to spot potential sites, which they refer to on page 3.2-14 of the EIS.

On page 6, Dr. Fox states that a phase one environmental site assessment would only detect hazards that are obvious to a casual observer. And I think this is a purposeful mischaracterization of what a phase one environmental site assessment is.

It ignores the fact that it was conducted by a registered professional engineer in accordance with methods and procedures set forth by the American Society for Testing Materials, which was described in the phase one, itself, and in previous testimony given by Harry Tau.

On page 9 of her testimony it's stated that the phase one presumes that buried pipelines are present on the project site and can endanger workers. Actually the phase one for Elk Hills contains no statement whatsoever concerning buried pipelines at the site.

Although such a statement may be found in the phase one ESA for the Sunrise Project, it's not relevant in this case.

Page 10, Dr. Fox alleges that proposed condition of certification waste-4 is inadequate because it requires that construction workers notify the environmental professional when contaminated soil is encountered, and construction workers and managers are not trained to identify contaminated soil.

However, she then provides exhibit F to her testimony, the environmental oversight program for the federal courthouse in Sacramento, as an example of mitigation measures taken during construction on contaminated sites.

On page 5-3 of that document, in the section entitled, apparent contamination, it states that although a given parcel will have been remediated, it is possible that residual levels of chemicals may be present where they could be encountered during construction, a similar case in this site.

It then sets forth the following procedures to be followed: Number one, the environmental oversight authority notification.

The constructor shall promptly notify the EOA, the environmental oversight authority, upon the suspected discovery of impaired contamination.

Thus, this procedure is almost identical to our proposed condition of certification waste-4 in regarding the notification of contamination during construction to an environmental professional.

And that's all the comments I have on her testimony.

MS. WILLIS: Thank you. Mr. Tyler, could you please --

HEARING OFFICER WILLIAMS: Counsel, before you begin with Mr. Tyler, I've identified the exhibit that Mr. Ringer testified from as exhibit number 33. It's a letter from Mr. Wade Cornwell to Marc Pryor from the Department of Toxic Substances Control.

Do you wish to offer this document into evidence?

MS. WILLIS: We can.

HEARING OFFICER WILLIAMS: Is there any objection to the document?

MS. LUCKHARDT: No.

HEARING OFFICER WILLIAMS: Okay, it will

be admitted as exhibit number 33.

MS. WILLIS: Mr. Tyler, could you please provide a brief summary of your worker safety and fire protection testimony?

MR. TYLER: Yes. With regard to worker protection staff generally relies on the extensive existing regulatory program administered by CalOSHA to insure the protection of workers.

These program requirements are identified in the worker safety testimony. I won't go over those specifically.

In the absence of any extraordinary conditions associated with a specific facility that would suggest that these programs are not sufficient to protect public health, we would rely on these programs to insure worker protection, and we believe that they're effective in doing so.

There has been some discussion about whether there plans are in place prior to certification of the project by the Commission. For many reasons it's difficult or maybe even impossible to do an adequate job of preparing such plans at this stage in project development.

What I would say is that these plans will be reviewed and approved prior to any

construction at the site. So the net effect is that workers would be protected, and that the plans would be in place before there was ever any potential for exposure.

Further, I would state that I have no reason whatsoever to believe that it's infeasible to develop and implement appropriate plans prior to that construction taking place.

MS. WILLIS: Mr. Tyler, before you go on, could you address where in the conditions of certification?

MR. TYLER: Yes. There's two conditions of certification, I believe they're safety conditions 1 and 2. First, safety condition 1 requires the owner to develop a construction safety management plan or safety and health program.

And condition 2 requires the owner to develop an operational safety health program to protect workers.

And those both must be in place prior to construction.

With that I'd like to go on and address a specific comment on page 31, the first page of the worker safety testimony. And that is in the

second paragraph we discuss that at the time this was prepared we did not know whether there would be discussion of contaminated soil to any significant extent in the public health testimony.

As a result of the phase one study and the lack of concern or lack of belief that there's any contamination at the site, this was not further addressed in the public health testimony, as stated on that.

So there is no analysis in the public health section, to the best of my knowledge, addressing that.

From that I'd like to more on to CURE's testimony, which I've reviewed.

MS. WILLIS: Can I ask you one question before you move ahead. When you were analyzing this case how did you determine which person was a member of the public versus who was a worker?

MR. TYLER: In this case I believe that all of the workers on the Elk Hills oil field, both OXY workers and this facility's workers, would be viewed as workers in the context.

This is a piece of private property with an additional facility that is in the center of the existing industrial complex. The types of

exposures are similar between the two facilities, and in fact, there's already existing exposure to anhydrous ammonia, as we discussed earlier at the OXY facility.

It's my belief that for many reasons that we would apply worker standards to those individuals. In doing so I would like you to take note of the fact that there's generally a very different standard of protection that's applied to workers versus the public. This is a major difference between CURE's point of view and our point of view.

The standards of protection that apply to the public are many times, as much as three orders of magnitude, lower, in other words, more health protective, than those that would typically be applied to workers. Because the standards for public protection require that all individuals in the public be protected with an adequate margin of safety.

Generally this goes to the fact that the general public includes infants, it includes people who are very seriously chronic -- have very serious chronic illnesses. Those people are generally much more susceptible to exposure to

contamination than the less sensitive segments of the general population.

In general, the workplace is composed of what I would characterize as health adults. And that's among the least sensitive segment of the general population.

There's also major differences in the exposure regimen. Generally, when you evaluate an exposure of the general public, you evaluate that exposure based on continuous exposure, 24 hours a day over the life of the individual for 70 years.

In the case of the workplace obviously we have 40-hour work week, 52 weeks a year, that makes a considerable difference in the duration of exposure, which is directly proportional to the potential for effects.

MS. WILLIS: Mr. Tyler, do you believe the proposed conditions of certification adequately protect workers in this case?

MR. TYLER: Yes, I do.

There's another major point that I would like to make with regard to workers versus the public, and that is the fact that the Elk Hills oil field and this facility are both on private property.

It's my experience, working for ARB and over my whole regulatory career, that generally when you talk about public you talk about people outside the boundaries of private property.

Clearly Occidental is aware, this is a host facility, there's economic benefit to the workers at Occidental to Occidental. They've agreed to have this facility in the center of their industrial facility.

And, in general, what I believe you would find is the 2588 program would look at exposures beyond the fenceline. So, there's this clear demarcation between what is public and what is workers.

This is a piece of private property where workers are present. And additionally, I'd point out that those workers must be informed of the risks that exist in their workplace, and thus consent and receive benefit in terms of employment.

And further, that it's much easier to control their exposures in the event of an emergency than it would be the general public. And we can use protective equipment to protect them which wouldn't be appropriate for the public.

So there's major differences, and we believe that Occidental's workers are clearly workers in the context of the existing regulations.

From that I'd like to go on and address specifically some of the issues that were raised with regard to both ammonia risks and the risks associated with site contamination, which CURE has raised.

MS. REYNOLDS: I'm sorry, could you -- I thought we covered hazardous materials issues earlier. Are we revisiting hazardous materials, or to what extent are you covering hazardous materials issues here?

MR. TYLER: Well, I think that they're related, in that you've argued that workers were potentially exposed to unacceptable -- that you argued that we should treat Occidental's workers as members of the public.

MS. REYNOLDS: I'm just curious as to where we're going here?

MR. TYLER: And we didn't address the issues that affect workers at that site.

MS. REYNOLDS: Well, during your testimony on hazardous materials you did make

several statements about workers being protected by OSHA standards for hazardous materials.

So I just don't understand why we're going over this again.

MR. TYLER: Okay, then I can just move on and address, if everyone's happy with the discussion there, I can move on and address the risks associated with site contamination.

HEARING OFFICER WILLIAMS: Why don't you do that.

MR. TYLER: Okay. First off I would state that I believe that the workers at the site are adequately protected by the existing regulations, as I've stated. That there are specific industrial safety orders that apply to any worker that would work to clean up a contaminated site.

There are the general safety orders that are discussed in our testimony. And I believe that in the context of this facility that there's no reason for me to believe at this time that there's any significant contamination at the site. Therefore, it's my opinion that this is just like any other industrial construction. And that there are no extraordinary conditions that would make me

question the adequacy of these programs.

One final cleanup issue that I'd like to address is CURE has raised some questions about the location. The applicant has agreed to purchase or help purchase particular fire protection equipment in the terms of a ladder truck for the Kern County Fire Department.

I don't think there's any question about that being appropriate. What the question is, is the location of that truck. And discussions with the Fire Department suggest to us that they believe that the personnel at the station that they've proposed, its location, are best able to operate that vehicle effectively, and that that's the best place for storage of that vehicle.

And that they believe that they can adequately respond to any condition at the site from that facility within a reasonable time.

MS. WILLIS: Does that conclude your testimony?

MR. TYLER: Yes, it does.

MS. WILLIS: Okay, at this time staff would like to move the waste management and worker safety and fire protection sections of the FSA into the record.

HEARING OFFICER WILLIAMS: Any objection?

MS. LUCKHARDT: No objection.

HEARING OFFICER WILLIAMS: So admitted.

MS. WILLIS: And I guess exhibit 33 we'd also want to move that into the record.

HEARING OFFICER WILLIAMS: Exhibit 33 has been admitted.

MS. WILLIS: These witnesses are now available for cross-examination.

HEARING OFFICER WILLIAMS: Cross.

CROSS-EXAMINATION

BY MS. LUCKHARDT:

Q Mr. Tyler, I guess I'd just like to clarify one thing. On your comment about, I guess it's page 31 of the FSA, regarding the discussion in the public health section. I'm not sure if I heard correctly.

Do you feel that there is any need to have a discussion in the public health section?

MR. TYLER: No, I do not. I do not believe that there's any evidence to suggest that there's significant contamination at this site. The phase one study has already demonstrated that to my satisfaction.

In the absence of any evidence of site contamination or any quantification of the extent of that contamination or of soil levels, there's no basis to even do an analysis.

So, my view is that there's no necessity for any kind of health risk assessment to be conducted in that context.

MS. LUCKHARDT: Thank you, I have nothing further.

HEARING OFFICER WILLIAMS: CURE?

MS. REYNOLDS: Yes.

CROSS-EXAMINATION

BY MS. REYNOLDS:

Q Mr. Ringer, I have a couple questions about waste-4, condition waste-4. Does this condition require the environmental professional to be on site during all soil-disturbing activities?

MR. RINGER: No, not on site.

MS. REYNOLDS: So who would be responsible for detecting contamination in the first instance during construction?

MR. RINGER: The people who are doing the construction.

MS. REYNOLDS: Condition waste-4 also

requires the applicant to contact certain agencies, quote, "If, in the opinion of the environmental professional, significant remediation may be required."

This condition gives the applicants environmental professional discretion to determine whether significant remediation is needed, correct?

MR. RINGER: If it may be required, not if it's needed.

MS. REYNOLDS: Could you explain --

PRESIDING MEMBER MOORE: Wait, I'm sorry, Mr. Ringer, I miss the distinction of that. Would you answer that question again? I've been playing that sentence back in my mind.

Let's try again. Counsel, you ask your question again and let's see if we --

MS. REYNOLDS: Okay. Do you want me to quote the relevant portion of the condition again?

PRESIDING MEMBER MOORE: Go ahead, just so we get a complete question on the record.

MS. REYNOLDS: Okay, the condition states, if, in the opinion of the environmental professional, significant remediation may be required, and it continues. Does this condition

give the applicants environmental professionals discretion to determine whether significant remediation is needed?

MR. RINGER: No. If the environmental professional thinks that there may be some remediation that's required, the reason he has to contact the various agencies are to seek their determination on whether something actually is required.

The environmental professional is not going to make a determination of whether something actually is needed, but if they come into contact with contamination that's, for instance, more than de minimis contamination, then in the opinion of the environmental professional, that's what he's there for, is to make those determinations.

MS. REYNOLDS: But he does not need to contact the agencies listed in waste-4, does he, if, in his opinion, significant remediation may not be required?

MR. RINGER: Correct. If they just find small amounts of contamination and he determines that it's a very localized, for instance if in an area there's a very localized staining of the soil that's obviously petroleum hydrocarbons or

something, and it's a cubic foot or a cubic yard, he's not going -- the chances are that he's not going to contact the agencies.

MS. REYNOLDS: So it's his decision?

MR. RINGER: Correct.

MS. REYNOLDS: If contamination is found during project construction the proposed conditions do not give the CEC any authority to do anything about it, correct?

MR. RINGER: As far as the waste conditions go, I'm not familiar with the worker safety, but as far as the waste conditions go, if they make a report -- if the environmental professional files any reports, we get a copy of that and we look that over.

And then we also can have oversight as to whether or not we think that perhaps they should have contacted any other agencies.

MS. REYNOLDS: Can you tell me where that's stated in the conditions or verification?

MR. RINGER: Verification, waste-4, the project owner shall notify the CPM in writing within five days of any reports filed by the environmental professional. And indicate if any substantive issues have been raised.

MS. REYNOLDS: Does that verification give the CPM any oversight authority or any avenue for involvement in these issues?

MR. RINGER: Well, that's why we have this verification in there is that if we get a report, so we can look at it, we certainly can raise questions as to whether we feel that the appropriate agencies either need to or should have been contacted.

MS. REYNOLDS: Is that something -- I don't see that in the verification. Is that something you're implying into the verification?

MR. RINGER: I guess you can say it's implied. That's one reason that we get submittals and look them over.

MS. REYNOLDS: Approximately one-half of the water supply line would be placed underground, correct?

MR. RINGER: I believe that's correct. I believe that's correct.

MS. REYNOLDS: I have no further questions.

PRESIDING MEMBER MOORE: All right, on recross? I'm sorry, redirect.

MS. WILLIS: Just one question.

REDIRECT EXAMINATION

BY MS. WILLIS:

Q Mr. Ringer, do you routinely review all the submittals that are required under this condition in other projects?

A Yes, for every project, for every waste condition I review all the submittals. And then I pass on my recommendations to the compliance project manager.

If that were to include any further action necessary on the part of the project owner, then that would be taken.

MS. WILLIS: That's all I have, thank you.

HEARING OFFICER WILLIAMS: Anything further?

MS. REYNOLDS: Yeah, I have one follow up.

RECROSS-EXAMINATION

BY MS. REYNOLDS:

Q Mr. Ringer, is this standard CEC practice, or is there anything written that says the CPM has authority to, once he's reviewed this report, recommend or require changes to it?

MS. WILLIS: Actually, I object on the

grounds that he is not the compliance manager on this project. To the extent that he knows that answer, but he isn't the compliance manager.

MS. REYNOLDS: Well, I think he just testified as what normally happens, so --

MS. WILLIS: As part of -- as the waste management staff person. You just asked what the compliance manager would do.

MS. REYNOLDS: Okay, Mr. Ringer, under the proposed conditions of certification, does the condition or the verification expressly give the CPM or any one at the CEC any oversight authority or any other type of authority?

MR. RINGER: It's not expressly stated; however, we routinely review all the documents that we received, and with the guidance -- if I had any questions at all I'd contact the agencies, myself, and see if there's any question.

MS. REYNOLDS: No further questions.

PRESIDING MEMBER MOORE: Okay. Applicant? None.

All right, rather than just start CURE's testimony, I have to make a conference call at 11:00, so we'll call time out until 11:15. And I'll be back downstairs.

(A recess ensued.)

HEARING OFFICER WILLIAMS: Okay, we're going to go on the record. And I would note that all parties who were present before the recess are again present.

I would also note that I had a discussion with the parties, and that we've agreed that transcripts -- excuse me, briefs on all the topics that we've covered so far will be due ten days from the date that I receive the transcript of today's hearing.

And I will email the parties of that date. If the day happens to fall on the weekend, then the ten days will carry over to the first -- or holiday, for that matter -- the briefs will carry over to the first business day following the weekend or holiday. Okay?

Okay, with that, unless Commissioner Moore has something, we're ready to proceed with CURE and its presentation.

Whereupon,

J. PHYLLIS FOX

was recalled as a witness herein, and, having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION

BY MS. REYNOLDS:

Q Dr. Fox, you have before you a document entitled, testimony of J. Phyllis Fox, Ph.D., on behalf of the California Unions for Reliable Energy on waste management and worker safety impacts of the Elk Hills Power Project, dated January 12, 2000.

A I do.

Q Was this testimony prepared by you or under your direction?

A It was.

Q Is this testimony true and correct to the best of your knowledge?

A It is.

Q Do you have any changes to your testimony?

A Yes, I do, on the last page, and I believe you prepared an errata. On the last page, page 14, the first bulleted item, everything from in the last line of that bulleted item, the phrase, "and within the three-quarter mile oil development area" should be struck.

MS. REYNOLDS: I believe we have identified that as exhibit 21-I.

HEARING OFFICER WILLIAMS: I, I believe. Yes, it has been admitted.

BY MS. REYNOLDS:

Q Can you briefly state your qualifications with respect to hazardous waste contamination and related worker exposure issues?

A Surely. I have worked on a large number of contaminated sites in California over the past 20 years, including several oil field properties.

Q Can you summarize your testimony for the Committee?

A Yes. In my opinion it's likely that contamination will be encountered during the construction of this project. And I think both the applicant's written testimony, the AFC, and the FSA all acknowledge that possibility. It's one of the points that I think all of the parties agree on.

Some of the reasons that I am concerned about the discovery of contamination during construction is first the cultural resources survey that was done on site noticed in two separate areas an odor of petroleum hydrocarbons on the site during their survey.

Second, there are portions of the site

that are covered with grass and vegetation. And in a grassy area, in the course of a phase one, you cannot observe contamination, even if it's present.

And then finally, based on a photograph in the AFC of the site, you can clearly see that there are pipelines that go beneath the surface. And it is pretty common knowledge that pipelines leak. And in the course of a phase one you could not visually observe any subsurface leakage from those pipelines.

I believe that summarizes the reasons that I believe there's likely to be contamination.

Since we all agree that contamination is likely to be discovered, or it could potentially be discovered during the construction of the site, I think the question before the Commission is what to do about it. And I'd like to direct the remainder of my remarks to what to do about it, basically.

And, in my opinion, three things need to happen. First, since it's obvious that there are subsurface facilities at this site, based on the photograph in the AFC, which by the way is figure 3.3-1, I think a geophysical survey should be done

to identify the locations of any subsurface structures. Because they could pose a real safety hazard to construction workers if you accidentally run into them.

Second, I feel in the case of the project site, itself, that some characterization work should be done prior to construction. I would never recommend that every square inch of soil be remediated, as suggested by the applicant in their testimony. I don't believe I ever made any remarks like that in any of these hearings.

However, I do feel that some --

MS. LUCKHARDT: I would object to mischaracterization of our testimony.

HEARING OFFICER WILLIAMS: Okay, you'll have an opportunity to clear it up on cross-examination.

DR. FOX: I do feel that some characterization work is warranted here for a number of reasons.

First, in my testimony last week I showed a figure that, from the AFC again, that located wells on the boundary of at least three sides of this facility. And wells typically have associated with them subsurface pipelines and

sumps of various types that contain drilling muds and produced water and other materials. They are literally on the boundary of this facility.

And then with respect to the linears, the phase one did not address the linears at all. And based on the applicant's estimates of disturbed area, 110 acres would be disturbed in toto, of which 15 of those are at the plant site.

The remaining areas that would be disturbed for the gas line, the water line and the transmission line have not received any investigation that I am aware of that's in the record. There hasn't been a phase one done on those linear disturbed corridors. Or, as far as I know, any sampling, either.

Now, both the applicant and staff have proposed conditions of certification to deal with undiscovered contamination during the construction process, itself. And I would like next to turn to those proposed conditions and critique them. And then after I critique them I would like to make some recommendations about what I think needs to be in the proposed conditions of certification.

First, I would like to go to the waste management section of the FSA which Mr. Ringer

sponsored. To page 85, waste-4.

And in this condition Mr. Ringer proposes that if contamination be identified, an environmental professional would be called in to make observations and recommendations as to the disposition of the contamination.

I have a number of problems with that. First, in contaminated properties or potentially contaminated properties, the environmental professional is normally on site, rather than at an off-site location where they have to be called in.

Mr. Ringer suggested, based on an exhibit to my testimony, that in the case of the Sacramento Federal Courthouse, that that was not the case. However, I am the author of that oversight plan that was developed by the City of Sacramento, and I was there. And he simply misinterpreted what was written.

The environmental professional at that site was on site throughout construction. And the sentence that he read, if you looked at other portions of it, you would discover that the environmental professional was there. And all that was being called for in that particular

location that he quoted, was for the construction manager to find the guy on the site and bring him over and point out the contamination.

The environmental professional was continuously present during construction of the federal courthouse in Sacramento.

The second problem I have with waste-4 is it doesn't require any monitoring. Normally when construction takes place in a contaminated or potentially contaminated area the environmental professional will use handheld instruments to make real time instantaneous measurements during the construction process.

Most typically you will find an FID, a flame ionization detector or a PID, a photo ionization detector, and in many cases both used. In addition to an FID or a PID, which measure volatile organic compounds, it is also typical to use a handheld device for making measurements of dust. And the most commonly used method in my experience is a miniram, like a DR2000 for example, which uses a light scattering technique to measure dust concentrations.

Dust concentrations are important because you can have elevated concentrations of

metals associated with the dust. And you can also have elevated concentrations of semi-volatile organic compounds, like PAHs and PCBs associated with them. And you want to watch the dust levels to make sure that they are not elevated.

It is also fairly typical for the environmental professional to be empowered with the ability to collect soil samples and send them off for testing. And that is also not required by waste-4.

A third problem I have with waste-4 is it does not specifically require that construction be stopped in the event that contamination is identified. And I think that is a fairly important item to include in a certification condition.

If you identify undiscovered contamination and you continue working in it and don't rope off the area and stop construction in that particular area, you could have adverse exposures before anyone has an opportunity to figure out what it was.

A fourth problem I have with waste-4 is it requires no training of the workers. And many of the projects that I've worked on where there is

known contamination at a site, the workers, themselves, particularly the excavation workers, will be HAZWOPER trained. And here there's no requirement for any HAZWOPER training of the workers who will be working in what I think all parties acknowledge as being a potentially contaminated area.

And then fifth, waste-4 does not specify any reporting protocols, if you will, for the environmental professional. A construction manager's main goal is to make sure that the project is completed on time and within budget. And his top priority is not going to be worrying about contaminated soil.

I've worked on many sites where there is substantial friction between the construction manager and the health and safety professional at the site. And it's quite important that the environmental professional not report through the construction manager. There has to be a separate line of reporting.

Those are my comments on staff's waste-4. I'd next like to talk about a similar condition which is contained in the testimony of Gary Cronk. Gary Cronk's waste management

testimony in attachment A on page 4, there is a section 6, mitigation measures.

And the first of those is a measure that's similar to staff's waste-4, but in my opinion, it's much closer to the mark. It's a good start.

It first requires excavation contractors hired to perform demolition of equipment and initial grading of the plant site will be OSHA trained in hazardous waste operations. That's a good first step.

The problem I have with that is it's not specific as to the type of training that would be required. And I fear that the term OSHA-trained may not include HAZWOPER training based on some of the testimony I heard this morning. I would recommend that the excavation workers receive 40-hour HAZWOPER training.

The applicant's proposed mitigation measure goes on to say a qualified geologist will oversee field operations and perform field screening and analytical laboratory testing of soils disturbed during excavation and grading. This is very good.

The applicant here is proposing that the

environmental professional be on site; that the environmental professional be a qualified geologist; that the environmental professional oversee field operations; and that they perform field screening and analytical laboratory testing in soils. These are all very good recommendations and I support them.

However, with respect to field screening the applicant hasn't been specific as to what type of field screening would be done. And I would like to recommend that that phrase be expanded to identify what type of field screening would be done. And I would recommend PID/FID and a method to monitor dust continuously like a miniram.

They also recommend analytical laboratory testing of soils. Again, I support that, but again it's too general as it's stated. There should be additional language added here that would specify how many samples would be collected; like one sample every 1000 cubic yards, or every 5000 cubic yards.

There should also be a specification of what would be measured. And I would recommend that at a minimum metals should be measured because you can't smell them and you can't see

them. And I would also recommend that semi-volatile organic compounds be measured. Those are things like PAHs and PCBs.

They go on to say if contaminated soils are discovered which exceed cleanup levels established by the regional board and the county health department, the impacted soils will be excavated and transported off site to a permitted soil treatment facility.

Again, I support that. But, again it's not general enough. With respect to the cleanup levels I would like to see cleanup levels specified in advance. It's my understanding that DTSC is currently in the process of developing cleanup standards for the Elk Hills oil field.

They have draft recommendations at this point, and they are very close to publishing their finals. And I recommend, based on a review by the parties to make sure that we're all in agreement with them, and assuming that they're reasonable, that those DTSC proposed cleanup standards specifically for this oil field, specifically for industrial use, be adopted for use in this case.

And then finally, another component that is missing from the applicant's recommended

mitigation here is any trigger levels that would trigger action in the event that anything was detected with the field screening instruments, the PID, the FID or the miniram.

And I think those trigger levels need to be specified in a certification condition so we know what we're dealing with.

BY MS. REYNOLDS:

Q Dr. Fox, you stated that with regard to this proposed mitigation that it should identify which materials will be tested for. What detection limits would you recommend?

A The detection limits should be beneath the levels of concerns, and the levels of concern have not been determined yet, but I would recommend that the cleanup levels, when they are proposed by DTSC, would be a reasonable starting point.

Q Dr. Fox, in your opinion does the phase one environmental site assessment that the applicant had prepared for the project identify and assess all potential hazardous materials that may be encountered during construction?

A No. It does not. First it was restricted to the 15-acre plant site and didn't

address the linears at all. Second, it only addressed things that you could visually see. And as I stated previously there's a potential for subsurface structures here.

And there's also the potential for things that you couldn't see because of vegetation on the site. And there's also a lot of contaminants that might be there that you cannot see or smell.

Q Dr. Fox, you addressed, or you discussed your feelings with regard to staff's proposed condition waste-4. Do you have any comments about safety-1?

A Safety-1 is the worker safety proposed certification condition that deals with the construction health and safety plan, which includes a couple of pieces like the IPP.

I support that with one exception. I believe that it should be explicitly stated in that condition that it apply to contaminated materials.

Q Would you clarify that, what applied to the contaminant materials?

A That the various subplans under the construction health and safety plan explicitly

address contaminated materials. They're not normally considered in that kind of a plan. And, although the applicant in the AFC does note that, and has stated that they will be considered, there's no guarantees. There's nothing in the certification conditions that specifically require that.

Q Would you characterize the project site as a typical construction site?

A No, I would not.

Q Would you explain why?

A Well, it's in the middle of an intensely developed oil field where, you know, activities occurred over nearly a century, during much of which waste handling practices were not exemplary.

Q Do you have any response to the applicant's or staff's critique of your testimony?

A I do. With some patience I will go through point-by-point and rebut the comments that you heard earlier. And I'll probably do it in no particular order.

I believe staff testified that all 65 of the chromium contaminated sites that I identified and located on a map attached to my testimony had been remediated, implying that there was no

concern.

It is my understanding, based on discussions with DTSC, that many of those closed and remediated sites were done historically to different standards than are in place today --

MS. WILLIS: Excuse me, I'm going to object. We don't have that information in front of us. Do you have a record of that conversation? Or is that something that's before us?

MS. REYNOLDS: I believe that's appropriate in response to your witness' testimony about DTSC, their reaction, the letter that you provided.

MS. WILLIS: But we actually had a letter. She's talking about a conversation.

MS. REYNOLDS: I think she's capable of testifying to her knowledge based on whatever sources she's contacted.

HEARING OFFICER WILLIAMS: One second.

(Pause.)

HEARING OFFICER WILLIAMS: We're going to sustain the objection. It's hearsay, counsel.

DR. FOX: In my opinion many of those remediates sites were remediated historically and they were not remediated to today's standards.

And were they re-evaluated, given today's standards, in many cases additional remediation would be required.

You heard testimony to the effect that chromium 6 is reduced to chromium 3 in the environment and that chromium 3 is a less hazardous form. It is true that some chromium 6 does go to chromium 3, and that chromium 3 is a less hazardous form.

However, the reactions are reversible. And it's also true in many cases, and in many of the cases that I have worked on, that the opposite happens. And that chromium 3 actually goes to chromium 6.

And, additionally, the materials that were being cited, which are attachments to my exhibit, make it clear that the conversion of chromium 6 to chromium 3 occurs in the drilling muds, themselves, rather than in the compounds that are used in the drilling muds.

Historically, the way chromium 6 compounds were added is a bag of the chromate compounds was sitting next to the well, and you would add chromium into the drilling mud as you needed it. And it was common for spills from the

bags to occur. And it was also common for the bags, themselves, to end up being buried and left on site.

That chromium, the chromium from the additive that was used does not necessarily convert to chromium 3.

You also heard testimony to the effect that chromium 6 could be easily detected because it's very soluble and when it dries out it leaves a yellow powder on the surface is what I believe I heard.

Well, that happens only after it rains. When it rains and the soil dries out, it can form a yellow powder on the surface. However, it goes away pretty quickly, and it doesn't stay there. You know, the wind blows it away basically.

So you would only be able to see that sort of thing immediately after rain. As you know, it doesn't rain very much in Kern County, and a lot of this construction would take place in the summer.

Second, if the spill happened to occur in an area where there's vegetation growing, or has subsequently been vegetated, you wouldn't be able to see any yellow chromium powder on the

surface.

There was a suggestion that arsenic and chromium would always be associated with crude oil which you can see, or with drilling muds that are clay particles which you could also identify by differences in texture. That's not true.

There are lots of uses of both chromium and arsenic in the oil field which would result in their being present in forms other than associated with oil, or other than associated with drilling muds.

I just gave you an example of hexavalent chromium 6 which was basically scooped out of a bag that was located at the well site, itself. Lots of problems with spillage. That wouldn't be associated with drilling muds; it wouldn't be associated with oil.

Ditto on arsenic. Arsenic compounds were used as anticorrosion agents in oil drilling historically. And the arsenic was introduced into the well and then upon production the arsenic-containing fluids were pumped out and put into a sump. There were lots of problems with sumps overflowing and also with sumps being present in contaminants at the bottom.

There was some discussion of the fact that the primary exposure route for construction workers is inhalation. That is simply not true. The main exposure route for construction workers is inadvertent ingestion of soils and dermal exposure due to a caking of soil on the skin. And I know that from my experience.

In the case of the Sacramento Southern Pacific Railyard sites where I worked for nearly a decade, the City of Sacramento was very concerned about the exposure of construction workers during construction.

And as part of that project we actually went to active construction sites in the Sacramento area, and also in other places, and observed the exposures that construction workers received.

And construction workers, in fact, get a lot of soil on exposed skin, and they also inadvertently ingest soil. It is standard practice by the Department of Toxic Substances Control to require construction worker scenarios and risk assessments performed for contaminated sites and DTSC commonly requires that all three exposure routes be included: inhalation, dermal

and ingestion.

And based on the health risk assessments that I have personally done on construction workers, usually the largest fraction of the risk comes not from inhalation but from dermal or ingestion. And that's just the way it is.

If you had a potent inhalation toxicant it could swing the other way, but most of the contaminants that you would expect to find in an oil field would primarily act through ingestion or dermal absorption.

Which leads me to one of my favorite topics, the PELs, or the permissible exposure levels --

PRESIDING MEMBER MOORE: Before you go there, Dr. Fox, let me just ask you a question about something you were just saying about the hexachromate 6, which you assumed, or which you stated was used out of bags and things where there was a well.

Just for my own recollection, I've been going back over the record, there is no well on this site, is there?

DR. FOX: There's no well within the boundaries of the site that I am aware of.

However, there are four wells sitting right outside of the boundary.

PRESIDING MEMBER MOORE: And those sites typically would have had this type of material used when they were done?

DR. FOX: They could have. I did not do any research to determine that those wells were drilled.

PRESIDING MEMBER MOORE: Okay. Thank you.

HEARING OFFICER WILLIAMS: Please proceed.

DR. FOX: You know, and you can't eliminate the possibility that there was a well on the site historically, for which there are no records. Because this oil field has been in existence and actively produced for nearly a century.

BY MS. REYNOLDS:

Q Dr. Fox, did you say you can or cannot?

A You cannot eliminated the possibility that a well, at some point, over the history of the Elk Hills oil field may have been present on the site.

HEARING OFFICER WILLIAMS: Yes, I

believe you were moving into PELs, Dr. Fox, just to --

BY MS. REYNOLDS:

Q PEL.

A Oh, PEL, right PEL. Permissible exposure limit. We heard testimony that the CalOSHA PEL's protect workers at contaminated sites and should be used for evaluating worker exposure at contaminated sites.

I have a couple of points I would make about that. First, the PELs were developed for use in a controlled workplace environment, not for construction workers digging in contaminated soils.

The PELs should not be used in isolation. They come -- if you go back and look at the origin of the PEL, you will find that they assume an aggressive industrial hygiene program that has a number of parts. Typically includes medical monitoring. It typically specifies different protective equipment that should be nearby or used. Like in the case of arsenic hoods are supposed to be used.

It assumes that monitoring takes place. It assumes that medical supervision is available.

These PELs are not designed to protect even 100 percent of the workers. And if you go back and look at the OSHA documents that develop them, they're quite explicit about that.

That's why there's five or six other pieces that go along with them, like protective hoods and medical surveillance.

Furthermore, they assume exposure through inhalation only. When there is a risk of say a skin carcinogen, NIOSH documentation will typically require that gloves be used and that no skin be exposed, which of course you can't usually reasonably do at a construction site.

And as I just explained, inhalation is not the main exposure route for a construction worker. It's dermal and inadvertent ingestion. The PELs are aimed primarily at inhalation exposures.

Furthermore, there have been a lot of studies that have been published in the refereed literature which have demonstrated that the PELs, if you go back and you look at the studies that the PELs were based on, you will find in many cases that the levels at which the PELs were set are actually levels in which there were adverse

health impacts in the studies that were used.

And then finally the basis for the PELs is inconsistent. And in many cases what you find is they were set at the lowest level that was measured at the time.

And I believe there is an exhibit in my public health testimony written by Dr. Melanie Marty, who's the Chief of the Air Toxics Branch at the Office of Environmental Health Hazards Assessment, or OEHHA, --

MS. LUCKHARDT: I'd have to object to this, this hasn't been filed in the worker safety area. I realize that this is a document she may have used in public health, but it isn't something that has been filed and referred to in worker safety.

MS. REYNOLDS: Well, I believe that staff -- you know, there's some amount of cross-over here. Staff referred to public health issues in their testimony.

MS. LUCKHARDT: I believe that was simply to clarify --

MS. WILLIS: Actually we were --

HEARING OFFICER WILLIAMS: We'll allow it, we'll allow it, it's in the record.

DR. FOX: Anyway, if you look at her email, which is an attachment to my public health testimony, she makes many of the same remarks I'm making here about the PELs. And believes that they are inappropriate for assessing health impacts to workers at contaminated sites.

HEARING OFFICER WILLIAMS: Where did you indicate that that was, in your public health? Is it in --

DR. FOX: It's one of the exhibits to my public health testimony.

I think you heard a lot of testimony about the fact that you can smell or see any of the contamination that you're likely to identify or run into on this site. And specifically there was a mention that if natural gasoline were encountered, which was one of the materials that was handled at this site, that you could readily detect it by odor because it has a characteristic odor of gasoline.

I'm not sure if that's true. I don't know how many of you have been at a construction site in an oil field, but the oil field has a very high background odor of petroleum hydrocarbons that permeates the air on almost a continuous

basis.

And at a construction site where you've got a lot of diesel equipment, there is additionally the smell of diesel in the air. And also at a construction site you usually have a fuel tank, so there's the smell of hydrocarbons from refueling of vehicles, as well.

In fact, at a construction site in an oil field one would expect to find a fairly high background level of hydrocarbon odor. So I think that it is unlikely that you could specifically identify contaminated soil based on hydrocarbon odors in this kind of environment.

There was a DTSC letter that was just introduced into the record by Mr. Ringer, and I would like to talk a bit about that.

HEARING OFFICER WILLIAMS: Dr. Fox, it's been marked as exhibit 33. It is exhibit 33.

DR. FOX: I believe that this letter describes an evaluation that DTSC did of the project site only, and not of the linears. And it also does not imply that DTSC is not concerned about the impact of potential contamination at this site on construction workers.

DTSC simply look at the project site to

determine whether or not any of the --

MS. WILLIS: I'm going --

DR. FOX: -- solid waste management --

MS. WILLIS: -- to object. Do you work for DTSC? I'm not sure that she's qualified to testify to what DTSC looked at, based upon this letter, other than what it says.

PRESIDING MEMBER MOORE: Yeah, let's just take what's in the letter at face value. Let's not take it any farther than that. Your comments on the components of the letter are welcome.

HEARING OFFICER WILLIAMS: So the objection is sustained as to speculation basically on your part. Commissioner Moore would like you to contain your remarks to basically what's stated in the letter.

DR. FOX: Okay. The purpose of this letter was to point out that the project site is not located within any of the solid waste management units that were identified in the June 30, 1998 letter.

It does not address other issues. And, as you know, there is a memorandum of understanding between DTSC and the Energy

Commission to deal with site contamination issues vis-a-vis worker impacts. And this individual who signed this letter, Wade Cornwell, who is the chief of the land disposal branch, is not involved in that --

MS. LUCKHARDT: Wait, we've gone beyond, once again. I believe here she is testifying as to the involvement of this specific person in DTSC. We have his name and his title contained within the letter, but we have nothing further.

MS. REYNOLDS: We would be happy to have Mr. Cornwell come in here and testify. CURE has no means of compelling Mr. Cornwell to testify about this letter about --

MS. LUCKHARDT: If CURE was interested she could have requested that the Committee subpoena Mr. Cornwell to appear.

MS. WILLIS: I'm going to second that objection. We can't speculate what Mr. Cornwell's involvement in this was.

PRESIDING MEMBER MOORE: We're going to sustain the objections and ask Dr. Fox, in this case, to state her objection to the conclusion if that's really where she's going, as succinctly as she can.

I think we're going to have to stay away from characterizations about the people who wrote it. I don't have that in front of me, and so it's simply not possible to focus on it.

So, if you have a disagreement with the conclusion I think you should say that, and then let's go to the next question.

MS. REYNOLDS: We would also -- I mean this letter was not attached to staff's testimony or referred to it in, I don't believe.

MS. WILLIS: The letter was docketed on April 12, 1999, so CURE did have access to this letter and probably received a copy of it.

MS. REYNOLDS: Was this letter contained in --

HEARING OFFICER WILLIAMS: Counsel, I don't think we need to discuss it. I mean I gave you an opportunity to object to the letter coming in as evidence.

MS. REYNOLDS: Okay, I would then ask the Committee to hold the record open and subpoena Mr. Cornwell.

PRESIDING MEMBER MOORE: For what purpose? I mean, let me just, unless I'm missing something, he has one sentence here, and I'll re-

read it, at the risk of being totally redundant: Based on a review we have determined that the proposed project is not within the areas of concern identified by DTSC report titled "Naval Petroleum Reserve No. 1, Elk Hills, California, Resource Conservation and Recovery Facility Act, dated June 30, 1998. Therefore, DTSC has no comments on the proposed project."

Where's the mystery? No comment. In their opinion it doesn't lie in the project boundary. Where's the controversy?

MS. REYNOLDS: I think the statement that you just read states, and I think this is a reasonable -- I don't even think this is an interpretation -- that it's not within areas that they have already identified as contaminated and in need of further assessment or remediation.

It doesn't say anything about the possibility of finding further contamination during construction.

MS. LUCKHARDT: I believe counsel is testifying, and I also believe the letter states what it states. We can all read it.

PRESIDING MEMBER MOORE: Well, I think actually -- we can all read it. I just read it.

And it does state what it states. So if there's a disagreement with that, then that's a point that Dr. Fox can say, I disagree with this because A, B and C.

But after that, we're going to have to confine it to that. If you've got other questions, counsel.

DR. FOX: I disagree with this. The exhibit to my testimony shows that the project linears indeed fall within some of the areas of concern.

Furthermore, I'd like to point out that there's an alternate process that the Energy Commission is supposed to go through to evaluate potential contamination at sites such as this. There's a memorandum of understanding and a requirement for staff coordination with DTSC on these sorts of issues.

The person responsible for that happens to reside in statewide compliance --

MS. LUCKHARDT: I think we are moving beyond the ability of this witness to say what the Energy Commission should be doing in relation to the MOU.

PRESIDING MEMBER MOORE: Well, no,

that's not right. You think there's something within the Energy Commission, there's a process within the Energy Commission that runs parallel to this or supplements this. What do you think that process is?

DR. FOX: Right, there's a --

PRESIDING MEMBER MOORE: Name the process.

DR. FOX: The memorandum of understanding between DTSC and the Energy Commission.

PRESIDING MEMBER MOORE: Okay, thank you. And we'll take that and let's stop.

Counsel.

MS. REYNOLDS: Okay.

BY MS. REYNOLDS:

Q Dr. Fox, do you have any other items to rebut?

A Yes, I do. There was a suggestion that because the linears follow existing corridors that one should not be concerned about them.

I would point out several things about that. First, we don't know when those existing corridors were installed; if they were 50 years ago, nobody may have worried about contamination

along them.

Further, we don't know whether anybody bothered to look when the existing corridors were installed. So, just because the pipelines and linears of this project follow existing corridors does not mean that there is no concern about potential contamination within those corridors.

There were remarks about the fact that public exposure standards should not be used for oil field workers because members of the public include many sensitive individuals and public exposure standards are designed to protect all individuals. And furthermore, that workers receive shorter exposures.

Those types of issues are easily dealt with in health risk assessments by using a shorter exposure duration time, and by using cancer potency factors and other values that are not tied into the sensitivity of the exposed parties.

Routinely done, it's very common for this kind of site to do a risk assessment. And develop cleanup standards to insure the protection (sic) workers are protected.

Q Dr. Fox, does that mean you believe a health risk assessment should be prepared for this

project?

A I do, but unfortunately there's no data to prepare one with because the applicant has not done any characterization at the site.

Let me quickly look through my notes and see if I have anything else.

(Pause.)

DR. FOX: As to the claim that the health and safety plans couldn't be prepared now because you don't have a detailed construction plan, I don't agree with that.

I've worked on many projects where the health and safety plan was prepared in advance of having the detailed information that the applicant claims you need.

Anyone that has prepared any number of these things knows that 99 percent of them are boilerplate. And anyone that has prepared any number of these things is intimately familiar with construction projects and what the dangers are of construction projects.

All of the equipment that would be used on this site has already been identified in the AFC. I could prepare a health and safety plan which had most of the details that would be of

concern for this proceeding in 20 to 40 hours without knowing any more than I know now.

There was a suggestion that there were no buried pipelines on site. I believe staff claimed that the phase one states that there are no buried pipelines on site in an attempt to rebut my written testimony.

First, I'd like to point out that Mr. Tau, in his testimony last week, stated that there were buried pipelines on the site. And second, I'd like to point you to figure 3.3-1 from the AFC. I have a copy here if you'd like to look at it.

PRESIDING MEMBER MOORE: That's okay, we have it.

DR. FOX: But if you look at that figure carefully you will see in a number of places that there are areas where pipelines simply go underground. Underground pipelines are buried pipelines in my view.

There were the usual remarks about the fact that workers outside of the boundary of the power plant should be treated as workers and the only exposure standards are OSHA exposure standards.

I believe that dialogue more appropriately belongs in the public health section. I'd just like to remind you that I disagree with it. That even though this is private property, the standard procedure for evaluating off-site health impacts throughout California by every regulatory agency I've ever worked for is to evaluate the workers within the boundaries of a facility that one is evaluating, such as a power plant, as on-site workers. And apply OSHA exposure standards.

When you're evaluating off-site impacts due to the on-site activities like the ammonia storage tank or handling of contaminated soil during remediation or construction, the appropriate standards to use for those off-site workers are different. You never apply OSHA exposure standards for exposure of parties off of the site where the activity occurs.

And there are many attachments to my public health testimony that very clearly make that point.

That's all I have.

MS. REYNOLDS: That will be all.

HEARING OFFICER WILLIAMS: Thank you.

PRESIDING MEMBER MOORE: Thank you. Staff. Or, I'm sorry, I'll go to the applicant.

CROSS-EXAMINATION

BY MS. LUCKHARDT:

Q Dr. Fox, you've referred to preparing a health and safety plan, and you have referenced the one for the railroad site. Can you describe briefly or name the other ones that you've prepared?

A Sure. Health and safety plans for Avila Beach.

Q Did you personally prepare the health and safety plan for Avila Beach?

A I didn't prepare the entire plan. I was Unocal's reviewer for the plan.

Q Okay, so you reviewed the plan at Avila Beach?

A I reviewed the plans.

Q Thanks. Any others?

A Yes, I prepared a number of health and safety plans for remediation projects in Colorado.

Q And what type of remediation projects were they?

A A variety of projects, most of them involved ponds, abandoned waste ponds.

Q So actual waste material, not like a pond that animals would be living in? A waste pond?

A A waste pond, that's right. I was also involved in the health and safety planning for the Guadalupe Oil Field.

Q And did you prepare that plan, or review that plan?

A No, I did not prepare that plan, but I was involved in the review of it.

Q And do you have HAZWOPER training?

A No, I don't.

Q And in reviewing your rÇsumÇ I didn't see you mention membership in things like American Industrial Hygiene Association, or American Academy of Industrial Hygiene, or Academy of Certified Hazardous Materials Managers.

Are you a part of any of those groups?

A No, I'm not.

Q And in referring to your specific testimony you used various words that I'm hoping you might help me understand a little better.

Actually before that, have you ever been on the Elk Hills site?

A No, I haven't.

Q You refer to, on page 1 of your testimony, it's the third paragraph, first line, you say, contaminated. Can you define what you describe as contaminated, or when you determine that something's contaminated?

A Page 1, third paragraph --

Q Third paragraph, first line.

A Contaminated would mean presence of chemicals above natural background.

Q Okay, so contaminated to you is everything above background, is that correct?

A Yes.

Q And then on page 2 of your testimony there is a reference in the third paragraph to toxic substances. What do you define as toxic?

A They are chemicals that are known to have adverse health impacts.

Q At what level?

A Depends on the chemical.

Q And where would you be determining what the level would be per chemical?

A It would depend on who was being exposed and how long they were being exposed, and what the agency was that had oversight.

Q Okay. In this, so then it would vary?

A Yes, it could vary.

Q I guess I'm a little confused about your testimony as to whether your concern is for site clean up or worker exposure. Maybe you could help me out with that.

A My concern is with worker exposure to contamination on the site.

Q Okay, so your concern is the impact to workers from any potential site contamination?

A Right.

Q In your discussion regarding PELs, are you suggesting that the Commission should develop new standards?

A No, I'm not.

Q Then I guess I'm confused, because it's my understanding that PELs apply to worker safety, and you just had a large discussion where you went through the fact that you didn't like the way PELs were determined?

A PELs are generally, as I stated, not applicable to construction workers working in contaminated sites for a couple of reasons.

First, the PEL is based on inhalation exposures exclusively. That's how they were developed. They were developed from inhalation

exposures. And at a contaminated site construction workers can have other exposure routes, like inadvertent ingestion of contaminated soil and dermal exposure.

Q Okay, but I guess it's my understanding that OSHA requires, and OSHA has set these PEL levels for worker exposure, is that correct?

A Yes, they have set them for worker exposure, but they were not set specifically for workers working in contaminated sites.

Q Then what were they set for?

A They were set primarily for classical workplace environments like factories, for example.

Q Isn't that an indoor exposure?

A Yes, it is.

Q Wouldn't an indoor exposure be greater than an outdoor exposure?

A No, because in an indoor exposure you have ventilation systems.

Q So you mean to tell me that in an indoor exposure with ventilation you have better air circulation than in an outdoor construction environment?

A You can have better circulation. You

also have a controlled workplace.

Q So you're telling me a construction site is not a controlled workplace?

A It's not a controlled workplace in the same sense that a worker working with hazardous materials in an indoor environment is. In an indoor environment you can have hoods, you can have different protective clothing that the worker would use that would really get in the way of a construction worker.

For example, in the case of arsenic, the NIOSH adopting document was seven different items, in addition to the exposure level that has to be in place, like typically you'd use a hood, you know. You wouldn't expect to see a construction worker with a hood over their head.

Q So, are you saying that personal protective equipment A level that could not be used on a construction site?

A They could be, but we don't have any certification conditions that require them.

Q You mean to tell me that if we violated the PEL levels we would not need to put construction workers in greater levels of personal protective equipment?

A I assume you would, but there's no conditions here that require that you do anything to determine whether or not you would even violate those kinds of limits.

Q Have you not reviewed the outlines of the IIPPs contained in the AFC?

A Yes, I have reviewed that.

Q I'm sorry, I'm going to have to get to that section.

Okay, if you look at 514-2 at the bottom, it's table 514-1, the very final entry is working with hazardous materials and hazardous waste.

A Yes.

Q Does that not identify procedures for dealing with hazardous wastes and hazardous materials?

A It does, and I support that and applaud you for having it in there. And I believe earlier I testified that safety-1 should be expanded to specifically include this. There's nothing in safety-1 the way it's now written that would require this.

Q It's my understanding of the way the Commission -- going back to our earlier

discussion, then it is your testimony that personal protective equipment for construction workers would not be required by the PELs?

A If you're asking me if personal protective equipment would not be required by the PEL, if you're monitoring for all the constituents of concern, and you have an aggressive health and safety plan in place, if you exceeded the PEL you could trigger it.

The question is what kind of monitoring are you going to do? And are you going to look for all the right things?

You don't have any characterization data on this site at all. I mean you could have something out there that you don't expect. And you wouldn't know if somebody was going to be exposed to it or not.

That's the problem. You don't have any information here. I mean I haven't heard anybody advocating doing monitoring for arsenic in ambient air so you could determine whether or not the workers were exposed.

If there were explicit requirements for monitoring for arsenic, for hexavalent chromium and for other materials, --

Q What level of concentration of arsenic would be required to be in the ambient air to exceed a PEL level?

A I don't have those in front of me right now. I don't recall. I think it's something like 1 mcg/cubic meter. It is low, but I don't recall as I sit here.

Q And what percentage of the soil would have to be arsenic to get 1 mcg/cubic meter in the air?

A I would have to make a calculation to answer that. I can't answer that as I sit here.

Q Would it be a relatively great percentage?

A It wouldn't have to be if you had a hot spot with relatively high arsenic concentration and you were digging in it, it wouldn't have to be very much soil.

Q I guess I'm confused because if it's in the soil in a small area how could you, on an open air construction site, wouldn't the dust be so thick that you couldn't see if you got 1 mcg/cubic meter of arsenic in the air?

A No.

Q And this is based on what?

A My experience.

Q Your experience on which site?

A My experience working on the Southern Pacific Railyard site; my experience working --

Q And --

A -- on the Avila Beach site.

Q And the contamination at Avila Beach, I believe, I'm not as familiar with it as you are, was quite extensive, it's my recollection?

A Pardon?

Q The contamination at Avila was quite extensive?

A The contamination at Avila was primarily petroleum -- it was petroleum hydrocarbons. I wouldn't characterize it as extensive, but it was petroleum hydrocarbons.

Q Okay. You wouldn't characterize the Avila Beach contamination as extensive, then how can you possibly characterize this site as having any extensive type of contamination?

A I don't believe I used the word extensive in any of my testimony. My problem with this site is that nothing is known about the contamination at it because no characterization work has been done.

Q And looking at the Southern Pacific site, can you please describe the types of contamination that were contained in the Southern Pacific site?

A The Southern Pacific site, I think it's a 265-acre site, and most of the site is not relevant to this case, because there are contaminants other than petroleum hydrocarbon.

The reason that I picked the federal courthouse material, which I attached to my worker safety testimony, is because that was primarily a petroleum hydrocarbon contaminated site.

Q And in your work at Avila Beach what was the arsenic contamination levels?

A Arsenic was not an issue there.

Q Okay. And what about the railroad yard?

A Arsenic was not an issue there, either.

Q Okay. I guess I'm confused because I thought earlier that you stated that those were the two sites where you had experience with arsenic?

A I said those were the sites where I had experience with health and safety plans, but I didn't say with respect to arsenic. I have worked on arsenic contaminated sites, but those are not

they.

Q And so which sites have you worked on that had arsenic contamination?

A They're all in Colorado, and they're all associated with various aspects of oil shale production. There are high levels of arsenic in oil shale and in the waste from oil shale.

Q Okay. You testified earlier that you could prepare a health and safety plan on this facility at this time. And I guess I'm confused again, because that it seems to me in some instances you're asking for additional information on the site, and yet on the other hand you're saying you could prepare the plan at this point in time.

Is it your recommendation that we use a boilerplate health and safety plan at this site?

A That's what is usually done. No. It's not my recommendation that you use a boilerplate one. I would prefer to see some actual characterization work done so you can tailor it to this particular site.

But in the absence of that, you can make some assumptions about what's there and set very low limits to make sure you've covered all your

bases.

Q So then you agree it would be better to do a site-specific health and safety plan?

A Yeah, it would be better.

Q You stated at one point in your testimony that in an oil field the background odors permeate the air, I believe, was that correct?

A That's correct.

Q From the oil field. And in your testimony you refer to the cultural resources expert referring to smells of oil, I believe, or hydrocarbons, is that correct?

A That's correct.

Q I guess I'm having trouble understanding the difference, or if an oil field emits odors which permeate the air, wouldn't that -- couldn't that have been what the cultural resources expert was noting?

A A couple comments there. I think my testimony about the background odor was in conjunction with an active construction site, and the point I was making was that at an active construction site you've got a lot of diesel equipment with the smell of diesel exhaust. You

also have fuel tanks that they use to fuel the vehicles.

In the case of the cultural resources study they only identify hydrocarbon odors in two locations, and not everywhere. So from that I would conclude that there wasn't a high level of petroleum hydrocarbon odors at the time they did the survey.

Q Would you consider a cultural resource expert an expert in contamination?

A I think that most people that have automobiles and live in 20th century America can identify petroleum hydrocarbon odors.

Q I was simply asking if you considered a cultural resource expert an expert in contamination.

A No, they're not experts in contamination, but I certainly would expect them to be able to identify a petroleum hydrocarbon odor.

Q Do you have experience with underground storage tank cleanup?

A Yes.

Q And can you identify which sites?

A Sure. At the South Hampton site in

Benecia there were a number of underground storage tanks that I dealt with there.

I have also worked on a number of leaking underground storage tanks at gasoline stations. One of them very recently in West Oakland.

MS. LUCKHARDT: I'm sorry, I've been handed so many notes over the last half hour I'm having trouble getting them all organized.

HEARING OFFICER WILLIAMS: Would you like a few minutes?

MS. LUCKHARDT: I would love a few minutes.

HEARING OFFICER WILLIAMS: Let's take five minutes.

(A brief recess ensued.)

HEARING OFFICER WILLIAMS: I would state that all parties who were present at the recess are again present.

Counsel, you may continue with your cross-examination.

MS. LUCKHARDT: I just have a few more questions.

BY MS. LUCKHARDT:

Q Dr. Fox, in your testimony you refer to

figure 3.3-1 out of the AFC.

A Correct.

Q And if you refer to that figure isn't it true that the pipes proceed through the berm area, and are then above ground?

A Are you referring to the top or the bottom figure?

Q I am referring to the bottom figure.

A Okay, in the bottom figure, right-hand side, middle, there are a series of pipes, it's like in a pipe corridor --

Q Correct.

A -- that does proceed underground through the berm. I would also, though, point you to -- those pipes make a 45-degree angle with another pipe which dives right underground.

Q Okay, I'm not seeing where that is. Maybe you can help me --

A Can I come over there?

Q -- find that.

MS. REYNOLDS: Make sure it's clear for the record.

(Pause.)

PRESIDING MEMBER MOORE: All right, we're all looking at the same picture then, and

there's an above-ground pipe proceeding from the right-hand side of the photograph at a 45-degree angle. It goes up about 4 cm and then dives underground.

So we're all seeing the same thing.

MS. LUCKHARDT: Okay. I'm going to move off of that because I don't know, myself, exactly whether that pipe ends right there or it goes into the ground. And it could be seen as going into the ground. So I can't dispute that.

BY MS. LUCKHARDT:

Q You refer to the use of a miniram in your testimony, is that correct?

A Yes.

Q Now, a miniram is used to determine the amount of dust, is that correct?

A Correct.

Q Does it detect metals?

A No, it does not.

Q Or PAHs?

A No, it does not.

Q Okay. And you stated in your testimony when we were talking about the cultural resources expert that any person could -- any person who has operated a motor vehicle could detect the presence

of hydrocarbons, is that correct?

A That's correct.

Q So then wouldn't that include a construction worker?

A Certainly.

MS. LUCKHARDT: I have nothing further.

HEARING OFFICER WILLIAMS: Staff.

MS. WILLIS: Just a few questions.

CROSS-EXAMINATION

BY MS. WILLIS:

Q Dr. Fox, you testified in regards to the cultural resource person ID-ing the petroleum hydrocarbons by odor, could they also identify the source and location?

A Not in the materials that I have seen.

Q Also, you talked extensively about -- you talked about the phase one study. Does the phase one site assessment procedure rely only on visual survey?

A No, it relies on records review, aerial photographs, and usually a site reconnaissance that relies on visual observation.

MS. WILLIS: That's all I have, thank you.

PRESIDING MEMBER MOORE: Thank you,

counsel. Redirect?

REDIRECT EXAMINATION

BY MS. REYNOLDS:

Q Dr. Fox, you were asked to define contaminated as used in your testimony. And you said that that would be chemicals above background concentrations.

Are these chemicals that could adverse impact human health?

A They could. You'd have to know what the concentration was and do an evaluation.

Q Dr. Fox, are you familiar with the HAZWOPER training programs and what is covered in those programs?

A Yes.

Q During your cross you referred to the AFC page 5.14-2, the last entry. Does this entry identify who, which employees would be HAZWOPER trained?

A No, it does not.

Q Does it identify whether the training would be the 40-hour training or the eight-hour training?

A No, it does not.

Q Would you like to see more detail?

A I would love to see more detail.

Q Dr. Fox, under stable wind conditions would contaminants in the soil that were released to the air during construction activities disperse quickly in the atmosphere?

A No. Under stable wind conditions it would primarily be volatile organic compounds and they would not disperse quickly.

Q In your opinion should there be site characterization of contamination before the worker health and safety plans are prepared?

A Yes.

Q If this characterization is not done before the plans are prepared, what --

MS. LUCKHARDT: I believe this is beyond the scope of my --

PRESIDING MEMBER MOORE: I think that's right.

MS. LUCKHARDT: Yes.

PRESIDING MEMBER MOORE: Counsel, you're going to have to contain yourself to what was testified in direct.

MS. REYNOLDS: Yeah, that's what I'm -- I wrote these specifically in response to your questions about could you prepare site plans

without characterization work. And you asked questions about these issues.

MS. LUCKHARDT: I'm sorry, could you repeat your question so that I can --

MS. REYNOLDS: Yes.

BY MS. REYNOLDS:

Q If further site characterization was not done what approach should be taken in preparing the worker safety and health plans?

MS. LUCKHARDT: Okay, that's fine.

DR. FOX: Well, if no site characterization work is done then that means you know nothing about the potential contamination at the site, which means that you would have to be very conservative in your approach. It would basically require monitoring of everything one could reasonably expect to find and set reasonably low trigger levels.

BY MS. REYNOLDS:

Q Dr. Fox, how would metals and PAHs be detected during construction activity, or how could they be detected?

A Two ways. The applicant, Mr. Cronk's testimony, appendix A, the first mitigation measure that I talked about in my direct,

recommended that the geologist who would be the environmental professional would collect samples and send them off-site for analysis. Those samples could be analyzed for PAHs and metals.

Another way you could do it is in the case of PAHs, there is a portable instrument known as the PAS-2000, which is capable of detecting PAHs at concentrations as low as 1 ppb in ambient air. I have actually used that at some sites.

I am not aware of any method for doing real-time metal measurements with handheld instruments, so that would almost require that samples be collected in some other way and shipped off to a laboratory for analysis.

Q Dr. Fox, staff asked you a question on cross about the phase one and what standards are normally followed for phase ones. Can you render an opinion about the phase one that was prepared in this case?

A In my opinion the phase one that was prepared in this case was one of the poorer phase ones that I have looked at.

Q Can you explain why?

A Well, for one thing, it's not specific as to what files were reviewed. There is an

extensive storehouse of information on the Elk Hills oil field that was collected by Bechtel. There's a room full of investigative reports.

And it is not clear to me from reviewing the report whether all of this material was reviewed or not.

It's normal to do a pretty aggressive aerial photo review, and to list every aerial photo that one looks at. This phase one, I believe, only shows one or two very poor copies of aerial photos which are basically illegible.

I believe we filed a data request complaining about it, and got no response. I could not tell from the aerial photos that are in the phase one anything about the site, because the reproductive quality is so poor.

I'm used to seeing a list of all the aerial photos that are consulted and a discussion of each feature that one identifies on the aerial photo. There's no such discussion and no such list in this document.

Another thing I'm used to seeing in a phase one in an area with a long history of intense industrial activity like the Elk Hills oil field, is interviews with people that have

firsthand knowledge of waste disposal practices on the site. I didn't see any mention of interviews in this document.

For the record, figure 6, which is apparently an aerial photo, which I'll hold up for you, is essentially illegible. And we tried to get a clean copy and were not provided one.

HEARING OFFICER WILLIAMS: Let the record reflect that Dr. Fox is holding up the phase one?

DR. FOX: Figure 6 out of the phase one.

HEARING OFFICER WILLIAMS: Thank you.

DR. FOX: There's another similar photograph in appendix A. It's called 1983 aerial photo of the site, which I'm holding up. And, again, this is illegible. It's basically black.

So there's no way for an independent party such as CURE to make any evaluation as to potential disturbances of this site based on aerial photography without going out and collecting them ourselves, because the photographs are so poor.

PRESIDING MEMBER MOORE: Other questions on redirect?

MS. REYNOLDS: No.

PRESIDING MEMBER MOORE: Thank you. Recross? Applicant?

MS. LUCKHARDT: I have nothing further.

MS. WILLIS: Nothing further.

PRESIDING MEMBER MOORE: All right.

MS. REYNOLDS: At this time I would like to move for entry into the record Dr. Fox's testimony on waste management and worker safety impacts, and her errata. I believe the errata has already been marked.

HEARING OFFICER WILLIAMS: The errata is in. Is there any objection to the testimony?

MS. LUCKHARDT: No.

MS. WILLIS: None.

MS. LUCKHARDT: Nor to the errata.

HEARING OFFICER WILLIAMS: Admitted.

MS. REYNOLDS: I don't believe we gave an exhibit number to the testimony yet, is that correct, or --

HEARING OFFICER WILLIAMS: It will be, the testimony will be the next in order, which, I believe, is 34.

MS. REYNOLDS: Okay.

PRESIDING MEMBER MOORE: Okay, well, then we're back up to the other things to move

into the record. Staff? Applicant?

MS. LUCKHARDT: No. I have at least one short question on redirect. I don't know if you want to do that at this time, or --

PRESIDING MEMBER MOORE: Let's do it.

MS. WILLIS: Excuse me, we also have a couple rebuttal questions, as well.

MS. LUCKHARDT: I'm sorry, it is rebuttal. Staff is correct on that.

Could I just take a few minutes to get that organized?

PRESIDING MEMBER MOORE: All right. We'll go off the record for five minutes.

(A brief recess ensued.)

HEARING OFFICER WILLIAMS: And let me state that all parties who were present before the recess are again present in the hearing room.

MS. LUCKHARDT: I only have one question in rebuttal and that is to Mr. Rowley.

DIRECT EXAMINATION

BY MS. LUCKHARDT:

Q Referring to the figure 3.3-1 that we had been referring to earlier, I believe there is a pipe which Dr. Fox pointed out in our earlier discussions. I'm going to ask Mr. Rowley if he

can identify what is transported in that pipe.

A That pipe is a fire water pipe. And if you look closely at the photo you can see the monitor or water cannon attached directly to the pipe.

MS. LUCKHARDT: I have nothing further.

PRESIDING MEMBER MOORE: Yes, staff, you indicated you have --

MS. WILLIS: Actually -- I'm sorry --

PRESIDING MEMBER MOORE: -- I'm sorry, you have a question on --

MS. REYNOLDS: I just wanted to ask -- well, can I cross on that question?

PRESIDING MEMBER MOORE: Sure.

MS. REYNOLDS: Okay.

CROSS-EXAMINATION

BY MS. REYNOLDS:

Q I was wondering if Mr. Rowley could identify for us the other pipeline right next to that?

A The other pipes that are running cross-ways to that pipe?

Q There are two -- it seems to be --

A There's a shadow of a --

PRESIDING MEMBER MOORE: There's a pipe

and a shadow.

MR. ROWLEY: There's a pipe and a shadow of the pipe.

BY MS. REYNOLDS:

Q There's one that goes, I guess if we assume that north is the top of the page, there's one pipe that goes northwest and then there's one pipe that runs east-west, or a set of pipes that runs east-west.

A Right. The set of pipes that run east-west are those that penetrate the berm. They run above-grade, penetrate the berm, and then reappear above-grade.

Q Okay.

MS. REYNOLDS: Thank you.

PRESIDING MEMBER MOORE: Thank you. Does staff have --

MS. WILLIS: Yes, thank you.

DIRECT EXAMINATION

BY MS. WILLIS:

Q Mr. Ringer, the letter from Department of Toxic Substances Control already marked exhibit 33, the first sentence states: The Department of Toxic Substances Control, DTSC, has reviewed the application for certification..." and then it goes

on.

To your knowledge does the application for certification include linears?

A Yes, it does.

Q Dr. Fox discussed your statements regarding the chrome 6, chrome 3. Would you care to clarify your statements?

A Yes. I was referring to the sections of the environmental impact statement which was included in her appendix as appendix A, where it talks about the more hazardous form of chromium being chrome 6.

Because of the native conditions of the soils, actually the types of soils, it's basically reduced to the less hazardous type of chrome, chrome 3.

There has been chromium compounds used in the drilling of oil wells in that field since 1954. And this environmental impact statement quotes tests that were done showing virtually no hexavalent chromium remaining as of 1991.

So, it does not mention anything about reconversion back to chrome 6, and it's the native conditions of the soils down there that cause that.

I would also like to say that as far as remediation of the different sites and the different standards, page 3.2-8 refers to the remediation and a cleanup level of 1 ppm was negotiated with the Department of Toxic Substances Control for all 65 sites. And that's the level that they were remediated to.

Q Did Dr. Fox accurately characterize your testimony regarding the reporting requirements for contaminated soil at the courthouse EIR -- in the courthouse EIR?

A The courthouse EIR, which was appendix after her testimony, I quoted one part of that which requires the constructor to notify the environmental person upon suspected discovery of apparent contamination. It wasn't my intent to say whether or not the environmental oversight official was on site or not on site. My point is that the people doing the construction are the ones to notify the environmental official upon suspected discovery of contamination. And that's exactly the way condition waste-4 reads.

Q Thank you.

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DIRECT EXAMINATION

BY MS. WILLIS:

Q Mr. Tyler, Dr. Fox cites the SP and courthouse sites quite a bit through her testimony. Is there an important distinction between those two sites and this particular site at Elk Hills?

A Yes. The sites that she's talking about in those two studies are designated sites. They're required to be cleaned up.

In requiring that they be cleaned up we have to look, we have to do a risk assessment to determine whether the cleanup is adequate for the end use of the property.

There's been assessments. They've been determined to be contaminated to a level that DTSC is involved in cleaning them up, and that's the major distinction here.

The phase one study has already indicated that this site is not a designated contaminated site. So we wouldn't go into the risk assessment aspects that we did in the nature of these.

Q Mr. Tyler, could you please address PELs and their application?

A Yes. I understand that Dr. Fox may have some concern with regard to differences between exposure levels that are applicable to the workplace and those that are applicable to the public.

But it's critically important that we make that distinction. As I've stated earlier, the standards of protection are extremely different between the workplace exposure and public exposure.

In the public exposure criteria we have to protect all segments of the population with an adequate margin of safety. For workers we simply have to, insofar as practical, insure that they won't suffer diminished health or functional, or life expectancy.

So there's a big difference between the way we treat workers and the public. And, in fact, I'll give you a real clear example that relates directly to what we're talking about.

The exposure standard, the REL that we've been talking about for arsenic, for the public, for a cleanup site, for a risk assessment is three orders of magnitude lower than the concentration that's permitted for the workplace.

Those are huge distinctions. We need to keep in mind whether we're dealing with workers, or whether we're dealing with the public and end use of the property. And that's not being done adequately in this discussion.

MS. WILLIS: That's all we had.

HEARING OFFICER WILLIAMS: Thank you. Anything further, counsel?

MS. REYNOLDS: A couple cross.

CROSS-EXAMINATION

BY MS. REYNOLDS:

Q Mr. Ringer, you had read earlier from Dr. Fox's exhibit A, page 3.2-7. Do you have that?

MR. RINGER: Yes.

MS. REYNOLDS: On the last paragraph on page 3.2-7 can you read the first two sentences of that paragraph, starting with, hexavalent chromium?

MR. RINGER: Hexavalent chromium compounds were typically stored in bags at the well pads and were added to the drilling fluid when needed. Occasionally the contents of these bags were spilled, and these spills and/or the bags, themselves, become inadvertently buried.

MS. REYNOLDS: Okay. I have no further questions.

PRESIDING MEMBER MOORE: All right. Opportunity for rebut, CURE does, because we've offered it to everyone else.

MS. REYNOLDS: Can we have a moment?

DR. FOX: I never turn down an opportunity to rebut anything.

DIRECT EXAMINATION

BY MS. REYNOLDS:

Q Dr. Fox, do you have any rebuttal testimony?

A Give me a minute to think.

(Pause.)

DR. FOX: Mr. Tyler made the remark that normally it's only appropriate to do a risk assessment when you're dealing with a contaminated site that's undergoing cleanup, and that that would not be appropriate here.

I actually agree with that. The problem here is that we don't know if we have a contaminated site or not because the work has not been done to make that determination.

So you can't categorically say that it would be inappropriate to do a risk assessment

because we simply don't know enough.

With respect to Mr. Ringer's remarks about the section that he read out of exhibit F to my worker safety testimony dealing with the Southern Pacific environmental oversight plan, the point that Mr. Ringer states that he was trying to make was that it is the constructor who notifies the environmental professional when there's a contamination problem.

Actually, at that site, if you read all the documents in attachment F, what you will find is it was the responsibility of the environmental professional to find and identify contamination. And then notify the constructor so that the project could be shut down.

If, however, it was the constructor who identified the contamination, rather than the environmental professional, then the constructor would notify the environmental professional. And I know that, because I was involved in both drafting the plan and oversight of it.

The remarks that Mr. Ringer made about the conversion of hexavalent chromium to trivalent chromium I believe came out of a paragraph dealing with drilling muds. And what DTSC has found with

respect to drilling muds is that in the particular environment present in drilling muds, that most of the hexavalent chromium does convert over to trivalent chromium.

The remarks that I was making had to do with the bags of chromium compounds that were stored adjacent to the wells, and I don't believe that there's been any determination that that hexavalent chromium is all converted over to trivalent chromium. And, in fact, that's why there were 65-odd sites that were contaminated with hexavalent chromium in the oil field. The spillage of those bags of chemicals were actually quite a common phenomenon.

And that conversion does not necessarily take place. And as I stated, it can sometimes go the other way.

I believe that's all I have.

PRESIDING MEMBER MOORE: Thank you. Questions from staff? No. Applicant?

MS. LUCKHARDT: No questions.

PRESIDING MEMBER MOORE: No. All right, ladies and gentlemen, that brings us to the conclusion of our evidentiary hearings.

I'll turn to Major and ask if he has

cleanup items to announce. And then I'll make some final remarks.

HEARING OFFICER WILLIAMS: I would request that the parties, in their briefs, if you do have changes in the conditions or whatever that you would recommend to employ, I think we talked about it already, red-lining and cross-outs, so it will be readily apparent what you are recommending.

We've noticed the hearing on March 7th for 10:00. And --

PRESIDING MEMBER MOORE: Let's change it to 9:00 in the morning. We'll meet at 9:00 unless that conflicts, makes everybody's schedule crazy. Do you want to leave it at 10:00 if you're coming back.

MS. LUCKHARDT: Then I would request, if we are going to start at 10:00, that all participants be available to work into the evening, if necessary.

PRESIDING MEMBER MOORE: Horrible thing to ask, but it's probably practicable.

MS. REYNOLDS: Well, how? I mean we're talking about an hour here, does that mean from 5:00 to 6:00, or are we talking 5:00 to midnight?

Moving it from end of day 5:00 to midnight. I don't understand.

PRESIDING MEMBER MOORE: Well, I doubt that we're going to stay till midnight, counsel, but we've gone until 9:00 or 9:30 on some of the other hearings, and I think that that could happen. I don't intend for that to happen, let me just say that at the outset. So we'll start at 10:00.

Ten days after the receipt of today's proceedings briefs are due.

HEARING OFFICER WILLIAMS: As we've discussed, ten days after my receipt of the transcript of this proceeding I will notify the parties. And if the ten days falls on a weekend or holiday it will be moved until the following business day.

MS. REYNOLDS: Can I ask a point of clarification. Is the day that you receive the transcripts the same day that they'll be made available to the parties? I don't know how long it takes to get them on the website.

HEARING OFFICER WILLIAMS: I believe so, I believe they put them on the website the very same day.

If any party has any problem with respect to either receipt of the transcripts or the briefs, just let me know and we'll try to deal with --

PRESIDING MEMBER MOORE: Right. The intention here is not to penalize anyone. The intention is to just expedite the process as rapidly as we can.

So, I mean neither one of us have any advantage in penalizing for, you know, they didn't get them on X day. We just want to keep this moving as rapidly as we can.

Yes, ma'am.

MS. LUCKHARDT: I would ask that we close the record on waste management and worker safety.

PRESIDING MEMBER MOORE: We will close it.

All right, with that let me say that I will be going over my notes with Major and we will be seeing you again on March 7th.

HEARING OFFICER WILLIAMS: Thank you.

PRESIDING MEMBER MOORE: We're adjourned.

(Whereupon, at 1:25 p.m., the hearing was adjourned.)

CERTIFICATE OF REPORTER

I, DEBI BAKER, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Hearing; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, nor in any way interested in the outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 11th day of February, 2000.

DEBI BAKER