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COMMONWEALTH OF MASSACHUSETTS

BOARD OF REGISTRATION OF HAZARDOUS WASTE SITE CLEANUP PROFESSIONALS

Before the
OFFICE OF APPEALS AND DISPUTE RESOLUTION

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IN THE MATTER OF:

Docket No. LSP 10 AP 01

JAMES J. DECOULOS

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DAY 2 - ADJUDICATORY HEARING

Honorable Tim Jones, Hearings Officer

Massachusetts Department of Environmental Protection
One Winter Street, 2nd Floor
Boston, Massachusetts

Thursday, January 27, 2011
commencing at 9:30 a.m.

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ALSO PRESENT:
Al Wyman
Robert C. Luhrs
John Fitzgerald
Paul Wright
Theodore Bosen

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P R O C E E D I N G S

January 27, 2011

HEARINGS OFFICER: We are back on the record in the matter of James J. Decoulos, Docket No. 10 AP 01. We are here for the second day of the adjudicatory hearing, and we will get started unless there is anything else that we need to take up before then.

Ms. Read, anything else that you wanted to take up?

MS. READ: No.

HEARINGS OFFICER: Okay. Mr. Decoulos?

MR. DECOULOS: The only thing I was questioning was my testimony or my cross examination of John Fitzgerald and what I may be able to cross him on.

HEARINGS OFFICER: Why don't we wait until Mr. Fitzgerald is here and we will address that then.

MR. DECOULOS: Okay.

HEARINGS OFFICER: One thing I wanted to mention, however, is

Mr. Decoulos, I have been fairly liberal --

MR. DECOULOS: Yes.

HEARINGS OFFICER: -- in allowing you leeway in extending your time for cross examination. The expectation was that you would complete it yesterday. But again, I am being flexible, given that all the circumstances. And so you have two more witnesses to cross-examine. What are your expectations in terms of the time?

MR. DECOULOS: I expect to need about an hour with Mr. Luhrs and, as I said yesterday, about 15 or 20 minutes with Mr. Fitzgerald.

HEARINGS OFFICER: Okay.

MR. DECOULOS: And I want to thank you because I got some feedback yesterday, and particularly at the end of the day, I just want to thank you for your patience with me.

HEARINGS OFFICER: Oh, sure. Okay. So that said, why don't we get started with Mr. Luhrs. And if there is nothing else to take up, I will ask Mr. Luhrs to state your

name for the record, please.

THE WITNESS: It is Robert Charles Luhrs.

HEARINGS OFFICER: Okay. And do you promise to tell the truth, the whole truth and nothing but the truth?

THE WITNESS: I do.

HEARINGS OFFICER: Okay. Thank you. Ms. Read.

ROBERT C. LUHRS,

DIRECT EXAMINATION

BY MS. READ:

Q. Mr. Luhrs, I am handing you what has been marked as Exhibit B-4 and ask if you recognize that as the direct testimony that you filed in this matter.

(Witness perusing document.)

A. Assuming all the pages are here, this looks to be what I submitted.

Q. And do you adopt that testimony as your testimony today --

A. I do.

Q. -- in this hearing. Thank you. And I am handing you what has been marked as Exhibit

B-61, which is your rebuttal testimony, and ask if you recognize that as the testimony that you have filed.

(Witness perusing document.)

A. I do.

Q. And do you adopt it as your testimony today?

A. Yes.

MS. READ: Thank you.

HEARINGS OFFICER: Okay.

Mr. Decoulos.

MR. DECOULOS: Thank you.

CROSS EXAMINATION

BY MR. DECOULOS:

Q. Mr. Luhrs, were you here for yesterday's hearing?

A. I was.

Q. Did you hear all of the testimony?

A. I don't believe so.

Q. Okay. Did you hear all the testimony from Cynthia Baran?

A. At least I heard most of it, if not all of it.

Q. Now, your resume, which was included as an

Exhibit B-5, references you or cites that you are the Senior Manager of Remedial Programs at Raytheon.

Is that correct?

A. It is.

Q. And it mentions that you manage all aspects of the company's subsurface environmental liabilities.

Is that correct?

A. Yes.

Q. Do you get involved or manage any of the company's surface environmental liabilities?

A. Yes.

Q. And what are they?

A. We have had at least one project that I can think of where we have had -- I can think of several where we have had surface contamination on soils and/or sediments as part of one of the environmental matters I have managed.

Q. And where would that be?

A. There was a project in Wisconsin, I forget the town. I can think of actually two in

Wisconsin. We have had some surface contamination historic in Waltham, some sediment contamination in Wayland.

Q. Have you ever been involved in surface contamination issues that are subject to liability under the Clean Water Act?

A. Not that I recall. Although there were -- because of the sediment issues in Wayland, we are in a river, there was interaction with federal agencies on that project. To the extent the Clean Water Act was involved, I don't recall.

Q. Okay. And you have a background in geology, is that correct?

A. I do.

Q. And most of that training or education that you have received in geology and, it appears, hydrogeology is relating to the subsurface. Is that correct?

A. The majority of it is, yes.

Q. What minor portions of it might not be in the subsurface?

A. In my masters degree, which was environmental pollution control at Penn

State, it was an inter-disciplinary degree. During that I had masters work, I had 15 credit hours in the civil engineering department and I had a course on modeling of rivers, I had landfill courses, I had other things, a number of things that impacted the surface. And of course, geology is from the surface down depending on the terrain you are in.

Q. And in your resume you also mention that you are co-instructor for a course entitled "Downgradient Property Status Practices and Pitfalls Workshop." Is that correct?

A. Yes.

Q. Are you aware of two letters that I introduced as exhibits in this proceeding relating to downgradient property status actions that the Department was involved in?

MS. READ: I would object to the relevance of this information.

HEARINGS OFFICER: What is the relevance, Mr. Decoulos?

MR. DECOULOS: These two

downgradient property status opinions from the Department asserted that surface water is not subject to downgradient property status under Chapter 21(e).

HEARINGS OFFICER: Understood. And so I am not sure, you know, one, how that is relevant; number two, whether the Board disputes that. That -- Ms. Read?

MS. READ: We have no basis on which to dispute the content, the legal content of that letter. I just note that, as I believe I said in one of my written oppositions to Mr. Decoulos's motions, that he did not claim downgradient property status for this site. Downgradient property status is subject to several specific requirements under the MCP that are not at issue for Mr. Decoulos's sites that are in plight in this proceeding.

HEARINGS OFFICER: What is the relevance, Mr. Decoulos?

MR. DECOULOS: The LSP's who were involved believed that they were entitled to the downgradient property status

protections under Chapter 21(e), and you can only have those protections if there is oil or hazardous material subject to Chapter 21(e). And it is my contention that surface contamination can cause Chapter 21(e) liabilities downgradient.

HEARINGS OFFICER: Well, but that is not at -- none of that is at issue in this case. How is that at issue in this case?

MR. DECOULOS: The issue is that I, it was my opinion that the contamination, the gross contamination at the outfall was caused by surface oil and hazardous material releases that migrated on the surface into a catch, downgradient catch basin.

HEARINGS OFFICER: Well, I understand.

MR. DECOULOS: So that is why I believe it is relevant.

HEARINGS OFFICER: I am sorry. I am still mixing -- missing the connection.

MR. DECOULOS: Okay. I will let it

go.

HEARINGS OFFICER: Yes. I just don't see the relevancy, frankly.

MR. DECOULOS: Okay.

Q. Mr. Luhrs, in your rebuttal testimony on page four, lines two and three, you mentioned that I did not collect adequate site specific data to support the assertions that I made at the Eagle Gas site in which active recovery would not be effective.

Do you agree?

A. I see that.

Q. Are you aware that at the Eagle Gas site there was a pre -- there were two preexisting releases that were tied to that property?

A. I know there was at least one. I am not sure about two.

Q. And do you know approximately when those releases were reported to the Department?

A. My recollection is the primary gasoline issue was reported back in the '90's sometime.

Q. And did you hear the testimony yesterday from Ms. Baran regarding the Department's issuance of a Notice of Noncompliance for that release that you are referring to?
A. I -- I don't remember the particulars of the testimony, but I do remember reference to it.
MS. READ: I would just like to note an objection to this line of questioning as well. I don't think that a NON issued in 1997 has bearing on Mr. Decoulos's obligations at this site in 2003 to 2005.
HEARINGS OFFICER: Yes. How are you going to tie that into --
MR. DECOULOS: Next question.
HEARINGS OFFICER: Okay. Go ahead.
Q. Mr. Luhrs, do you believe that the LSP's who were responsible for assessing, containing and addressing those oil and hazardous material releases from that release collected any site specific subsurface or surface data?
MS. READ: Again, I would object.

A. Well, without referring to the documents, I am out on the edge here. But I do recall there were some older wells installed in the property and those wells would have included subsurface data.

Q. Are you aware that I provided some of that data to the Department in the first IRA submission that I filed which was --

HEARINGS OFFICER: For the record, that is I-R-A when Mr. Decoulos says IRA.

THE WITNESS: Was that the March --

MR. DECOULOS: March of '03, which is Exhibit B-16.

THE WITNESS: Lynn, do you have a copy of that real quickly?

MS. READ: Mm-hmm.

A. Because I believe you if you are stating that you did, I don't recall which data particularly you included from the previous investigations. I do see there is some surface or there is some water table measurements on a BP4. There is a Well KE3's noted, KE3. I presume there may be some reference to some other data like the

one with that figure but --

Q. Would you agree that there is also a figure that I used from that preexisting release?

A. Figure 3 appears to be from Mr. Kaegael's company.

Q. Do you see a storm water collection system in that figure?

MS. READ: Again, I would object. The sufficiency or insufficiency of that figure is not relevant to Mr. Decoulos's obligations, but I --

HEARINGS OFFICER: Well, the line of questioning that he is pursuing is the extent to which he gathered data based upon prior assessments, and I think that is perfectly appropriate for inquiry.

A. Well, I see no reference to the storm drain that is shown in later diagrams.

Q. Do you think that it is fair for me to evaluate and consider and use prior data that has been collected from the site by other LSP's?

A. I think it is an obligation of LSP's to familiarize themselves with information

available on a site and to consider it in their own work, yes.

Q. But can I use the data?

A. I think you have to consider it and you have to determine whether the data is valid and whether it is germane to the issue that you are working on.

Q. Is that a yes or a no?

HEARINGS OFFICER: Well, he answered the question.

Q. Do you, in making your remark on page four that I did not collect adequate site specific data to support my assertions, do you think that it was reasonable for me to consider previous septic system design that I included in the Phase I report dated April 30, 2004, which is Exhibit B-30?

A. I believe that all data should be looked at and considered. As to whether that data in itself was sufficient to determine subsurface hydrogeologic characteristics, I would question that because septic designs measure percolation above the water table or at the water table and they really don't

talk about the hydrogeology of a site below the water table. So I think it -- I think it is partially useful. I don't think it is everything that might be needed.

Q. But so you agree that it might be worth evaluating and using that in making some determinations for me to continue my LSP work?

A. I think you should look at that and you should consider that data and use that to the best that you can. Again, whether it is sufficient on its own, I would question that that is.

Q. And are you familiar with what slow or fast percolation rates are in a septic system design?

A. I have been exposed to perc tests. I am -- I have never done one. I am not a civil engineer, nor do I design septic systems so that is really outside my area of expertise.

Q. Are you aware that the 30 minute per inch percolation rate that the Carver Board of Health approved for this septic system

design at the Eagle Gas site is a slow, a very slow percolation rate?

A. I have no reference point for that.

Q. You mentioned that I did not collect adequate site specific data.

Are you aware of this Phase I report that I filed in April 2004?

A. I am.

Q. Are you aware that there are boring logs that were included in this report from appendix, in Appendix K?

A. I believe there were boring logs for DC A through F, and those were installed, my recollection is that those borings were installed about nine months earlier.

Q. Do you want to take a look at the logs and just confirm your testimony?

(Witness perusing document.)

HEARINGS OFFICER: For the record, what exhibit did you hand Mr. Luhrs?

MR. DECOULOS: I just handed Mr. Luhrs Exhibit B-30, which is the original that I filed with the Department.

HEARINGS OFFICER: Okay. And what

part of B-30 are you asking him to --

MR. DECOULOS: Appendix K.

MS. READ: I would just like to clarify for the record this is Mr. Decoulos's copy of what was filed with the Department. It is not the Department's copy as it received it.

A. It looks -- I did not recall there being logs for DC-G or DC-H as well, but they appear to be here as well. Otherwise, I think my earlier testimony was accurate.

Q. And do you recall that I conducted hydrogeologic permeability tests at the Eagle Gas site that were included in my IRA status report in 2005?

MS. READ: Which IRA status report in 2005?

MR. DECOULOS: Excuse me?

MS. READ: Which of the status reports in 2005?

THE WITNESS: Would that be in April?

MR. DECOULOS: May 6, 2005. It is Exhibit B-49.

A. I, I recall seeing some hydrologic test data in 2005. I would need to look at the report to refresh my memory on exactly what it was.
Q. If I put it up on the screen, would that be helpful for you?
A. Depending on the question, I may or may not need the data. I am not sure. I think that is one of the reasons I don't recall real clearly is, if you would look at the table of contents on this report, there is no section that delineates a discussion on your hydrologic testing for this site.
Q. Can you tell me what Section 4.0 is?
A. Oh, I am sorry. Yes. 4.0, page 15. Okay.
Q. And did you have a chance to review this hydrologic conductivity testing? Have you had a chance to review this narrative in Section 4.0 which described the hydrologic conductivity testing and the accompanying appendices that it referenced?
A. I -- I did review this. I have to be honest, my review of this section of the work was not as thorough as the earlier

work you performed at the Eagle Gas site.
Q. Would you agree that Appendix E presents the work and the data that accompanied and allowed me to make calculations and evaluations of the soil permeability?
A. With -- unless you want me to take the time to look at this, I would not disagree that there is hydro testing data here and that you did use that to make calculations. I am not in a position to testify as to whether those calculations are accurate, thorough or complete.
Q. Have you had a chance to review the permeability calculations by either ECS or CEA?
A. I didn't do any review of the work by ECS or CEA.
Q. Have you had a chance to review the permeability calculations that either ECS or CEA determined?
A. No.
Q. So when you make a statement like you did in Exhibit B-61 that I did not collect adequate site specific data, and I show you

these boring logs, perc tests, prior work that other LSP's had conducted in the earlier releases --

A. Did they do hydro testing?

Q. No. And that is something that I would like to ask you is given that the Department requested that that potentially responsible party should immediately determine whether that there is substantial release migration in the Notice of Audit Findings and Notice of Noncompliance in Exhibit RR-7, and that the Department also demanded that that PRP prepare and submit a Tier I permit application, don't you think that it was appropriate for that LSP to conduct hydrologic conductivity testing between 1997 and 2003?

A. Because my background is hydrogeology, I feel that that data is good to have on every site. It is not always done on all sites and different LSP's have reasons why they do or don't do it. I think the one thing that was, that may set the Eagle site that we are talking about here in this

hearing today apart is the thick accumulation of free-phase product which was identified in BP 5-RR, you know, to five, six feet which is probably not an accurate measurement, but I believe clearly there was substantial material there. The importance of hydro testing and the close proximity to the storm drain, I think it is important here.

Q. But that NAPL that was part of the release that you just referred to, RTN 4-178, 17582, did that present a significant risk to human health in the environment?

A. I have not seen any real evidence of a significant risk to human health. However, the discharge of similar product at the outfall impacting the sediments of the estuary stream, if you will, forget estuary, I didn't really mean that, that is a term that is used primarily for salt water, I think there was a significant risk to the environment on this case.

Q. But do you believe that the NAPL that was identified in the ground constituted or may

have led to a condition known as a Critical Exposure Pathway, a CEP?

A. I think, I think the NAPL definitely would have, would have gone to an SRM. I am not sure whether --

Q. That is Substantial Release Migration?

A. Substantial Release Migration, correct. The CEP, I don't necessarily think so.

Q. Are you aware that the Department recognized that there was a CEP related to the earlier release, 17582?

A. I recall that being discussed yesterday and I probably read that earlier as well.

Q. And given the fact, given the Department's recognition of a CEP for that earlier release, don't you think that the LSP in any of the other work that was conducted prior to my involvement should have conducted hydrologic conductivity testing?

A. Well, if you are asking me to opine on the quality of work that Mr. Kaegael does, I am sure you are aware that Mr. Kaegael no longer has an LSP license and I was actually part of the investigation of his

work. I did not review his work in this matter and I am not in a position to opine on the work here.

Q. And do you know if there was another LSP involved in that earlier release?

A. There was a subsequent LSP, I believe. His name started with a B or something. I recall reading that.

Q. And do you know if there was a third LSP involved in that prior release?

A. I do not. I -- I -- my focus throughout the investigation of this matter was on the work completed by you.

Q. And don't -- do you believe that -- well, I already asked the question. Strike that.

Now, on page five of your testimony you discuss how the use of PID, which stands for Photo Ionization Detector, how the use of those PID readings was not logical.

Right on line one on page five, do you see that?

(Witness perusing document.)

A. In my opinion, it wasn't logical to me at

least, that is for sure.
Q. Why not?
A. As we discussed during the field visit and during some of our interview sessions during the investigation, it is my opinion when you look at the PID data showing no readings at all on the most upgradient side of the property and then starting to pick up PID's at 0.5 PPM adjacent to the property --
Q. By the way, PPM, excuse me, stands for parts per million?
A. It does. And then significantly higher concentrations as you go downgradient, I believe it was 27 PPM in the manhole downgradient and 24 PPM adjacent to the drainage manhole, and then continued impacts all the way down clearly showed that there was product entering the storm drain system somewhere along the route in between the most upgradient where there was zero and where there was 27 PPM in front of, I believe, the address is 133, the house. So I -- and then taking and reading

your reports and in our discussions, you stated and indicated that that data was clear indication that contamination was entering at the catch basin downgradient.

And as we discussed, my opinion is it is an indication that product is entering somewhere in between the two because the impact is already at the downgradient basin and it did not necessarily have anything to do with the catch basin per se.

Q. So it is your opinion that CB-4, that we identified yesterday, that there was some entry of NAPL that I was responsible for between CB-4 and DMH-2, somewhere along this 15-inch reinforced concrete pipe that runs --

HEARINGS OFFICER: Mr. Decoulos, for the record will you identify what you are referring to, what exhibit?

MR. DECOULOS: Exhibit B-30, which is the Phase I report I filed in April of 2004.

HEARINGS OFFICER: And what part of

Exhibit B-30 are you referring to?

MR. DECOULOS: Appendix B.

HEARINGS OFFICER: And this is Site Plan Sheet 1, is that correct?

MR. DECOULOS: Yes.

Q. So my question, again, is you believe that there may have been some entry point from DMH-2 which was identified yesterday on Chalk 1 which I am pointing to on Exhibit B-30, to Catch Basin 3, I am sorry, Batch Basin 4, from yesterday's Chalk 1.

Is that correct?

A. I don't think that is quite what I said. I think what I had just said was that someplace between the upgradient clean --

Q. Where do you consider upgradient clean?

A. Well, it would be further to the left. Up there we had zeroes so, to me, it is clean.

Q. Okay.

HEARINGS OFFICER: Identify for the record what you are referring to.

MR. DECOULOS: Mr. Luhrs is referring to DMH-1.

A. As you go downgradient, what we see at

DMH-2, we are seeing some indication of petroleum impacts, and that is based solely on vapor sampling.

There is no other data to say whether we had dissolved concentrations or there is some discrepancy in the record as to whether there was a sheen observed. The Department states that there was and you state that there wasn't, so I am not sure what the case is there.

What I am saying is someplace in the storm drain run between DMH-1 and DMH's at 3 in front of 133 --

Q. Yes.

A. Okay. Someplace in that run, which is probably 200 feet long, there is product likely to be entering the storm drain which then goes down and is discharging to the creek.

Now, we know that on that one particular date, and that is the only date that we have any data for, there is this discrepancy as to whether there was a sheen at DMH-2. As a hydrogeologist --

Q. I am sorry. What data are you referring to?
A. The PID data, and visual discrepancy I believe the Department states that they saw sheen there and your testimony states that there was none.
Q. But you saw the photographs, didn't you?
A. I did see the photograph. And frankly, there was enough reflection from the sky that, if there was a sheen there, that photograph did not confirm or deny it to me so I don't want to try to draw an opinion based on a photograph that has been used.

But I think the point that I would like to make, Mr. Decoulos, is, as an hydrogeologist, I think that the point at which NAPL would enter that storm drain changes over time. And that change is related to fluctuations in the water table; so as the water table is higher, that entry point along that drain line would be further to the left or further upgradient because more of the pipe would be in contact with the water table. As the water

table drops, the point at which the water table is in contact with the storm drain would be further to the south or downgradient. So I think the entry point could change over time and probably does.

HEARINGS OFFICER: I have a question for you, Mr. Luhrs. Mr. Decoulos, could you go back to the site plan you had up there previously?

Is it possible if the -- and if you are not comfortable answering this question, feel free to tell me because I don't want you to guess. But in your opinion, is it possible if the NAPL, for example, is entering the storm drain at some point below DMH-2 --

THE WITNESS: Mm-hmm.

HEARINGS OFFICER: Is it possible that -- I am trying to figure out how you had some positive PID readings at DMH-2 if, let's assume just for purposes of assuming, that the NAPL entered below or to the south of DMH-2, is it possible that the vapors could travel up and that's why there was

the positive DMH, positive PID readings there?

THE WITNESS: That is possible. You don't know really which way the water is flowing up the pipe. That pipe is not full of water.

The other thing is vapors often tend to rise, and the pipe is slightly tilted to the north so you may have some vapors migrating up. But I think the other possibility is you very easily could have had some just dissolved contamination entering, causing those vapors, and that NAPL was actually coming in downgradient. So there are multiple reasons but --

HEARINGS OFFICER: Wait, I didn't follow you there. Go ahead.

THE WITNESS: Okay. Well, if I go back, you might have dissolved concentrations of petroleum products, whether it be the gasoline from the earlier release or the diesel, that could be getting into that pipe and causing those vapors as well. So there are multiple

explanations.

The point that I key on here is you are seeing indications immediately in front of where the tanks are, and you are not seeing it across the street, you are not seeing it all the way upgradient. To me, we are close to where things are occurring but not necessarily at that point.

HEARINGS OFFICER: Okay. Thank you. And also, just for purposes of clarity, could you, if you know, Mr. Luhrs, and perhaps, Mr. Decoulos, when you testify you can do this for me, I don't want you to do it now, Mr. Decoulos, because you are not testifying. But Mr. Luhrs, if you know, could you clarify for me, is that a residence at 133?

THE WITNESS: I believe it is, yes.

HEARINGS OFFICER: And at 132, is that a residence as well?

THE WITNESS: It is.

HEARINGS OFFICER: And 131 has a

residence on the second floor?

THE WITNESS: There is a residence in the building. I believe it is on the second floor.

HEARINGS OFFICER: And 134 is a residence?

THE WITNESS: Yes. It is all residential, with the exception of the gas station, from this point downstream to the outfall.

HEARINGS OFFICER: Okay. Thank you. Go ahead, Mr. Decoulos.

Q. Mr. Luhrs, the Phase I report that you have in front of you, Exhibit B-30 --

A. I am sorry. Which exhibit?

Q. That report, Exhibit B-30 --

A. Okay.

Q. -- which is the Phase I report --

A. Okay, yes.

Q. Can you go to the groundwater analytical table in the front portion of that report?

A. Yes. Give me a second. Table 3.

Q. Yes.

A. I have it.

Q. Can you tell me what was found at DCW-1?
A. Well, there was some heavier aromatic hydrocarbons, 150 PPB, which is parts per billion. There was also DCW-1, on six of '03, had naphthalene, had two metal naphthalene, both of which are diesel components, and a VPH fraction. There was 5,410 PPB of C9/C10 aromatics. There was 446 PPB of naphthalene. There was also MTBE, Benzene Toluene and Ethyl Benzene. And if you want me to read those results to you, I can.
Q. No, that's okay. I just would like, with your quick review of that data, for you to summarize whether you think that might be related to gasoline from the earlier release or diesel subject to the release I was responsible for.
A. The fact that there is MTBE and Benzene suggests some gasoline components are here for sure. And the hydrocarbon fractions would suggest probably some diesel as well, particularly because of the naphthalene and metal, two metal naphthalene.

Q. But can't you admit that the gasoline constituents that are in that summary are significantly higher than what the diesel constituents might be?
A. How do you want to talk about higher? Are we talking about just raw numbers?
Q. No. Significant by orders of magnitude.
A. But I mean are we talking raw numbers or percent solubility or --
Q. We are talking standards or reportable concentrations that might be in the MCP.
A. What I see here is that there are concentrations that are suggestive of some significant dissolved gasoline components are present in that well, but that I would not downplay the other results that suggest that there is diesel in that well as well. And just so that this is not taken out of context, this is also the well that, shortly thereafter or the next time it was sampled which was a year later, had multi feet of free-phased NAPL in it. So and that NAPL was identified as diesel product, not gasoline so --

Q. But that free-phase product that was found in DCW-1 wasn't in that well when the significant outfall contamination was identified on May 16, 2003, is it?
A. I don't know the date that that well was installed. Was it installed on May 16th? I thought it was installed after that date.
Q. It was. But my point here is, is that there were significant contamination at this outfall as Photographs 20 --
A. Absolutely.
Q. -- through 22 show.
A. Absolutely. I agree with you on that point.
Q. And if the diesel was impacting the diesel release that I was responsible for, which the source of the release was a remote fill pipe, if that diesel caused this gross contamination at the outfall as shown in Photographs 20 through 23, wouldn't there have been NAPL in DCW-1 in June of 2003?
A. Not necessarily.
Q. Well, how do you think the diesel from that release could have gotten to the outfall?

A. First of all, based on my review of the records, we don't know the exact location where the release occurred.

THE WITNESS: Al, would you get me a glass of water, please. Thank you.

HEARINGS OFFICER: Excuse me. Would anybody else like some water? Ms. Read?

MS. READ: I am okay. Thank you.

HEARINGS OFFICER: Mr. Decoulos?

MR. DECOULOS: No, thank you.

HEARINGS OFFICER: Carol? No, okay.

A. So not knowing where the release occurred, it is pretty hard to start saying where the preference pathway that allowed product to get into the storm drain was occurring, but that is the whole reason for the need for an investigation.

Q. But yesterday, during Ms. Baran's testimony, didn't you hear that the release was more than likely between the 4,000 gallon diesel UST and the remote fill pipe, which is located west of DCW-2 or DMH-2?

A. I heard the discussion. It would be helpful if the figure illustrated the location of where the fill occurred and where the pipe actually entered the tank. It probably wasn't at the end. If you look at that figure, that remote fill line ends at the tank. And in reality, the fill lines fill from somewhere near the surface so I don't know if that's from the southern end where it was actually filled. And I don't know where the remote fill cap bucket was in the area of the three 5,000 gallon UST's. Somewhere in that area.

Q. But you saw the extent of NAPL on Exhibit B-41, didn't you?

A. Which exhibit is that, sir?

Q. B-41.

A. I saw that --

HEARINGS OFFICER: Which part of B-41? Is this a part of it?

MR. DECOULOS: Figure 1.

HEARINGS OFFICER: Figure 1 of B-41?

MR. DECOULOS: Yes.

A. I have seen this figure. And your representation of where NAPL was, again, it is -- I don't know that this accurately depicts where NAPL was. This is your representation of where it was.
Q. But did you hear the testimony yesterday from Ms. Baran regarding where ECS and CEA determined that NAPL --
A. I did.
Q. And is it your opinion that my LNAPL, the approximate LNAPL delineation that I showed on Exhibit B-41 is substantially different than what ECS or CEA identified?
A. I recall discussions how the other interpretation showed LNAPL -- I am sorry -- NAPL further to the west, underneath the building, and south to the edge of the tanks at least, which would be different than this. I don't know whether their interpretation is accurate. As I said, I never reviewed their work from an MCP compliance or thoroughness standpoint.
Q. Okay. So the LNAPL, and by the way, the L, excuse me, stands for light

non-aqueous-phase liquid. The LNAPL, if we are to take what I identified, CEA or ECS, if we were to take a worst-case scenario of where that LNAPL ended up, you mentioned that to the south, wouldn't you agree that it would have not been any further to the south of DCW-2 or DMH-2?

A. Well, I think that, to be accurate, you would have to say it was not seen in the wells which are further south than that, which are MWA and KIE-5. So someplace north of that, there are very few points north of that to kind of reference where that line actually would be.

Q. But --

HEARINGS OFFICER: Very few points north of what?

THE WITNESS: Of -- I am sorry. Can I have your pointer for a second?

MR. DECOULOS: Sure.

THE WITNESS: That might be helpful.

HEARINGS OFFICER: And Mr. Decoulos, could you go back to expand

that area? And this is Figure 1 of B-30.

MR. DECOULOS: B-30, upper left hand corner, if you can just see it.

THE WITNESS: And I think we are better off with a blowup if you want to talk about the extent of NAPL.

HEARINGS OFFICER: Yes. That is what I wanted to do.

THE WITNESS: Okay. So what I was saying is on this figure you presented to me, which is Exhibit B-41, Figure 1, you show NAPL approximately in this area extending from the gas station and out to the road in a bit of an oval shape like this.

The later reports talk about NAPL coming underneath the building, and we really don't know how far to the west because there are no data points here, and coming down to maybe the northern edge of the tanks. But all I can say is these are the nearest sampling points and, therefore, all we could say is --

HEARINGS OFFICER: Could you

identify those for the record, please.

THE WITNESS: Those, those two points that I am pointing at are KEI-5 and MWA. So all we can say is if NAPL never was in those, they would represent the southern extent or someplace north of that. The other report we saw yesterday had the line on top of the tanks. There are no sample points to define that line so I can't say how accurate it is.

HEARINGS OFFICER: But is it true that NAPL was never found in those southern most sample points?

THE WITNESS: That is my recollection. I would -- I can't say for certain without going back through the data, but I do not recall any reference to NAPL in those two points.

HEARINGS OFFICER: Okay. Thank you.

Q. So Mr. Luhrs, you are saying that the work that ECS and CEA did not evaluate the subsurface conditions even further through additional sampling points?

A. I never said that. I said I did not -- that we know from the figure that you put up yesterday that there were --

Q. I am sorry. Who do you think that was from?

A. I believe that was an ECS report, and it didn't even matter which one. There were more wells and there were ECS designations on them, so I would say they definitely did more evaluation. All I am saying is that without -- I would have some serious, well, not serious questions, but I can't say that either depiction accurately reflected where NAPL was because there are some places that a number of people might consider data gaps. Whether it was pertinent to the NAPL recovery is a whole other question. I thought we were talking about extent.

Q. Okay. That is what we are, we are talking about the extent of the NAPL.

A. Right.

Q. Now, in Exhibit B-53, which we saw yesterday and which I am going to bring back up on the display, this is the Phase

II report prepared by ECS dated November 10, 2006. And rather than showing the extent of the NAPL, what ECS did here was show the disposal site boundary. And in that report, they had a sampling point inside the building, which is tough to see, but I think another report by CEA might be a little clearer. But they had shown that there was a sampling point inside the building, and that is how they were able to establish what the extent of the disposal site boundary might be. Could you agree with that?

A. Not without knowing what that point is, the depth that was installed, whether it is an air sample, a soil sample, a water sample, etcetera. Again, I never reviewed this work so all of this, I presume, would have been done after you were no longer the LSP of record for this site.

Q. That is correct.

A. I would guess. Okay.

Q. You mentioned that there was only one PID screening that I conducted.

A. I only recall -- I only recall one figure or one set of results on any of the figures. And that showed the zero upgradient, the point five, and then the 27 downgradient and then subsequent numbers. And I don't recall any tables in any of the reports with additional data. So I am only aware of one at this moment. And that was, that was actually the one that was talked about yesterday that was done with the Department's PID during that one spill response date. It was May 16th, I believe.

Q. May 16, 2003, is that correct?

A. That sounds right.

Q. So do you remember --

HEARINGS OFFICER: Mr. Decoulos, I need to interrupt you for a moment. Someone else has entered the room. Sir, you are --

MR. DOHERTY: Richard Doherty.

MR. DECOULOS: He is my witness.

HEARINGS OFFICER: Mr. Doherty, I am going to hand you a sign-in sheet. If you could sign in, please.

MR. DOHERTY: Thank you.

Q. Mr. Luhrs, were you a member of the complaint review team that was involved in this investigation against me?

A. I was or I am, I guess.

Q. Do you remember meeting on December 12, 2007, at your office at Raytheon in Waltham?

A. I remember multiple meetings. I don't remember any of the dates.

Q. Do you remember that on January 30, 2008, I provided a letter to Ms. Read for the complaint review team which provided data that the CRT or the complaint review team requested?

A. There were multiple submittals, Mr. Decoulos. I would have to see the document you are referring to see if I remember that particular one.

Q. I will put it up on the screen right now. So this is Exhibit RR-40, which was a letter together with additional information that the CRT was seeking.

Would you agree with that?

(Witness perusing document.)

A. I -- from here I can see it is a letter to Ms. Read.

MS. READ: Excuse my notes.

HEARINGS OFFICER: Which exhibit is this, Mr. Decoulos?

MR. DECOULOS: RR-40.

HEARINGS OFFICER: Thank you.

THE WITNESS: It does seem to be additional information submittal, yes.

Q. And would you agree that there was additional information I gave you that you requested for in Section C on page two regarding storm system, storm drain system measurements?

(Witness perusing document.)

A. There is reference in this Section C to some survey work and a figure being submitted.

Q. You know, I want to apologize. I was actually directing you to Section A, the storm drain system inspections for Eagle.

A. Okay.

Q. So in that particular section, would you

agree that I provided you with field notes of work that I or my associates collected at the Eagle site which was --

A. I see reference to field notes for five different dates here and I do recall looking at this.

MS. READ: Maybe if you can look at the page that is on the screen.

THE WITNESS: Okay. I have the field notes in front of me if you have a question.

Q. Yes. Could you direct your attention to field notes from September 4, 2003.

A. Okay. September 4, 2003, you said?

Q. Yes.

A. Okay.

Q. Would you agree that these are additional PID readings that I took beyond May 16, 2003?

A. Are these your field notes? I don't know who took these notes or who took the data attached to these notes. I do not recall any data ever submitted to the Department summarizing investigations of PID results

other than the May 16th that have already been discussed in this hearing.

Q. But I am talking about this letter that I sent to the CRT, when you had asked for additional information.

Wouldn't you agree that this is what the CRT asked for and this is what I gave them?

A. This is in part what the CRT asked for, yes.

Q. And wouldn't you agree that your statement that the only PID measurements that were collected at the site on May 16, 2003, is inaccurate?

A. I would have to say that, based on these notes, it appears I made a mistake in that testimony.

Q. Now, getting back to the photographs, the complaint review team -- I asked -- do you remember me asking the complaint review team to actually come out and conduct a site visit at Eagle Gas site?

A. I recall us doing a site visit. Whether you asked or we offered, I don't recall how

it came to be. But I remember there was one.

Q. And do you remember visiting the Eagle Gas site with me?

A. Yes, I do.

Q. And do you remember what date that was?

A. No, I don't recall the date at all. It was probably '09, wasn't it?

Q. Would you agree that Photographs 155 through 162 represent conditions when you and I were out at the Eagle Gas site on June 26, 2008?

A. That -- I recognize me in at least that one picture, so I believe you are probably accurate. I can't say for sure that 155 was that same date but it could well be.

HEARINGS OFFICER: Could you go through those photographs more slowly, Mr. Decoulos.

MR. DECOULOS: I am sorry. I got reviewed yesterday on that too, Mr. Jones. I am sorry.

Q. I am going to start with Photograph 155. Do you want me to just explain these for

the record?

HEARINGS OFFICER: No, no, I don't. Just go through them more slowly, please. I just want --

MR. DECOULOS: Tell me when you are ready for the next one.

HEARINGS OFFICER: Go ahead. Go ahead. Okay. Okay. Go ahead. Okay. All right. How many are there, Mr. Decoulos?

MR. DECOULOS: They end at 162. I forget.

HEARINGS OFFICER: Okay. Okay. I am all set. Thank you.

Q. Do you recall what I was trying to show you on June 26, 2008?

A. Well, actually, we talked about a number of things and you tried to make several points. But one of the primary points, as I recall it, was in turning on the hose in the area of the island to show that water at, surface water, storm water, what have you, in the island area would flow down the street and into Catch Basin whatever the number is, 3, 4, in front of 133.

Q. Would you agree that if I point to CB-4 here in front of 133 Main Street, that that was the correct catch basin?
A. I would.
Q. And so what does -- what happens with surface water when it spills on the concrete pad at the Eagle Gas site?
A. Well, I think two things probably would occur. Depending on the volume, you would get flow off the pad towards the road. And if it did that and there was sufficient volume, it would take the path you see here heading to the south down the side of the road.
Q. And what photograph are we looking at?
A. We are looking currently at Photograph 157 from your photo log, assuming this is online right now.
Q. No, we are not online. But what I did was I downloaded these photos from the Picasso web album.
A. Oh.
Q. So what we are looking at is batched versions of those photos.

A. So I am just assuming that it is the same one. I am saying, without doing that or confirming it, that would be Photograph 157.

HEARINGS OFFICER: I have a question. So this was during a site visit with the Board and you were doing some sort of demonstration, I think, Mr. Decoulos, about your, your belief or you wanted to demonstrate how the water flowed on the surface down in the catch basin. My question is, is that a large puddle that we are looking at there?

THE WITNESS: It is.

HEARINGS OFFICER: And does the water puddle there and stay there, obviously, until there is enough to continue to drain down to the catch basin? Is that correct?

THE WITNESS: I believe that is correct, yes.

HEARINGS OFFICER: Okay. All right. Thank you.

Q. Now, Mr. Luhrs, in Photograph 157, do you

see a drainage manhole?

A. I see a manhole cover. I presume that is DMH-2.

Q. Well, is that your testimony?

A. No. All of my testimony is that that is a manhole cover. I presume -- I don't know for certain that that even is the storm drain without looking at it closely and popping it open.

Q. If I told you that the motor vehicle inspection sign that is on a utility pole was Utility Pole No. 149 and that there was a sign that is also shown -- I am sorry. I will strike the 149. It is actually 148. And that there is also a sign that is shown in this photograph, would that help you locate and identify whether that is DMH-2 or not?

A. It would help. I mean it would be nice to see more of the gas station or road to make sure there aren't other structures. I can tell you what I think it might be. Again, I can't confirm it without having better reference points. I believe it would

likely be the DMH depicted on any of your figures located east or immediately adjacent to the three 5,000 gallon gasoline tanks. The one that would be near DW-2, that is what I would think that manhole is in this picture.

Q. Okay. And if we go back to the Phase I site plan.

A. The Phase I is exhibit -- I don't have it here. It is not on this copy but --

Q. That's okay. I will get it up on the screen.

A. The site plan.

HEARINGS OFFICER: Mr. Decoulos, could you go back to that last photograph you had?

MR. DECOULOS: Sure.

HEARINGS OFFICER: What number is that? That is still 157?

MR. DECOULOS: 157.

HEARINGS OFFICER: It shows a different perspective. Oh, I see. Okay. Thank you.

THE WITNESS: There are multiple

figures in the Phase I so you have to direct me to where you want to go, sir.

Q. Yes. We are going to go to this site plan that was shown in Appendix B, which is that large site plan. And I am going to bring it up on the screen again. You can take it out of the sleeve.

A. I would like to. I just want to make sure I've got the right appendix.

Q. So you just mentioned the three underground storage tanks that stored gasoline to the west of that drain manhole. Is that correct?

A. Yes.

Q. And that is the same drain manhole that had a reading that we were talking about earlier of 0.5 five PPM. Is that correct?

A. I believe it is.

Q. Given that there were significant gasoline constituents in Monitoring Well DCW-1, and the fact that there is three 5,000 gallon underground storage tanks storing a total capacity of 15,000 gallons of gasoline, don't you think that the 0.5 PPM reading

from the PID in DMH No. 2 could have been influenced by that gasoline storage?

A. I think my direct testimony, or not my direct testimony, but the testimony that we had earlier this morning where we discussed that, I said that the 0.5 was an indication of petroleum hydrocarbons entering the storm drain possibly in dissolved form and it could be either from the gas or the diesel.

Q. Are you aware that the Department has undertaken significant efforts to develop a vapor intrusion policy?

A. Are you talking about the one that just came out for public review about two weeks ago or three weeks ago?

Q. Yes.

A. I am aware of that.

Q. And isn't it true that vapors can easily emit through soil and enter into indoor air spaces?

A. It is.

Q. Do you think that those same vapors could enter storm water control structures?

A. Absolutely.
Q. Now, when you said in your rebuttal testimony of Exhibit B-61 on page five that the PID readings were not logical, and you went on to state that there were many reasons why those initial response might be low --
A. I think you misrepresented my direct testimony or this rebuttal testimony. My testimony is not that the readings are not logical. It specifically says, "His use of the PID readings is not logical."

I was talking about the way those data were taken by you and interpreted to say there was no impact in front of the gas station, it was only downgradient.

The PID readings, to me, clearly show some impact from something, and it would be awful nice to have further evaluation to determine what that is, maybe a vapor sample run with analytical technique that would tell us whether it is diesel or gasoline. There are a number of things that one could do. A water sample

from that location, whatever.

Your use of those readings just to simply say there is no impact and therefore it has to be to this, this alleged surface flow of NAPL into the storm drain causing the discharge is what I didn't understand and what I was referring to in this testimony.

Q. Are you aware that Ms. Baran testified that the use of PID readings and visual observations of the storm water control structures were appropriate ways to determine whether or not the --

MS. READ: Objection. That was not her testimony. I believe she --

HEARINGS OFFICER: Sustained, sustained.

Q. On Exhibit B-1, which is Ms. Baran's testimony, at page 18, lines 11 through 13, Ms. Baran's --

A. You will have to give me a second. I have never read her testimony so let me catch up to you here.

MS. READ: I am sorry. You said

page 18?

MR. DECOULOS: Yes. Page 18, please.

THE WITNESS: Okay.

Q. Now, what I would like for you to do is just to read her first paragraph and her answer.

HEARINGS OFFICER: I am going to actually stop here for a moment. I was just informed that Mr. Fitzgerald is here and he has been here for approximately 20 minutes. And let me ask you, Mr. Decoulos, this. How much longer do you have with Mr. Luhrs? And I am not asking you that to rush you. I just am trying to budget how to put on the witnesses here and I don't want to keep Mr. Fitzgerald waiting any longer.

MR. DECOULOS: If we could take a five-minute break, I would be prepared to stop Mr. Luhrs' cross right now and go right to Mr. Fitzgerald, if that would work.

HEARINGS OFFICER: Yes, that is

fine. Do we need a five-minute break?

MR. DECOULOS: I am going to need a few minutes to switch gears.

HEARINGS OFFICER: Okay. How much longer do you have with Mr. Luhrs?

MR. DECOULOS: It may be 30 minutes.

HEARINGS OFFICER: Okay. All right. That is fine. And this testimony is very helpful for me also to get a better understanding of this case. So for my own personal purposes, I frankly don't want to rush it. So why don't we at this point take a five-minute break. We will continue Mr. Luhrs' testimony later after the completion of Mr. Fitzgerald's testimony. We will bring Mr. Fitzgerald in after the five-minute break. Is that okay with you, Ms. Read?

MS. READ: That's fine, yes. Thank you.

HEARINGS OFFICER: Okay. Thank you.

MR. DECOULOS: All right. Thank

you.

(Brief recess.)

HEARINGS OFFICER: Back on the record, please, after a short break. And Mr. Fitzgerald is here so why don't we begin.

Mr. Fitzgerald, if you could state your name for the record, please.

THE WITNESS: John Fitzgerald.

HEARINGS OFFICER: And you promise to tell the truth, the whole truth and nothing but the truth?

THE WITNESS: I do.

HEARINGS OFFICER: Okay. Thank you. Ms. Read.

MS. READ: Thank you.

HEARINGS OFFICER: Mr. Fitzgerald, by the way, I want to thank you for coming back today. I appreciate it.

THE WITNESS: No problem.

HEARINGS OFFICER: I understand we are all very busy and it was quite a trip for you to come back here, so I do appreciate it.

JOHN FITZGERALD

DIRECT EXAMINATION

BY MS. READ:

Q. Mr. Fitzgerald, I am handing you what has been marked as Exhibit B-8 and ask if you recognize it as direct testimony that you filed in this action.

A. Yes, it is.

Q. And do you adopt it for purposes of today's hearing?

A. I do.

HEARINGS OFFICER: Mr. Decoulos. Are you complete, are you done, Ms. Read?

MS. READ: I am sorry. I just need to do the rebuttal testimony as well. I am sorry.

HEARINGS OFFICER: Oh, I am sorry.

Q. And I am also handing you your rebuttal testimony which is marked as Exhibit B-63 and ask if you recognize it as the rebuttal testimony that you filed in this action.

A. Yes, it is.

Q. And do you adopt it as your testimony today?

A. I do.

MS. READ: Thank you.

HEARINGS OFFICER: Mr. Decoulos, it is your witness.

CROSS EXAMINATION

BY MR. DECOULOS:

Q. Good morning, Mr. Fitzgerald.

A. Good morning.

Q. Can you state what your form of employment is at the moment?

A. I am an environmental engineer working for the MassDEP.

Q. And what is your position with DEP?

A. I am the regional engineer for the Northeast Regional Office.

Q. And do you get involved in any issues with headquarters?

A. I do.

Q. And what are those?

A. I am active on developing policies and program development.

Q. And what type of policies and development?

A. Regarding the Bureau of Waste Site Cleanup.

Q. And any particular areas?

A. Well, I was the author of the VPH/EPH, that stands for Volatile Petroleum Hydrocarbons/Extractable Petroleum Hydrocarbons Implementation Policy, among other documents.
Q. What other policies do you get involved with?
A. Various ones. I am not sure --
Q. What is your area of expertise?
A. Waste site cleanup.
Q. And any particular contaminants in waste site cleanup?
A. Petroleum and other contaminants.
Q. Would you say that petroleum is your strong area of expertise for the Department?
A. One of them.
Q. What are others?
A. Vapor intrusion.
Q. Any others?
A. Nn-aqueous-phase liquid.
Q. We have already dealt with NAPL. Okay.
HEARINGS OFFICER: Or NAPL because we have been referring to it as NAPL.
A. Okay. Known as NAPL.

Q. Yes, we have been there. Any others besides petroleum, vapor and NAPL?
A. Emergency response activities.
Q. Anything else that you can think of?
A. That is -- no.
Q. Okay. Would you agree that you are one of the more knowledgeable employees at the Department on petroleum matters?
A. I don't know. I can't answer that. I don't know.
Q. Okay. You said that you were the author of the VPH/EPH policy. Is that correct?
A. Yes.
Q. And when did you begin work on that?
A. I believe in the mid '90's, 1990's, mid to late 1990's.
Q. And when did that policy become final?
A. I believe in 2002.
Q. Do you know when?
A. Not without looking it up.
Q. If I handed you the cover of that final policy adoption date, could you tell me what it might be?
A. October 31, 2002.

Q. Now, can you explain your understanding of what policies are, how policies differ from regulations and the statute?

HEARINGS OFFICER: Mr. Decoulos, where are you going with all of this? I mean he has submitted direct testimony that was fairly narrow with respect to the -- I can't recall where the site is located. So I am curious, and as you know and as I have said a number of times, the cross examination is limited to the scope of his direct testimony. You are well aware of that rule, so I am curious where you are going with this.

MR. DECOULOS: Just how effective the policy is in my performance of duties under the statute and the MCP, under 21(e), under the statute and the MCP.

HEARINGS OFFICER: I am sorry. What?

MR. DECOULOS: The issue at stake here --

HEARINGS OFFICER: Right.

MR. DECOULOS: -- is my fulfillment

of duties under Chapter 21(e) and the MCP.

HEARINGS OFFICER: Understood.

MR. DECOULOS: And what I am trying to determine is how does this EPH/VPH policy fit within that compliance?

HEARINGS OFFICER: Okay. You can, you can ask him questions about that. Go ahead.

Q. So Mr. Fitzgerald, what I am trying to understand here is what your understanding of this final policy of this VPH/EPH policy, which is entitled in full, Characterizing Risks Posed by Petroleum Contaminated Sites, Implementation of the MassDEP VPH/EPH Approach, Policy No. WSC-02411.

A. That policy, like all policies, is a guidance document that presents one way to comply with the regulatory requirements of the Mass. Contingency Plan.

As I stated in my testimony, LSP's are not required to adhere to any policy that the DEP publishes. However, if an LSP asserts that they are using a policy, they

have an obligation to use it as written.

Q. And this final, this policy that you authored which became final on October 31, 2000, there was a draft of that submitted that you authored, a final draft dated June 2001, which is Exhibit B-10.

Do you want to confirm that?

A. Yes.

Q. And on the front page of that draft policy, would you agree -- you know what, did I hand that cover to you, the final draft, the final policy?

MS. READ: I think we gave it back.

THE WITNESS: I believe we gave it back to you.

MR. DECOULOS: All right. I have it.

Q. Based on the fact that this is still in draft format, Exhibit B-30 --

MS. READ: It is B-10.

MR. DECOULOS: I am sorry. B-10.

Q. Would you agree that these aren't necessarily -- the information in this draft policy is not information that is

required for either a PRP or an LSP to follow?

A. That is correct. And as I just mentioned, even the final policy is not required to be followed by PRP's or LSP's.

HEARINGS OFFICER: And I think his direct testimony mentioned it as well.

Q. Now, as to your rebuttal testimony, on page two, lines nine through ten, you were talking about your review of a response action outcome report that I filed for the Speedy Lube Gas Station site in Randolph, Massachusetts. Is that correct?

A. Yes, it is.

Q. And would you agree that Figure 2 is a representation of site conditions that were presented at the Speedy Lube site in that RAO documentation which I have up on the screen?

A. Is this the 2004 or 2002 RAO?

Q. 2002 RAO, Exhibit --

A. Okay. Yes, I agree.

Q. Now, in your testimony on page two, lines nine through ten, you talked about my

evaluation of bedrock acting as a barrier to groundwater flow and that there was -- you made an assumption about where I had established bedrock and the evaluation of subsurface contaminant transport.

Do you agree?

A. I am sorry. Could you repeat that?

Q. You made an assumption, you testified that there was not very accurate bedrock information in the RAO report.

A. No. I testified that the contention that bedrock was controlling the groundwater flow was not in the RAO report. It was not discussed in that context.

Q. In this Figure 2 of the RAO report, do you see soil borings that are identified on the site plan?

A. Yes.

Q. And can you inform me what the legend in the lower left-hand corner talks about for the first symbol in the legend?

A. It says boring with refusal depth in feet.

Q. And what does "refusal" mean?

A. It means that it could no longer go

forward.
Q. And what --
A. Indicating that it may be hitting a boulder, a rock or bedrock.
Q. And can you tell me how many borings there are with refusals that are identified with that symbol on the plan?
A. One, two, three, four. Maybe you could help me out because it looks like three or four.
Q. Maybe five?
A. Maybe five.
Q. And --
HEARINGS OFFICER: Well, let's be clear about this. What are we looking at here? Is it RA-1?
MR. DECOULOS: RA-1, RA-1, RA-2, RA-5, RA-3.
HEARINGS OFFICER: Okay. So a total of five?
MR. DECOULOS: Five borings.
THE WITNESS: Let's say five, yes.
Q. Would you expect that to be a boulder?
A. Probably not.

Q. Are you aware that this report included boring logs?
A. I am.
Q. And what are the purpose of boring logs?
A. To describe the formation encountered during the advancement of a boring.
Q. And if you look at the boring logs, do you see any pattern of change in the different boring logs?
A. Some borings are deeper than others. I am not sure of what else you want for me --
Q. Okay. That there is a difference in the depth of the borings?
A. Yes.
Q. Okay. And do you think, if there is refusal at two feet, that it is necessary to show a boring log of that?
A. I don't know.
Q. Now, a little further in your testimony in lines 15 through 17, you stated that you assumed, you assume that I had determined that all -- well, why don't you explain what you meant by parenthetical B in your remark on lines 15 through 17.

A. Well, there was previous work done by another consultant, Sage, which was mentioned in your submittal but not discussed in terms of your review of that information, your opinion that it was valid then and remains valid when you filed your RAO. I didn't know what information you meant to infer was in your view appropriate for consideration in your RAO.
Q. And what is the purpose of an RAO?
A. The purpose of an RAO is to document to the public and to the DEP that a site has achieved a condition of no significant risk.
Q. And who is allowed to make that filing?
A. Who is allowed to make the filing? I am not sure I understand.
Q. Okay. Who evaluates whether or not there is risk and makes a determination that there is no significant risk?
A. A Licensed Site Professional files an opinion in that regard.
Q. And what is your understanding as to what an opinion is?

A. An opinion is, as the plain English definition would imply, it is the view of the LSP that, based upon sufficient diligence, level of oversight, expertise, that the evidence demonstrates that more likely than not a condition of no significant risk is present.
Q. And in the determination of an opinion, does an LSP have to provide all the information in the RAO documentation that he or she might need to form an opinion?
A. Yes.
Q. And if he or she decides to reference it in the reference section or just cite it in the discussion of the documentation, is that sufficient?
A. No, not without commenting upon its validity. I am sure if there was poor work done in a previous report that an LSP would not want to endorse that type of information.
Q. Did you have a chance to review the Sage report?
A. I did.

Q. And what did you think of it?
A. It was a Phase I report, which has a different objective than a response action outcome. I found some issues with it. For example, there were four existing monitoring wells on site, MW-1 through 4. There was no record whatsoever of their construction, yet that was used to make determinations on presence of nn-aqueous-phase liquid, for example, which I would question, given the fact that you don't know where the screening is relative to the water table.
Q. So do you think that Sage's Phase I report could be used to help formulate an opinion for an RAO submission?
A. Sure. All information has utility of a certain amount. The question is to determine if it is sufficient to make determinations that are being made.
Q. And if I oversaw groundwater sampling that confirmed Sage's earlier work, would that be sufficient?
A. It could be, yes, if that was done.

Q. Are you saying or implying that I did not conduct groundwater sampling for the RAO documentation?
A. I am implying that it was not sufficient to make the determination in the RAO.
Q. But you just said that I could, didn't you?
A. I said it could be done. I didn't say that it was done and I am saying now that it was not done.
Q. How do you know that?
A. Because I reviewed the report and I provided the information in my testimony.
Q. But I cited Sage's Phase I report in my RAO document, didn't I?
A. Yes.
Q. Now, you talked about Monitoring Wells MW-1 through MW-4 not having, that Sage used, not having any boring logs or monitoring well data; and because of that, you could not evaluate whether or not LNAPL was present. Is that correct?
A. No, it is not correct. They have data. I said they had no details on their construction.

Q. Of the wells?
A. Of the wells.
Q. And what about the LNAPL, what was your issue with that?
A. If in fact the well screen in those wells did not intercept the groundwater fluctuation zone, one could not make an assumption that it would in fact pick up nn-aqueous-phase liquid if that material was present.
Q. Do you know if the wells that I oversaw their construction of at the Speedy Lube site intercepted the well of the groundwater table as you just described?
A. I don't recall, but they may have.
Q. Do you think that the wells that I installed or oversaw the installation of may have been able to verify whether or not your concerns about the vertical orientation of the well screens from that Sage relied on might be helpful to confirm?
A. No, I don't.
Q. Are you aware of a paper that Thomas Nuzzo submitted to the LSP Association on the

evaluation of NAPL in soil in early, in around approximately 2001?

A. I don't recall.

Q. Now, when -- I am going to bring up the photographs that I introduced for the work that was completed at the Speedy Lube site. And I am going to start with Photograph 1.

Can you describe what you see on this photograph?

A. Someone kneeling on the ground doing something.

Q. And is there any machinery near that person?

A. Yes. It looks like some, maybe a geo probe.

HEARINGS OFFICER: Mr. Decoulos, what is the -- what are you trying to accomplish with this line of questioning on the photographs?

MR. DECOULOS: On page three of his testimony he talks about easy visibility in soil corings. And I am trying to show the soil corings and the fact that there was -- I am just about there.

HEARINGS OFFICER: Okay. Yes, you can get that.

Q. Would you describe what Photograph 2 is.

A. It looks like the corings from the geo probe investigation.

Q. So would you agree that a number of these photographs show corings from the geo probe investigation?

A. That is what it looks like, yes.

Q. Now, if you look at the boring logs from the original RAO documentation, do you see any evidence of me screening the soil in these borings with a photo ionization detector?

A. I do.

Q. And can you tell me what the purpose of screening the soil borings might be?

A. To look for evidence of volatile organic compounds.

Q. And if there was LNAPL in the soil, would that PID screening identify the LNAPL?

A. For gasoline, probably, yes.

THE WITNESS: Can I comment on that?

HEARINGS OFFICER: Sure.

THE WITNESS: I noticed, for example, in Boring 1 your PID reading was 2,713 parts per million, which I would suggest is possibly indicative of non-aqueous-phase liquid being present. Other borings have 848.

Q. Can I pull that up on the screen?

A. Sure.

HEARINGS OFFICER: Well, I want Mr. Fitzgerald to finish his testimony. Did you have anything else to add, Mr. Fitzgerald?

THE WITNESS: Well, other borings had 707, 793 parts per million. Based upon my masters thesis which involved head space evaluation with the PID, I know that readings above 100 to 200 parts per million may in fact be biased low because of a phenomenon called collisional deactivation, and any amount over several hundred PPM, I think, could in fact be indication of non-aqueous-phase liquid being present.

Q. Now, which borings are you referring to?

A. I am referring to DBB MW-1.
Q. DBB MW-1?
A. I am sorry. DB-1/DMW-1, Monitoring Well 1.
Q. Why don't we just call it DMW-1. Would that be simpler?
A. Sure. That would be easier.
Q. Okay. So that is DMW-1?
A. Yes.
Q. Which had a PID reading of over 2,000, you mentioned?
A. Correct.
Q. Okay. And what were your other concerned ones?
A. DMW-2 had between 800 and 900 PPM.
Q. And what depth?
A. The -- that was the depth above and below the water table.
Q. So at the water table?
A. Yes. Well, above and below. There was no reading from the water table.
Q. Okay. And the 2,000 at DMW-1 was at the water table?
A. It was.
Q. Okay. And any other borings or wells that

you were concerned about?

A. Yes. DMW-3 had 700, just below the water table. And the other ones looked relatively clean.

Q. Okay. So it looks like you are concerned about DMW-1, which is located between the pump island and the building; DMW-2, which is located to the west of the pump island; and then less so or still DMW-3, which is located to the south of, the southwest of the pump island. Is that correct?

A. Yes.

Q. And was groundwater sampled from those three wells?

A. Yes, they were. Yes, it was.

Q. And what was found in the sampling?

A. I don't recall exact numbers, but hydrocarbons were found.

Q. Okay. And the most significant problem you found, again, was with DMW-1 which was over 2,000 PPM at the groundwater table. That is what the response was with the PID?

A. That is correct.

Q. And if you look at the groundwater table,

can we go to the groundwater table summary, analytical summary table for DMW-1.

A. Is that Table 3?

Q. I believe so, yes.

A. Yes.

Q. Okay. Can you tell me what the VPH concentrations were at that well?

A. The average here for benzene was over 4,000 micrograms per liter.

Q. But I asked for the VPH.

A. For the VPH, let's call them fractions, fractions, it looks like is that 1,500 micrograms per cubic meter for the C-5 to C-8.

MR. LUHRS: It is.

HEARINGS OFFICER: Mr. Luhrs, you can't testify as well.

A. And 2,000 for the C-9 through C-10.

Q. And if I showed you a photograph of DMW-1, could you confirm or deny whether that was the actual location of it?

A. I don't know. If you say that it is, it is your report. I wasn't there.

Q. No. But I am asking for you to confirm to

see if I can confirm the location based on what the site plan shows.

HEARINGS OFFICER: Well, he can testify to what the site plan shows, Mr. Decoulos, but I think it is a stretch to try to --

MR. DECOULOS: Okay. I don't -- it's not even there so if you could just strike that, that is fine.

HEARINGS OFFICER: Sure.

Q. Did either Sage or I report any evidence of NAPL in our subsurface investigations?

A. I believe you mentioned odor, maybe someone mentioned a sheen. I don't know if it was you or Sage.

Q. And is it possible to have a sheen on the groundwater or in the groundwater without NAPL?

A. That is semantics. But under definition in the MCP, as commonly applied, sheen and something more than a sheen are generally differentiated.

Q. So how do you differentiate between a sheen and NAPL?

A. Well, I think, in practice, even though non-aqueous-phase liquid is any amount of non-aqueous-phase liquid, in practice I think most people would probably go with the eight-inch depth, which is an MCP reporting threshold, as being perhaps an indication of what NAPL is compared to a sheen.

Q. Now, have you done any work -- you mentioned in the early part of your testimony that you have been working on some policy development regarding vapor and NAPL. Is that correct?

A. That is correct.

Q. And can you tell me what you know about the LNAPL Work Group that DEP has formed?

MS. READ: Objection.

HEARINGS OFFICER: Mr. Decoulos, we talked about this before. Where are you going with this?

MR. DECOULOS: Okay. As a matter of fact, remember earlier I was asking about some questioning. So I will stop.

HEARINGS OFFICER: Right. And we

talked about the fact that that is outside the scope of his direct examination.

MR. DECOULOS: Okay.

HEARINGS OFFICER: Okay.

Q. Can you agree that recent work done by the LNAPL Work Group and by the LSP Association has focused the review of LNAPL on soil rather than groundwater?

MS. READ: Objection.

HEARINGS OFFICER: Again, Mr. Decoulos, that is outside the scope of his direct examination.

Q. Can you tell me, Mr. Fitzgerald, on page three of your rebuttal testimony, on pages 21 through 24, you talked about the consistency of LNAPL with monitoring well gauging, can you explain what you were describing there?

A. This is page three, lines --

Q. Lines 19 through 24.

(Witness perusing document.)

A. I was indicating that some licensed site professionals have proposed that an approach for LNAPL evaluation focused on

the evaluation of soil cores. However, I also indicated that this has not been accepted by MassDEP, and to quote my testimony, indeed is inconsistent with the monitoring well gauges approaches advocated by the United States EPA, the American Petroleum Institute, and every, every regulatory agency that I am aware of.

Q. Would you agree that LNAPL as it might appear in from monitoring well gauging would also be evident in a soil core evaluation?

A. No. I don't know that is the case.

Q. So you think that there is a possibility that you could actually advance a bore, visually inspect that bore, and not -- and have LNAPL and not have -- excuse me. Let me strike the question.

Do you believe that it is possible to have LNAPL in a monitoring well and not be able to visually identify it?

A. In what, a soil coring?

Q. In a soil coring.

A. Yes, I do believe that. I can explain it

if you wish.

Q. Yes, I would appreciate it.

A. Okay. The movement of non-aqueous-phase liquid into a well, for example, would go through the soil. It may go through macro features in the soil to get into the well. You could sample with a coring a one-inch diameter core somewhere around that well and not intercept the macro pores; or if you do, you would see minimal amount of actual NAPL, but it would get to the well. And in my view, the only way to know if there is migrating NAPL that may accumulate in a well is to gauge that well, which is consistent in my experience with every other regulatory agency that I am aware of.

Q. But isn't the focus of these recent efforts by the LSP Association and the LNAPL Work Group arguing that LNAPL does not migrate, that it is relatively stable and static?

MS. READ: Objection to the question about the LNAPL Work Group.

HEARINGS OFFICER: He can -- he has laid enough foundation where he can

follow-up. And this goes to Mr. Fitzgerald's credibility and reliability. He is there. He can -- you can answer the question, Mr. Fitzgerald. Do you want him to ask it again?

THE WITNESS: No, I think I understand.

MS. READ: First of all, we need to differentiate the LSPA, from the technical group in the LSPA that proposed this approach, from the LNAPL Work Group. Those are three different entities so they cannot be combined.

MR. DECOULOS: Okay.

Q. For the record, can you just explain the three entities again?

A. The LSPA is the broad Licensed Site Professional Association. As I understand it, one of the work groups of the LSPA involving a certain number of LSP's has proposed this approach. The LNAPL Work Group is comprised of DEP people, industry people, as well as LSPA's, as well as LSP's. So there is not a monolithic, they

are different entities.
Q. Now, the LSPA Work Group that you mentioned, isn't that part of the Technical Practices Committee of the LSPA?
A. It could be.
Q. And isn't that same organization part of the LSPA?
A. Yes, it is part of the LSPA. I am not aware that the LSPA as a whole has endorsed the technical practices' recommendation. Maybe they have but I am not aware of that.
Q. Are you aware of the white papers that the LSP Association has issued?
A. Yes.
Q. And weren't they generated from this Technical Practices Committee?
A. Presumably so, yes.
Q. And aren't most, most of the members of that Technical Practices Committee participating in the DEP LNAPL Work Group?
A. They could be.
Q. Doesn't the American Petroleum Institute also have some policy and guidance available for evaluating LNAPL as a soil

contaminant?

A. I am not sure of what that means.

Q. I am asking you if the American Petroleum Institute has considered or evaluated the possibility of evaluating LNAPL as a soil contaminant?

A. I don't know. I am only aware of the proposals put out by the API that involve the multi-phase model approach that was done by I believe a Professor Shano, that is focused on monitoring well gauging and evaluation.

Q. So you are not aware of any soil-based NAPL efforts by API?

A. I don't know what that means. There is reports about residual saturation put out by API, so I am not sure where you are going with that.

Q. I am just asking you, do you know if the American Petroleum Institute has undertaken an effort to --

HEARINGS OFFICER: He has answered the question, Mr. Decoulos. Let's move on.

MR. DECOULOS: Okay.

Q. Now, Mr. Fitzgerald, on page four of your rebuttal testimony you talked about the evaluation of risks posed by benzene in the indoor air.
A. Mm-hmm.
Q. Rather, you were responding to an assertion that I was making regarding the evaluation of risks posed by Benzene in the indoor air, the site building. Can you, do you know what the site building was used for at the Speedy Lube site?
A. I believe you indicated it was for light repair, oil change, other type of activities of that nature.
Q. And do you know if there were any other uses in that site building other than automotive repair and the retail distribution of gasoline?
A. I don't recall.
Q. Can you explain or, rather, can you confirm whether or not an activity in use limitation was recorded at the Registry of Deeds prior to my filing of this Response Action Outcome?

A. I don't know.
Q. If you look at the report, can you answer that question?
A. I think an AUL was filed at some point. I don't know when though.
Q. At what point does an AUL have to be filed with a Response Action Outcome?
A. It is usually filed with it.
Q. With it?
A. With it or before it.
Q. Well, doesn't it have to be filed with it?
A. Well, yes. It is usually presented with the RAO report.
Q. Isn't it required in the regulations to file it before the RAO?
A. It actually has to be filed. It is usually submitted with the RAO.
Q. And what is the purpose of an AUL, Activity Use Limitation?
A. It is to accommodate activities that are restricted because of the possibility of risk from those activities.
Q. And so if an AUL was filed on this property prior to the RAO documentation, what does

that mean to you?

A. I don't understand the question.

HEARINGS OFFICER: Where are you going with this line of questioning, Mr. Decoulos?

MR. DECOULOS: The purpose of the AUL is to --

HEARINGS OFFICER: I understand what the purpose of the AUL is, but where are you going with the questioning?

MR. DECOULOS: He described the evaluation of risks on page four of his rebuttal. And where I am going is is that the AUL, the purpose of the AUL is to ensure that any change in use of the site would require another RAO opinion. And that benzene in the indoor air of a retail gasoline station and an automotive repair facility is a common indoor air constituent that the workers are all exposed to, and that risks were properly addressed through the filing of the AUL.

HEARINGS OFFICER: Well, why don't you just ask him that question. Were risks

--

MR. DECOULOS: Well, but --

THE WITNESS: I would like to answer that question.

HEARINGS OFFICER: Sure.

MR. DECOULOS: Well, what is the question? Let's form exactly what the question is here.

THE WITNESS: Well, since you brought up my rebuttal on page four about the benzene, I would like to discuss that.

MR. DECOULOS: Well --

HEARINGS OFFICER: No, let's let Mr. Fitzgerald -- go ahead, Mr. Fitzgerald.

THE WITNESS: Well, your answer in your rebuttal, you indicated that the EPC's four groundwater were calculated at each individual monitoring well and you referenced the page 19 of your documentation of your RAO.

That is not what that says. Page 19 says that under the MCP they are supposed to be calculated. But you, as far as I know, did not do that for benzene. I

did not see anywhere in your report where you used the term "exposure point concentration" in connection with any site data, including benzene. I do not know how benzene was evaluated in your report.

Q. Mr. Fitzgerald, I have up on the screen a table of contents for Exhibit B-55.

Can you read for me what Section 6.6 is entitled?

A. Not unless you make it bigger.

Q. Do you have it in front of you, just the table of contents, the second page?

A. 6.6.

Q. Yes.

A. Exposure point and exposure point concentrations.

Q. Isn't that what you are referring to?

A. Those are terms in the MCP. What I want to see are those terms in connection with your site data.

Q. But as you stated on page 16, you mention that I provided average GW results, which stands for groundwater, average groundwater results.

Isn't that what the exposure point concentration is for groundwater, the averaging of groundwater data at that particular groundwater point?

A. In Method I and Method II in the MCP, it is permissible to do temporal monitoring in time, averaging in time. It is not permissible to do spacious averaging amongst wells.

Q. Are you saying that I spaciously -- that I calculated the exposure point concentration amongst different groundwater wells?

A. I don't know what you did. You did present an average groundwater concentration in one of your tables.

Q. Isn't that what the exposure concentration is?

A. That average was among different wells and that is not the exposure point concentration in Method I and Method II of the MCP.

Q. What table was it again?

A. Table 4.

Q. Table 4?

A. Yes, table 4.
Q. What is the purpose of Table 4?
A. After much deliberation, I finally assumed that it was an attempt to try to develop alternative groundwater tube standards.
Q. What does it say at the top of the table?
A. It says, development of Method II standards, Groundwater 2.
Q. Doesn't that answer your question?
A. Kind of. It put me in that frame of mind, but it took me a lot of evaluation to try to figure out what was actually being done. Apparently, it is all explained in the three footnotes, techniques that I am not familiar with.
Q. Okay. Let's go back to the actual development of exposure point concentrations in the groundwater.
A. Mm-hmm.
Q. Isn't that presented in Table 3?
A. Let me see. Table 3, I am not seeing that terminology anywhere in Table 3. Maybe you could show me where it is.
Q. What do you think AVG might stand for?

A. It's average.
Q. Don't you think the last column of each, from each groundwater monitoring point might be the average from that particular groundwater monitoring well point?
A. Yes. And I would assume, for example, in DMW-1, that the EPC would be over 4,000 micrograms per liter of benzene, which exceeds the Method I Groundwater 2 standard which applies at that well.

What I do not see anywhere in the documentation is a discussion of why that is not causing a vapor intrusion concern, or what an alternative Groundwater 2 standard would be in compliance with the MCP provisions. That is what I do not see.
Q. Now, for this forum to understand these issues a little better because we are getting into some technical --

HEARINGS OFFICER: I understand the issues, Mr. Decoulos.

MR. DECOULOS: Okay. But do you understand that there is three ways to evaluate risk?

HEARINGS OFFICER: I understand.

MR. DECOULOS: Okay. Thank you.

Q. So what is the purpose of conducting a Method II risk characterization?

A. If the Method I generic standards are exceeded, LSP's have an option to do what is called a Method II risk assessment, which is a more site specific evaluation. And it allows the LSP to demonstrate that even though the Method I standards were exceeded, the site still is at a condition of no significant risk.

Q. And isn't that the whole purpose of Chapter 21(e) in the MSP is to evaluate risk?

A. That is an overly broad question.

Q. Well, I am asking the broad question.

A. I can't answer it.

Q. Now, how is an LSP to determine what an appropriate Method II standard might be?

A. By following the MCP.

Q. And where in the MCP does it describe the development of Method II standards for groundwater?

A. 40.0900.

Q. And in 40.0900, does it describe the specific methods for taking groundwater concentrations from either Benzene, Toluene, Ethyl Benzene, Xylene or any of the VPH constituents, does it describe how you take that data and actually calculate a Method II standard?

A. No. What it tells you, how to calculate a Method II standard for chemicals that do not have Method I standards. You are not allowed to use those equations to develop Method II standards for chemicals that have Method I standards.

The footnote in your table indicates that you used those equations, apparently, to develop the alternative standards. That is not allowed. Those equations are only to be used for chemicals that do not have a Method I standard.

Q. But that is not the only method I used to evaluate, was it?

A. No, it wasn't.

Q. So what were the other two standards that I used in those footnotes?

A. As indicated in my testimony, the MCP has two alternatives in that regard. One is to show that there is no, in the case of groundwater II instances, there is no vapor intrusion impact, or to develop an alternative number. Either approach would be allowed.
Q. And how does an LSP develop an alternative number for a Method II standard?
A. By looking at all of the considerations at the site in question and determining what concentration in groundwater would not create a significant risk for vapor intrusion.
Q. And where is an LSP to find the method in which he or she is supposed to accomplish that?
A. I don't know.
Q. Are you aware that I took a Method II Risks Characterization Continuing Education course in the fall of 2005?
A. Yes, I am aware of it. In fact, I taught one of those courses.
Q. And in that course that you taught, did you

describe how an LSP can develop an alternative number looking at all the site conditions as you described earlier?

A. I might have. I don't recall exactly what was discussed.

Q. And getting back to page four with the issue of indoor air exposures, there is a small retail gas station with a one-bay automotive repair facility.

Don't you think that the indoor air exposures for the people inside that building would be far greater from the chemicals that they are dealing with, rather than any subsurface contamination that there might be underground?

A. Maybe, but I don't like to speculate.

Q. And didn't I calculate, didn't I actually collect soil gas data at that site?

A. Yes.

Q. And what did that soil gas data show?

A. Levels of hydrocarbons in the soil gas.

Q. Were they considered risks?

A. I don't know. I didn't do the evaluation.

Q. But you are evaluating my RAO and

criticizing it, aren't you?
A. I am saying that there was no evaluation done of the potential vapor intrusion into the building for Benzene.
Q. And if the owner, Speedy Lube, decides to sell this property or change its use, doesn't he have to have another LSP opinion because of the AUL that is on record at the Registry of Deeds?
A. I am not sure what the AUL actually says, nor do I see why that is relevant. When a RAO is filed, the AUL is for future exposures. An AUL cannot be used to limit existing exposures. The existing exposures for Benzene at that location was not evaluated. That is not acceptable.
Q. And the existing use at the property was what again?
A. Some kind of a repair facility.
Q. And do you want to take a look -- is the AUL available for you to take a look at, the first two or three pages, just to take a look at and see what it actually had in there?

A. I don't know. Is it?

HEARINGS OFFICER: Why do you want him to do that, Mr. Decoulos?

MR. DECOULOS: Because the AUL specifically states that any change in use of this facility would require that another LSP evaluate a change in use or of the sale of the property -- not the sale but any change in use of the property that would occur in the future would have to be, previously be evaluated by an LSP.

HEARINGS OFFICER: Right. A fairly standard provision, to my knowledge.

MR. DECOULOS: It is. And so all I am trying to get at here is is that there is an existing gas station being used, and that if that existing gas station, what the concern is here is a Method II, is rather what the risk is to indoor air, and if the change, if this change, if this property is changed, that a risk assessment or another risk characterization would be appropriate to evaluate another type of indoor air exposure. But right now, as it stands, the

exposures, whether they are from Benzene or any other constituents in gasoline, would be mixed with whatever is occurring inside that building.

HEARINGS OFFICER: Do you want to respond to that, Mr. Fitzgerald?

THE WITNESS: I don't know why that is relevant. I am talking about the existing exposures. You are presuming that there is other sources of Benzene, which may or may not be the case.

Q. But aren't we are looking at the risk to indoor air?

A. We are looking at that as well as complying with the regulations. The regulations do not allow you to rationalize if there is already Benzene there most likely; therefore, I don't need to think about that as part of this RAO. That is not allowed under the regulations.

Q. But don't the regulations allow you to modify the Method I standards and develop Method II standards?

A. They do.

Q. And don't the regulations, aren't the regulations unclear as to how an LSP is supposed to modify those standards?
A. The regulations are performance-based documents. We don't micromanage how LSP's do their job. LSP's should have sufficient expertise to make those kinds of evaluations.
Q. But where is an LSP supposed to -- you have taught a course in Method II risk characterizations, and what is the purpose of these courses?
A. To help educate LSP's.
Q. And isn't it also to help LSP's improve their performance in evaluating risks?
A. Yes.
Q. And so why doesn't the Department offer specific guidance and instructions on developing Method II standards?
A. The Department offers specific criteria in the VPH/EPH policy to rule out a vapor exposure pathway, which you asserted to use three times in your RAO, which you did not use. You, in fact, tried to develop

alternative Groundwater II standards, which is permissible under the MCP, but is not addressed in the VPH/EPH policy.

Q. So again, there is no instructions for an LSP on how to modify Method I standards to establish Method II standards in the VPH/EPH policy, is there?

A. Not in the VPH/EPH policy.

Q. Nor is there in the MCP?

A. There is requirements on what you must show to do that. But once again, the MCP is a performance-based document. It doesn't give you a cookbook on how to do your job.

MR. DECOULOS: No further questions. Thank you.

HEARINGS OFFICER: Do you have any questions, Ms. Read?

REDIRECT EXAMINATION

BY MS. READ:

Q. Were there any other contaminants of concern for which Mr. Decoulos did not develop a Method II standard?

A. Yes.

Q. What was that?

A. Methyl Tertiary Butyl Ether, more commonly known as MTBE.
Q. And by what method did -- but that contaminant, MTBE, did exceed Method I standards?
A. For Groundwater II, correct, in a well that was within 30 feet of the building.
Q. So Mr. Decoulos should have calculated exposure point concentrations and performed risk characterization of that contaminant, correct?
A. Because that contaminant exceeded the Method I, Groundwater II standard, it was necessary to either develop an alternative Groundwater II or to show that it was not causing a vapor intrusion concern.
Q. And did he do either of those --
A. No.
Q. -- things?
A. No.
Q. What did he -- how did he explain his handling of that?
A. He indicated that he incorporated that chemical into the C-9 through C-10 aromatic

hydrocarbon fraction.

Q. Is that permissible under the MCP or the VPH/EPH guidance document?

A. No.

MS. READ: I have no further questions.

HEARINGS OFFICER: Okay. Thank you, Mr. Fitzgerald.

MR. DECOULOS: I have redirect, if I may, on the MTBE issue.

THE WITNESS: That is okay with me.

HEARINGS OFFICER: One or two questions, that's it.

MR. DECOULOS: Yes.

RECROSS EXAMINATION

BY MR. DECOULOS:

Q. Does the VPH/EPH policy that you authored describe how to develop a Method II standard for MTBE?

A. No.

Q. Does the MCP describe how to develop a Method II standard for MTBE?

A. It explains -- the MCP articulates the

criteria for establishing a Method II modified standard for all anolites, includes MTBE.

Q. But it doesn't explain how to develop the MTBE standard for Method II, does it?

A. No. It requires that you hire an LSP that has expertise to do that.

Q. And what is -- to the best of your knowledge, what is MTBE? Is it a natural component of gasoline? What is it?

A. MTBE is an additive to gasoline that was put in to address air pollution concerns.

Q. So MTBE is added to reduce air emissions?

A. That was the intention, yes, as I understand it.

MR. DECOULOS: No further questions. Thank you.

HEARINGS OFFICER: Okay. Thank you. Thank you, Mr. Fitzgerald.

THE WITNESS: Sure.

(Witness excused.)

MR. DECOULOS: Thank you, John.

THE WITNESS: Yes.

MS. READ: Will we be taking a

break between witnesses?

HEARINGS OFFICER: Yes. We will take a very very quick break.

MS. READ: But you would prefer to continue before taking a lunch break?

HEARINGS OFFICER: Yes. Unless anybody has an objection to that.

MS. READ: I don't.

HEARINGS OFFICER: Yes, I would like to finish up with Mr. Luhrs and then we will talk about scheduling for this afternoon.

MS. READ: Sure. Okay.

HEARINGS OFFICER: And if we need to, maybe another day.

MS. READ: Okay.

HEARINGS OFFICER: So why don't we take a five-minute break and we will meet back here at I have got about five after, so ten after.

MS. READ: Okay.

HEARINGS OFFICER: Okay. Let's go off the record.

(Brief recess.)

HEARINGS OFFICER: Back on the record after a short break. And we are going to resume the cross examination by Mr. Decoulos of Mr. Luhrs.

One thing I did want to talk about, however, is I am aware that it is now 12:15 and we still have not gotten to Mr. Decoulos's witnesses, and we will take a short lunch break and Mr. Luhrs testimony. You know, I think the thing to do here is, you know, all the testimony that has been coming in has been very helpful and very good, and that is why I have just been letting it go, so I think the thing to do at this point is do as much as we can today and we will decide where to go from there. Is that okay with you, Ms. Read and Mr. Decoulos? We may have to come back for another half day or whatever. I think the best thing to do after lunch is to put on witnesses other than Mr. Decoulos, I don't know what your order was, because that makes sense since they are here. And we will see how much we can

get done. If we can't finish, we will come back another day. Is that okay, Ms. Read?

MS. READ: Reluctantly, yes.

HEARINGS OFFICER: I understand. Reluctant on my part too, but I think it was necessary to keep going. Mr. Decoulos?

MR. DECOULOS: Yes, I agree. I think it will be a good idea.

MS. READ: May I just ask, will Mr. Bosen be here today?

MR. DECOULOS: Yes. He should be here by one o'clock.

HEARINGS OFFICER: Okay.

MS. READ: Okay.

MR. DECOULOS: I don't expect that there is much to cross them on.

HEARINGS OFFICER: Well, again, Ms. Read may have felt the same way about certain witnesses that you cross-examined, so it is a matter of perspective. All right.

Well, why don't we see what we can get done and, Mr. Decoulos, by the same token, you have been examining Mr. Luhrs

for quite a long time and I don't expect that there will be much more to cover. But again, I think that this morning has been very productive in terms of the testimony elicited so I let it go. So let's get to the point and move along with Mr. Luhrs. Okay?

MR. DECOULOS: Yes. Thank you.

HEARINGS OFFICER: Okay. Thank you. You may proceed with Mr. Luhrs. And Mr. Luhrs, you are still sworn in as a witness.

THE WITNESS: I am. I just don't recall exactly where we left off.

MR. DECOULOS: Yes. Is it possible to ask the stenographer just to maybe ask the last question. Can you do that, Carol?

HEARINGS OFFICER: Ms. Read might be able to tell you. She has been taking copious notes.

MR. DECOULOS: Okay. It had something to do with PID's and logical readings from the PID's. That is where I am at.

MS. READ: Yes, I think that was correct. That we were discussing, yes, let me see, we were talking about Ms. Baran's testimony as to the utility of PID data and what she had actually testified about.

MR. DECOULOS: Okay. Thank you.

ROBERT C. LUHRS,

CONTINUED CROSS EXAMINATION

BY MR. DECOULOS:

Q. Now, in your testimony, Exhibit B-61, which is your rebuttal, page five, you described that there were many reasons why initial responses to diesel might be artificially low, that diesel is not very volatile and does not necessarily produce high concentrations of vapor.

Isn't a PID allowed to screen for diesel releases?

A. A PID is an excellent screening tool. What it doesn't do is it is a field instrument that requires proper calibrations. You know, the way it is used in the manholes typically, and I think we heard testimony yesterday, they put a three-foot hose and

dropped it down. So how, how did that relate to, you know, air flow and wind in the area and how much was a sample being diluted by other things. There are just a number of factors. It is a qualitative, it is not a quantitative instrument.

Q. Okay. But if you look at the boring logs in my Phase I report which is --

A. Appendix B, I believe.

Q. No, that is the site plan.

A. Oh, no.

Q. It might be K.

A. Okay.

HEARINGS OFFICER: Which is exhibit what?

MR. DECOULOS: B-31, from memory. Here. Wait a minute.

MS. READ: B-30, I believe is the --

MR. DECOULOS: B-30, yes.

Q. Exhibit B-30, Appendix K is being referenced now.

A. Okay. Right.

Q. So could you explain or, rather, describe

what the PID responses were in close proximity to the well that had identified the BP5RR? If I go to the chalk, Chalk No. 1 from yesterday, those borings would be DCA, DCB and DCE.

A. Well, what we saw in DCA were two readings, one at four feet, one at eight feet, and they had approximately 1,560 for PPM --

Q. And what depth?

A. Parts per million at four feet.

Q. 1,569 PPM?

A. Roughly. I am averaging. And roughly, 1,890 at eight feet. Those two samples are two feet above and two feet below the water table.

Q. Okay. And what were the responses at similar depths at DCB?

A. 2,260 four feet, and 2,220 at seven feet. So as we go downgradient from A to B, we see an increasing, again, this is a qualitative, but we see increasing responses by the PID instrument.

Q. And what do we see downgradient of BP5RR at DCE?

A. Unfortunately, there is no way to really compare. At DCE, there is only one PID measurement. It wasn't taken at the four foot or the eight foot levels of the other two, nor was it taken near the water table. At one feet below the surface, there were 1,340 PPM, so it is a somewhat slower number, but at a totally different depth interval. And --

Q. Okay. So because it is at a different interval, that particular PID screen, why don't we forget about DCE and just --

A. Well, that is -- I don't think you should forget about it. I mean there clearly is a petroleum response there.

Q. No question.

A. But unfortunately, there is no other data to determine how significant or how bad that is as we go further downgradient to the longest storm drain here.

Q. Okay. All I am trying to get at here is the consistency of the PID responses at similar depths and how they were useful in evaluating where the NAPL was.

A. Okay. So we can only talk about A and B then so far.
Q. Yes.
A. Okay.
Q. So wouldn't you agree that the PID instrument was providing extremely helpful information and helped to evaluate where to put borings as they were being advanced in the field that day?
A. I think the way I would like to characterize it is that the PID did provide useful information. It is, typically, when I do work I like to do more samples and I like to do them at the water table, particularly when I am talking about a hydrocarbon product. I don't know to what degree the locations of where these subsequent wells were placed was predetermined or at all considered based on the field results here.
Q. But isn't it true that the purpose of this subsurface investigation was to evaluate NAPL around BP5RR?
A. I think -- I think if you go back and look

at the notices of responsibility from the Department, the purpose of the required investigation was to determine the nature and extent of diesel release at the site as evidenced by 5RR, and to determine whether that there was a potential for that NAPL to enter the storm drain.

Q. And so if I am managing a geo probe investigation out in the field, why would I have any predetermined opinions as to where NAPL might be flowing? What would -- why, why would I be limited to investigating that extent?

A. I can't speak to your state of mind or what your thought pattern was. I really don't know your work other than what I have read. I mean if you want to talk about, you know, why's, I mean I don't understand why samples weren't collected and screened at the water table where impact would be most likely either. The data is what the data is and that is all I have to work with.

Q. Okay. What is the depth of the soil that was submitted for analytical analysis?

Isn't that in the table?
A. It could be. But we are looking at the logs and talking about PID. Do you want --
Q. Okay. Why don't we go to the soil analytical table in that report.
A. Okay. It looks like that is Table 2 in the Phase 1 report. And there are soil results for some, but not all of the holes. The depths of the soil samples appear to be composite of a five-foot interval ranging from five feet below grade to ten feet below grade.
Q. Isn't that where the groundwater was at the time of the investigation?
A. Based on the boring logs we were just looking at, the depth to the water, I believe, was approximately six. But let me double-check that. Let me find that again.
MS. READ: I think you might have gone past it.
THE WITNESS: Did I go past it? Okay. At least on A and B, which were the two we were talking about, groundwater elevation six feet, groundwater elevation

six feet, groundwater elevation -- it all looks like we have a totally flat groundwater table. Everything is -- Oh, no. Everything is six feet, with the exception of DCW-1 where it was seven feet, DCW-2 was at seven feet, and DCW-3 was at seven feet.

Q. Can you go to page 20 of the report. What table is shown on page 20?

A. On page 20, under Section 9.1, Geo Probe Investigation, there is groundwater elevation data in Table 1.

Q. And what does that table represent? What is the purpose of that table?

A. Well, I can tell you what a typical groundwater table is. But without going back through the report, I am not sure exactly how you use it here.

In a typical investigation, the purpose of a groundwater elevation table is to get data from which you can derive hydrogeologic flow information for groundwater flow direction.

Q. All right. But isn't it to determine the

depth to groundwater as well? Isn't that like the fundamental purpose of providing the data?

A. It -- typically, the data is used for further evaluation. The data on itself may or may not be useful.

Q. Now, on page five of your rebuttal testimony in Exhibit B-61 you stated on page, page, rather, you stated at Lines 9 through 11 --

A. Excuse me. On which page?

Q. Five.

A. Okay.

Q. Exhibit B-61, page five, Lines 9 through 11, you stated that Mr. Decoulos never provided information about the depth to groundwater in storm drain inverts, didn't you, or on the date of the PID readings? I am sorry. Is that correct?

A. The, the -- the sentence says, "Mr. Decoulos never provided information about the depth of groundwater and the storm drain inverts including on the date of the PID readings."

Q. Is that an accurate statement?
A. I believe it is.
Q. But didn't I provide the depth to groundwater right here on page 20 in one of my numerous reports, as in many of my numerous reports?
A. Well, yes, you did. However, the state -- the sentence and the statement I made in my rebuttal testimony is that you never provided the depth to groundwater and the inverts on the same date. And I don't see any reference to inverts on this table.
Q. Doesn't it say "including on the date of the PID readings"?
A. It -- again, my testimony says depth to groundwater and the storm drain inverts. It is not either/or. It is groundwater and invert data. And what I was trying to get at is, and I think it was in my direct testimony, one of the key pieces of information which I believe was missing or not properly, if it were evaluated, not properly described in your reports is what is the interaction between the groundwater

table and the storm pipe over time.
Q. Did you say "over time" in any of your pre-filed testimony?
A. I said "including on the date of the PID readings," so I inferred over time.
Q. I have Exhibit B-41 up on the screen.
A. Yes.
Q. Figure 2. Can you tell me what this figure shows?
A. That figure shows two cross sections, a cross section, I believe it is -- is this the one that is AA and BB, yes. And this was from, I believe, a document submitted to the Department at the end of 2004. Was it December? And it was after the Department had directed it to be prepared on several occasions.
Q. And doesn't this information depict the depth to groundwater in relation to the storm drain inverts?
THE WITNESS: I -- if I can -- I will answer yes on a -- as long as I am allowed to elaborate a little bit.
HEARINGS OFFICER: Yes.

A. One of the key points that I have tried to make throughout is the depth to groundwater and whether it is touching the storm drain pipe. And where it may touch the storm drain pipe in front of or downgradient of the gas station is really the crux of the question here.

If the groundwater with NAPL is in contact with the pipe, then there is potential for the pipe to be contaminated by that NAPL. If the storm drain system is installed above the water table the entire extent, then the NAPL release did not come from migration on the water table because it never would be a pathway.

This particular diagram is the first attempt to give a cross section. It does show that the water table up at AA is in contact with the pipe, but the water table elevation data is not provided on the figure. More importantly, although it is included by reference, I think, I can't quite see it, it says June something '03, the invert elevations have never been

supplied in any report that I am aware of that ties them back to a reference point that is also the same reference point used by or for evaluating groundwater. So there is on a figure, and it may be what Mr. Decoulos is trying to pick up now that shows the invert at a particular depth, but that is only below the rim. That is not with reference to a benchmark data point that you can then compare the depth to the bottom of the pipe to where the depth of groundwater is.

The other thing that is interesting, if you would stay where you are, here the --

HEARINGS OFFICER: Just for purposes of the record, Mr. Decoulos, stop flipping back and forth, please.

MR. DECOULOS: I am sorry.

HEARINGS OFFICER: For purposes of the record, we are looking at what?

MR. DECOULOS: Exhibit B-41, Figure 1.

HEARINGS OFFICER: Okay. Go ahead,

Mr. Luhrs.

THE WITNESS: Okay. So according to this --

MS. READ: I am sorry. I believe it is Figure 2. I apologize.

THE WITNESS: No, no, no.

MS. READ: I apologize.

THE WITNESS: So for example, the benchmark on this figure is assumed 100 foot. Okay. The invert depth is 5.88 feet. There is a 95-foot different that you can't reconcile.

Mr. Decoulos never took the invert elevation, tied the rim to the benchmark, and then did the same thing for the groundwater levels. And that is key data and this is only at one point. Really, you have to do it along the length of the pipe as if you can determine the incline of the pipe. But then the last thing is is the depth to water changes over time. If you go back and you look at when we had primary impact evidenced at the storm outfall, it was really in the springtime. It was May,

March kind of. It is when water tables were high. That would suggest to me as a hydrogeologist that the NAPL that was present in front of the gas station and that has been documented fairly well here would rise during high water table times. When there is a lot of groundwater, it is not uncommon for groundwater to fluctuate several feet. When that would happen, you would have NAPL being present at the pipe level in front of the gas station potentially. If you look at other times, Mr. Decoulos referred to a second set of PID data, and I think if you look at that, those are all ND's, all zeroes. That was at the fall. Fall is typically a low water table period. The odds of the water level being at that pipe level are much lower. I wouldn't necessarily expect the same impact.

And that is what I was trying to say in my direct testimony and also get to here in my rebuttal is I would have liked to have seen, and I expect to see it as a

standard of care in the profession, a very accurate series of data points tied to a single reference that you can then make a comparison.

Mr. Decoulos had a groundwater level sample collected in June of '03, then again not for an entire year, never has invert data tied to a benchmark; and yet, we see a cross section that infers things, but you can't say whether it is accurate because you can't tie it together. So I don't know whether that cross-sectional depiction, which came only after being told several times to produce it, has any validity in documenting whether NAPL did or did not get into the pipe.

Q. Okay. Mr. Luhrs, have you ever conducted a level survey or any type of field survey in the field?

A. I am not a civil engineer, nor am I a certified surveyor. I have worked with some survey equipment, but I have never used it for data in a report. I have always hired a certified surveyor and used

their data.

Q. Are you aware of what the purpose of a benchmark is?

A. Well, there are two primary types of benchmarks in my layman's term. Again, I am not a surveyor, nor do I pretend to be. Benchmarks are used by the U.S. Geologic Survey to represent known elevations at certain points. They are often on mountaintops, corners of roads, etcetera. It is very common in an environmental investigation, because the distance to a known USGS survey may be a mile or two mile away, to use a known reference point on a site that is constant and tie all elevations to that point. Sometimes it is the bolt on a sign or something that isn't going to move over time.

Q. Isn't the purpose of a benchmark to establish vertical control to allow either an engineer, surveyor or contractor to go back to that point and to continue to reference it to make sure that all current and future measurements are all linked to

that same benchmark?

A. And that is what I am saying we never have with the invert data. There is never an invert data reported in the approximate 100-foot range, we know it is going to be five, six feet below that, whatever. But the only reference we have for the invert, and again at the bottom of the pipe is so important in this evaluation, all we have is that one reference to it on a figure which I think is 5.88. So that is not tied to the benchmark which is 100.

Q. How can you make that determination? Isn't that the whole purpose of preparing that plan and cross section is to tie it together?

A. Absolutely. And what is typically done in my experience is on a cross section, because this is all reference that roughly the 90 to 100-foot depth range, is those data would be put on -- normally, you would have wells that are being used to evaluate the groundwater at this, within the cross section or other known reference points.

There is no data on this figure to say whether this invert is at 93 feet, 94 feet or whatever. And there are no groundwater levels on wells written on this either, and nor did I ever see it in a table in any of the reports submitted to the Department.

Q. Doesn't Section AA on Figure 2 call out that the groundwater table was established based on an elevation reading on June 12, 2003?

A. It says that. But there is no data on this figure to show whether the depiction of that one line which goes through a single point DCW-2 is accurate. You are showing that it appears to be at least a one-foot difference from the left side to the right side in the groundwater table here. What is that based on? There is no data to support that, nor is there any data to support that the groundwater table at the location of the invert is at the bottom of the pipe, halfway up the pipe or half a foot below the pipe. There is no data for

that.
Q. Can you go back to Table 1 in the Phase I report?
A. Absolutely.
Q. And what is the date of the groundwater elevation gauging that took place?
A. June 12, 2003.
Q. Don't you think I would have used that data to generate this cross section?
A. I think you did use that data.
Q. But you just said you didn't know where the data came from.
A. For the invert. You have one reference point on this figure that ties back to data. At DCW-2, there is a groundwater depth of 5.79 on this table.
Q. Okay.
A. The reference elevations on these figures are between 80 and 100. There is no -- there is only one point where you have any data on your figure tied to this table and that is at DCW-2. I can assume or I am assuming that you put that water table through that well at that location because

somehow 5.79 feet below surface was tied to an elevation known at the top of the well and cross referenced back to a benchmark of 100 feet, and I don't know where you get the depth of the storm drain. Again, there is no -- there is no invert data here in this table and my rebuttal testimony specifically says --

Q. Wait a minute. In which table?

A. Table 1.

Q. Okay. No invert. But the purpose of Table 1 is to provide groundwater elevation, isn't it?

A. That is correct, that is correct. But what I am saying in my rebuttal testimony and what you challenged me on, sir, is that Mr. Decoulos never provided information about the depth to groundwater and the storm inverts, including on that day. So I am saying it is not just groundwater data I would like to see. I want to see an evaluation that ties the invert level to the groundwater level, and not really just on one date, you should have this

evaluation over the period of time both in low water table and high water table so that you can then start to reconcile whether or not the discharge at the storm drain, which the Department clearly feels is connected to the release of the free-phase NAPL, from the diesel, are tied or not. And that is not here.

HEARINGS OFFICER: Mr. Decoulos, it is almost one o'clock. Are you planning to finish up?

MR. DECOULOS: Yes. I am just trying to move into the next phase of questioning here.

Q. Now, on page five of your rebuttal testimony you talked about the location of the PID readings and the depth of groundwater and the storm drain inverts.

Do you have idea as to why I placed the boring logs and groundwater wells where I did as shown in the Phase I report and also in my initial submission to the Department, the existing site plan from the Immediate Response Action Status Report

of June 2003, which is Exhibit B-21? So my question, again, is if we look at the borings that were advanced that are shown in the Phase I report, let's go to the IRA Status Report, Exhibit B-1.

A. The June '03, okay.

Q. June '03, yes. Now, the figure that is in this report which is referenced as Figure 3 -- I am sorry -- Figure 4 --

A. Okay. Just give me a second to get to that figure. Yes.

Q. That was the figure that became Chalk No. 1. And it showed my initial boring investigation to establish the NAPL from around BP5RR.

Do you have any idea why I put the borings in along the outside of the storm water collection pipe, why they were so close and why they ran in a linear fashion along the storm water collection pipe?

A. I can only assume. Again, I can't speak to what your thought process was. I would assume that the wells located or the borings, I should say, located between the

storm water line and the remote fill line were done in an attempt to determine where NAPL might be located. But again, that is just --

Q. And why would I put them along the exterior, in such close proximity to that 15-feet reinforced concrete pipe?

A. Again, I can't speak to exactly what your thought pattern was.

Q. Okay. Isn't it true that when a storm water collection system or any type of an underground utility system is put in place, that a contractor likes to provide pervious backfill to make his job of tampering and setting that utility line in place easier and also hold up over time?

A. It is.

Q. And isn't it true that the Department has discussed in various policies that pervious backfill of underground utilities can act as a preferential pathway?

A. Absolutely.

Q. And when I talk about a preferential pathway, could you just explain for this

forum what that means and --

HEARINGS OFFICER: We know what a preferential pathway means, Mr. Decoulos. Thank you.

MR. DECOULOS: Okay.

Q. Now, on page eight of your rebuttal testimony at Line 9, you talk about some facts, four facts actually.

A. Wait. Give me a second. Just let me read the question first.

Q. Yes.

A. Okay.

Q. So you talk about four facts. One, there is diesel; two, it was observable and measurable in one well and then in a second well; three, only one round of PID readings; and four, NAPL at the end of the storm water outfall. Is that correct?

A. Those are referenced here, yes.

Q. And isn't it true that we have determined that there is clearly more than one round of PID readings that were measured? Isn't that correct?

A. There were, yes. There was at least one

other set that was provided to the Board. It was never provided to the Department in reports.

Q. But you had that in your possession prior to this testimony, didn't you?

A. I did.

Q. Now, when you talk about on Line 9 and 10 about the exact pathway of migration may not be known, what I am trying to do here is to understand what pathway you think the diesel NAPL could have taken to run to the storm water outfall and create such high concentrations of petroleum constituents at that outfall.

Do you believe that that seasonal fluctuation of groundwater that you described earlier as it intercepts that storm water collection pipe could have led to the large petroleum concentrations found at the outfall?

A. I do.

Q. And so it is your testimony that that seasonal interception of NAPL, by that 15-inch reinforced concrete pipe, created

that limited amount of time of interception, caused that significant contamination?

A. I -- I think you are mischaracterizing what I just said. I said I think it is very possible. I didn't -- I am not in a position to opine that because I don't have the data that I would like to have before I could make that opinion. It is a hypothesis and I think it is a very likely scenario.

Q. Now, in the information I gave to the Board I talked about, and this is on January 30, 2008, this is the complaint review team.

A. The same letter that we talked about a couple minutes ago.

Q. Yes.

HEARINGS OFFICER: Which exhibit, Mr. Decoulos?

MR. DECOULOS: RR-40.

HEARINGS OFFICER: Thank you.

MS. READ: It is right here.

THE WITNESS: Thank you.

A. Okay.

Q. You had asked for some information at our meeting, and the first order of information that I gave you was the storm drain inspections for Eagle.

Don't you think that, with these five observations that were made, I would have seen some indication either through a sheen or a PID response that there would have been some significant contamination at an outfall caused by the storm water collection system?

A. Well, I think that there was data to that extent. I think the May 16th data that you did with the Department showed clearly that at DMH -- the one in front of 133, three, four, I think --

Q. Yes. DMH-3 is the drain manhole in front of 133 Main Street.

A. Okay. That DMH-3 had PID, had 27 PPM and there was a sheen seen or NAPL seen, I forget actually how it was characterized, at that location. And that is on the same date that we had oil discharging at the pipe, based on the photographs in the

direct testimony by others.

Q. And so how do you -- so you are referring again to DMH-3, which I am pointing at on Exhibit B-30.

How do you think the diesel NAPL, which was in front of the building at 131 Main Street, how does the diesel NAPL get to that drain manhole? Yes, how does it get there? What is the pathway?

A. Well, I can't say what the pathway is. What I can say is that it is not uncommon in investigations into groundwater, and particularly with NAPL flow, that you have very very discrete preferential channels that are related to the way the sediments were originally deposited.

I have seen a number of indications or sites where NAPL will migrate through a very very thin half inch seam or a fairly narrow micro channel of where there was a stream deposit of a sediment and there was a little bit more coarse material. What I am saying is there was probably something like that or a

general seeping from the release area, and again we don't know whether it was near the tank or near the fills or in between, along the water table and it flowed with the water table until the water table came into contact with the pipe, at which point it would have entered either at one of the bell collars because most of the storm drain systems are loose-jointed concrete pipes depending on the age, and I think this one is concrete, or cracks in the concrete. And a careful visual inspection along that entire length of pipe would probably be the most simple way to determine if that was indeed happening.

Q. So where do you think there might be bell collar interception or loose-jointed cracks in the concrete along that pipe that would act as a pathway for the diesel NAPL to get to DMH-3 and further downgradient, somewhere between DMH-3 and DMH-2 or between DMH-1 and DMH-3?

A. I would, I would like to say that that entire length between one and three, well,

you may not have to go all the way up to three, but maybe to where that 147, that number 147 is represented to your left right along the road, keep going, keep going, keep going, right there, maybe because that is far enough upgradient. But I would like to see a careful evaluation from there down to determine where it may be coming in.

The where do I think the bell collars were for where the pipes were jointed, along that entire length depending on the length of the piping that was used to construct it, so you would have every ten feet or so a collar. Again, lengths are going to be dependent on the manufacturer and everything else.

As to where cracks could have been in the pipe that could have allowed NAPL to enter, it is an old storm drain. It is underneath the road. You have testified that there was significant truck traffic around. I don't know. Without an inspection, you couldn't determine whether

that pipe is cracked. And I think where it enters, again, like I said earlier, is going to be dependent on the depth to groundwater and where it is intercepting the pipe. The point of entry may change over time depending on fluctuations in the water table.

Q. Wouldn't DMH-2 be a perfect point to see whether or not there are any bell collar failures or loose-jointed cracks in the concrete that would have, that diesel NAPL could have entered into in front of the building at 131 Main Street and then migrated down to the storm water outfall?

A. I am not sure how you can say that. I am not -- I am not sure when you looked at that picture, that is a five foot deep, 5.88 to the invert, according to the figure. And unless someone goes in and visually inspects it, you are looking at an extremely small portion of the pipe from road level.

So yes, you could enter that pipe. You could do a video camera run from that

pipe. You may even be able to put in some other method to do visual inspections, maybe with mirrors and bright lights. Maybe you could see some short distance up the pipe. But you are not going to inspect that pipe other than at that one location by opening up that manhole.

Q. I am not asking you for you to inspect the pipe. I am asking for you to use that manhole. Why can't you use that manhole to see a significant amount of diesel running inside that pipe on its way to the outfall?

A. You could if the diesel were entering above that. If the diesel were entering below that, you would not see it.

Q. How is the diesel going to enter below the pipe? How does it enter the storm water collection system below the pipe?

A. Gradient wise. I am sorry if I wasn't clear. If the diesel was entering that storm water drain south of that location, you would not see it at that location. If the diesel was entering north of that location, you may see it entering that

location.

HEARINGS OFFICER: Mr. Decoulos, how much longer do you have?

MR. DECOULOS: Yes, I think I am just about done. This is it, the last question.

HEARINGS OFFICER: Okay.

Q. So is it your testimony that the NAPL could migrate underneath this drainage manhole structure, go past, underneath it, underneath the drain manhole structure, and then enter into a pipe, a bell collar or loose-jointed cracks in the concrete somewhere between DMH-2 and DMH-3?

A. Absolutely, I am saying that. And, and the way you said that, I think, is slightly different. I said loose joints or cracks. I am not saying that the crack is only at a joint. A crack could actually occur any place along the length of a pipe.

Q. But wouldn't -- if, if this, what you are suggesting is correct, wouldn't the wells that were immediately advanced to investigate BP, diesel NAPL and BP5RR,

wouldn't Wells DCW-1 and DCW-2 identify NAPL at a depth below the invert, below the piping bed?

A. They may or they may not. Again, it depends exactly how the NAPL is moving towards the pipe and whether it is in the backfill or not. I think, and again I would like to go back and double-check, but I think if you look at your boring logs, your wells were not installed in the permeable backfill along the pipe. You were off a little bit of distance. And if, if you have -- you could be a foot away from it or two feet away from it in a tight sediment and it could be moving in the permeable backfill of the pipe.

Again, groundwater can be fickle in the way it is flowing. It will preferentially flow along any pathway that has a higher permeability.

And then again, if you look at the results, both from the PID, from A and B, compare that with the analytical results for A and B, we see increasing

concentrations of diesel compounds as we move downgradient. You go a little bit further downgradient --

Q. To what point?

A. To, well, between A and B first is what I said.

Q. Okay. DCA and DCB?

A. You see increasing concentrations from the PID as you go from north to south. And then when you look at the analytical data, you see increasing concentrations from the north to south. Look at the --

Q. But excuse me.

A. Let me finish, please.

HEARINGS OFFICER: One person at a time. Let him finish, Mr. Decoulos.

MR. DECOULOS: Sorry.

THE WITNESS: You look at the large amount of product in 5RR, up to six feet of product, just a short distance off the pipe, and then you look at we know NAPL is moving in this area and we know that because really there are two points. First of all, at 5RR, when you evac it, it comes

back, so we know it is mobile in the area.

Q. From one point --

A. No, no, no. That is --

HEARINGS OFFICER: Let him finish, Mr. Decoulos.

MR. DECOULOS: I am sorry. I am sorry.

THE WITNESS: The second piece of evidence that clearly shows that NAPL is migrating in this general area is when you installed DCW-1, you didn't see gross contamination. Yet, on I forget, it might be a year later, you've got LNAPL in that well. Let's just keep it at NAPL. We don't even need the L. You have NAPL in that well.

Now, we might say, well, it took a year to get there. So the contrary point would be there is no data between June of '03 and June or July of '04 when that was discovered. So I don't know if it was there two or three days later, one week later, one month later, or etcetera, etcetera, etcetera. So but we do know that

NAPL is moving in that area immediately adjacent to the storm drain.

Q. Okay. So you said that we know NAPL is moving because it wasn't apparent when DCW-1 was installed and then a year later it did become apparent.

But at some point doesn't this diesel NAPL extent reach a point of saturation, particularly since the source of the release was eliminated?

A. I am not -- I am not sure I follow your question.

Q. Why doesn't the LNAPL -- why doesn't the NAPL show up in DCW-2?

A. Again, like I stated earlier, it is so important to understand the depth of the pipe with respect to the groundwater elevation and where we have NAPL. And that is something that has been missing in this entire report and it is something that we talked about in the site visit and as well during our interviews on a number of times and it is in my testimony.

The place where it is coming in,

you would only see it at DMH-2 if it is coming in north of that location. If it is coming in south of that location, even by ten feet, you would not necessarily see it in that manhole access point.

HEARINGS OFFICER: Okay. Let's wrap it up, Mr. Decoulos.

MR. DECOULOS: Yes. That is it. I have no further questions. Thank you.

HEARINGS OFFICER: Ms. Read, do you have anything?

MS. READ: I would just like to review my notes quickly. I think I have just one, a couple of questions.

REDIRECT EXAMINATION

BY MS. READ:

Q. The testimony you have given about NAPL being in contact with the storm pipe, would the same be true of dissolved concentrations in the groundwater should the groundwater be in contact with the storm drain pipe?

A. Absolutely, the same would be true if, if the concentrations were at the water table.

MS. READ: I don't have any other questions.

HEARINGS OFFICER: Okay. Thank you. Okay. Thank you, Mr. Luhrs.

THE WITNESS: My pleasure.

MR. DECOULOS: Thank you, Mr. Luhrs.

THE WITNESS: Thank you.

(Witness excused.)

HEARINGS OFFICER: Well, that concludes Mr. Luhrs's testimony and it is time for lunch. So why don't we take a half-hour lunch break. Is that acceptable to everyone?

MR. DECOULOS: Yes.

HEARINGS OFFICER: Ms. Read, is that acceptable to you?

MS. READ: Yes. Although I find a half hour, although I suggested it, to be exceedingly short. Maybe if it could be along the lines of 40 minutes.

HEARINGS OFFICER: That's fine. We will do 40 minutes so we will be back here at ten of. How does that sound?

MR. DECOULOS: That is fine.

HEARINGS OFFICER: Okay.

(Brief recess.)

AFTERNOON SESSION

HEARINGS OFFICER: We are on the record after a lunch break and Mr. Bosen is in the witness chair.

Sir, could you please state your name for the record.

THE WITNESS: Theodore L. Bosen.

HEARINGS OFFICER: And do you promise to tell the truth, the whole truth and nothing but the truth?

THE WITNESS: So help me God, I do.

HEARINGS OFFICER: Thank you. Mr. Decoulos, you can begin with Mr. Bosen.

THEODORE L. BOSEN,

DIRECT EXAMINATION

BY MR. DECOULOS:

Q. Mr. Bosen, Exhibit R-1 is pre-filed direct testimony that you filed in this matter. Do you affirm that that testimony is your testimony in this matter?

A. Yes.

MR. DECOULOS: I don't have anything else. Mr. Jones, is that it?

HEARINGS OFFICER: And do you adopt that testimony as your testimony here today?

THE WITNESS: Yes, I do.

HEARINGS OFFICER: And off the record Ms. Read indicated that she didn't have any questions for Mr. Bosen. Is that correct, Ms. Read?

MS. READ: That is correct.

HEARINGS OFFICER: Okay. Mr. Bosen, thank you for appearing today. Your job is done.

THE WITNESS: Thank you.

MR. DECOULOS: Thank you, Ted.

THE WITNESS: Thank you.

(Witness excused.)

HEARINGS OFFICER: Mr. Decoulos, you can call your next witness.

MR. DECOULOS: Richard Doherty.

HEARINGS OFFICER: Good afternoon, sir.

THE WITNESS: Good afternoon.

HEARINGS OFFICER: Could you state your name for the record, please.

THE WITNESS: Richard Doherty.

HEARINGS OFFICER: And do you promise to tell the truth, the whole truth and nothing but the truth?

THE WITNESS: I do.

HEARINGS OFFICER: Thank you. Mr. Decoulos.

RICHARD DOHERTY

DIRECT EXAMINATION

BY MR. DECOULOS:

Q. Mr. Doherty, you filed pre-filed direct testimony on this matter which was identified as Exhibit R-6. Do you adopt this testimony to be your true and accurate testimony in this matter?

A. Yes.

Q. Do you have any changes that you would like to make?

A. Not at this time.

MR. DECOULOS: No further questions.

HEARINGS OFFICER: And Ms. Read.

CROSS EXAMINATION

BY MS. READ:

Q. Good afternoon, Mr. Doherty.
A. Good afternoon.
Q. Did you -- have you visited the Eagle Gas site that is at issue in this case?
A. Yes.
Q. And in your review of your documents, of the documentation in this matter, did you also review the photographs that Mr. Decoulos has posted on his website of the site?
A. I remember looking at them. Whether I have looked at every single one of them, I honestly don't remember.
Q. Mm-hmm. On page three of your testimony you are discussing that this is where you begin your enumeration of the lines of evidence that supported Mr. Decoulos's conclusion that the contamination at the outfall to South Meadow Brook originated from the surface water run off from the Eagle Gas property, and you describe the impact to South Meadow Brook as manifesting itself as a visible petroleum sheen on the water surface.

And I wonder if Mr. Decoulos could bring up Photograph No. 20. Would it be accurate in your opinion to describe the substance on the surface of the outfall to the extent that you can see it -- I don't know, Mr. Decoulos, if you could remove the caption or hide the caption.

MR. DECOULOS: I can zoom in. I think after a while the caption will disappear.

MS. READ: Zooming doesn't help because it points to the edges of the photograph.

MR. DECOULOS: I can move it if you want. I can zoom in and move, for instance. No, I can't go beyond that caption.

Q. From what you can see around the caption -- and maybe, if you would, maybe we should stop manipulating it and maybe the caption will disappear.

From what you can see of the substance on the surface of the water at the outfall at the time that the site, the

sheen was identified, is it your opinion or is it your testimony that it would be accurate to describe that substance on the surface as a sheen?

A. Well, you are asking me to make that judgment based on a photograph. But, but if your point is that there is also some kind of oil emulsion here, I would agree with that.

Q. And would that -- does the emulsion in that photograph, is that consistent with any sheen found in the catch basin downgradient from Eagle Gas that Mr. Decoulos asserted was the source of the contamination at the outfall?

A. Now, to the best of my recollection, I don't recall emulsion being seen at any of the upgradient locations.

MS. READ: And Mr. Decoulos, I wonder if you could move to Photograph No. 44.

Q. The caption on this photograph are the outfall conditions on June 3rd of 2003, at least approximately a couple of weeks after

the sheen was first discovered.

Is it accurate in your view to describe the substance that is on the surface of the outfall as a sheen?

A. I am finding it difficult to characterize it based on this photograph. I see a bunch of --

MS. READ: Well, maybe we can move to the following photograph, please.

Q. In the photograph, the substance in Photograph No. 45, which was on the same date, June 3rd, 2003, would it be accurate to characterize that substance as a sheen?

A. I -- I would make the same comments that you have got some, some emulsified oil in there too. I am not saying that there is not a sheen there also. But yes, I basically give the same response.

Q. Mm-hmm. And was there ever any time at which you observed a similar emulsion in the catch basin downgradient from the Eagle Gas Station, which I believe has been marked as Catch Basin No. 3?

MS. READ: Sorry. I am not close

enough to --

MR. DECOULOS: I am sorry. Which catch basin are you referring to?

MS. READ: The catch basin in front of number 133 Main Street.

MR. DECOULOS: That is Catch Basin 4.

Q. Catch Basin 4, downgradient from Eagle Gas, did you ever observe any or see any photographs of any substance similar to that substance in Catch Basin No. 4?

HEARINGS OFFICER: Can I interrupt for a minute? Isn't it Catch Basin 3 that is immediately downgradient of Eagle Gas? Am I wrong about that?

MR. DECOULOS: Yes, you are wrong.

HEARINGS OFFICER: It is Catch Basin 4 that is immediately downgradient?

MR. DECOULOS: Catch Basin 4 is the first catch basin downgradient.

HEARINGS OFFICER: Okay. Thank you.

THE WITNESS: And if I may, it is Drainage Manhole 3 that connects to Catch

Basin 4.

MS. READ: Okay.

Q. And have you, have you been shown any photographs or other evidence to show you that a substance similar to this substance in the Catch Basin No. 4 or Drain Manhole No. 3?

A. Assuming you are referring to the emulsion, I do not recall any photographs like that.

MS. READ: And just if we could go to, let me see, Photograph No. 58.

Q. This begins a series of photographs that was taken by MassDEP at the outfall on March 11, 2004.

Have you seen these photographs previously?

MS. READ: Maybe we could run through them and I could also show you some printouts.

MR. DECOULOS: To which number?

MS. READ: Numbers 58 to 62.

A. I looked at so many photographs. Whether I have seen these before, I honestly don't recall.

Q. Would it be accurate in your opinion to describe the substance that we are seeing in Photograph No. 62 here as a sheen?
A. I am not saying there is not a sheen there, but there certainly is an emulsion there. I will agree with you on that.
Q. Is it accurate to say that an oil emulsion on the surface of water would, could be caused by liquid, excuse me, non-aqueous-phase liquid, which we are referring to here as NAPL?
A. Emulsions can have several causes. They are very complex phenomenon. I don't know that I feel confident saying that that is the cause of the emulsion.
Q. But would this, is it possible that NAPL would cause an emulsion on the surface of water if it were leaking into a storm drain that had some water running into it?
A. I think it is fair to say it is possible.
Q. And do you think it is likely that an emulsion would be caused by the action of water in a storm pipe into which NAPL was leaking?

A. I don't think I -- I am not willing to go that far.

HEARINGS OFFICER: Well, let me ask you this, Mr. Doherty. If, if, if NAPL were -- let's assume that NAPL were released into the storm drain and by any cause, whatever the cause may be.

THE WITNESS: Mm-hmm.

HEARINGS OFFICER: And it ended up at the outfall, how might it appear? Would it be appear as an emulsion?

THE WITNESS: Well, once it goes into the storm drain, it is going to mix with whatever is in the storm drain.

HEARINGS OFFICER: Mm-hmm.

THE WITNESS: So that mixing could cause an emulsion to form. You could just see, depending on how much was spilled, you could see a thick black liquid, you could see a sheen.

HEARINGS OFFICER: Mm-hmm.

THE WITNESS: It could occur in a number of ways.

HEARINGS OFFICER: Mm-hmm. Okay.

Thank you.

Q. And in Photograph No. 62, there is a brown liquid that is on top of a lighter colored liquid which I think is what you are referring to as the emulsion, the emulsion being the light.

Do you see that there are two different colors in that substance on the surface?

A. I see the shades of tan that you are referring to.

Q. Yes?

A. Yes.

Q. And there are some lines of darker material on the top of the lighter tan?

A. Now, are you talking about what is on the left side of the photo?

Q. Yes, for now.

A. Okay, I see what you are saying.

Q. Is that petroleum product in your opinion?

A. I am not comfortable giving an opinion based on that photograph as to exactly what that is.

Q. Is it a form of oil?

A. Same response.
Q. And but it is true, isn't it, that all of the material that we are seeing in this photograph would be consistent, is part of what you are terming an emulsion, correct?
A. I wouldn't say it's all an emulsion. And I am a little uncomfortable with this because I feel like I am being asked to read a lot into a photograph. But, but looking into that and based on my experience, I would say there is an emulsion there. As to which part of the picture is an emulsion, it is just sort of splitting hairs there, I think.
Q. I don't mean to -- I am not trying to be overly restrictive. I guess I will just ask is it fair to describe all the material that we are seeing there as an emulsion?
A. I would say no, I think there is probably some water in there.
Q. Okay. And where do you think is the water?
A. Well, certainly, I would expect it would be below what we are seeing on the surface, the darker area closer to the right side of

the picture, but I am not really sure what that is. Is that water? It is hard to tell from the photograph.

Q. Okay. That is fair enough. Have you seen any photographs of the Catch Basin No. 4 or Drain Manhole No. 3 that include any material visually similar to the material in Photograph No. 62?

A. I don't recall any photos like that.

MS. READ: I would like to move to Photo No. 139, please.

MR. DECOULOS: Sorry.

MS. READ: Thank you.

Q. Would it be accurate in your view to describe the substance on the surface of the outfall in this photograph as a sheen?

A. From this photograph -- it's hard to see a sheen from a photograph. You have to be there, I think. Once again, I agree that you have got some kind of emulsion present in this photograph.

Q. Okay. And rather than ask you this for every photograph, is it fair to say that you have not seen a photograph of either a

Drain Manhole No. 3 or Catch Basin No. 4 that includes an emulsion?

A. Yes, there is no photo like that that I can recall.

Q. You said just a moment ago that it is hard to see a sheen in a photograph. Is that correct?

A. I did say that.

MS. READ: Mr. Decoulos, do you have enough familiarity with the photographs to know where the photograph of Drain Manhole No. 2, photographs of Drain Manhole No. 2 are?

MR. DECOULOS: Yes.

MS. READ: Thank you. I am sorry. Of the interior of Drain Manhole No. 2?

MR. DECOULOS: The first shot was Photograph No. 25.

MS. READ: Okay.

MR. DECOULOS: You know, do you mind if I give the witness a little perspective and go to Photograph 24 first so he can see?

MS. READ: That is fine with me.

MR. DECOULOS: Thank you.

Q. So this is the Drain Manhole No. 2 which is in front of the Eagle Gas Station property. And do you see a sheen on this, in this photograph?

A. Do I see a sheen on the photograph? I -- I can't tell from that photograph. I am going by what people said that were there.

Q. Mm-hmm. Okay. And you have testified that Mr. Decoulos had reasonable basis for his opinion that surface runoff was the cause of the petroleum impacts found at South Meadow Brook.

But yet, is it your testimony that a sheen from a surface runoff would persist in the storm drain system for over two years and be observed on multiple dates between May 2003 and June 2005, as contamination of that nature at the outfall that we have been observing in the photographs?

A. That a sheen would persist for two years, is that what you are asking?

Q. Yes. It is Mr. Decoulos's theory,

conclusion, excuse me, that surface runoff is responsible for the contamination at the outfall. And we have just reviewed several photographs and not all of the photographs of the contamination at the outfall.

And my question to you is, I guess, first, the type of surface runoff that Mr. Decoulos is anticipating is surface runoff over the surface of the gas station, correct?

A. That is my understanding.

Q. And is it your -- are you aware of any evidence of major petroleum releases during the period that Mr. Decoulos was working at Eagle Gas on the surface of the gas station?

A. There is reports of just housekeeping practices. But a documented spill during that time, I am not aware of any reported spill during that time.

Q. And are you aware of any reported spills of diesel fuel during that time --

A. No.

Q. -- on the surface of the --

A. I am not.
Q. And when you used the term "storm water runoff", are you referring simply to rain water that flows across the surface of the gas station and would be carried to the catch basin?
A. I am not limiting it to that. If I -- I did not intend that.
Q. I am only asking what you --
A. Okay. It could be a spill. It could, you know, I guess I am uncomfortable speculating about how this got into the Catch Basin No. 4. But you know, whether it was a spill, whether it was runoff from through areas of poor housekeeping or somebody washing something out, I just don't know.
Q. Would you expect that runoff through areas of poor housekeeping would create the kind of contamination that was visible at the outfall in the photographs that we have reviewed?
A. Well, what Mr. Decoulos observed at the outfall was something that looked like it

had been going on for a long period of time so it may not have been one event, one rain water event, but that combined with small spills over a period of time, a period of years, maybe, you know, I think it is reasonable to conclude that that is what you are seeing there, based together on the other five lines of evidence that I discuss in my testimony.

Q. So I am trying to -- I just want to be sure that I understand the substance of your testimony. And my question is, is surface runoff over the surface of the gas station, is it likely to persist over time? As it enters the storm drain system and flows to the outfall, is it likely to remain at the outfall? And let us first, I guess, assume that there are no booms there first.

A. It almost seems obvious that it is going to continue to flow down the river, down the brook.

Q. So by what -- but it is not -- so it is not your testimony that surface runoff -- strike that.

So your testimony is that it will, that surface runoff will flow out the outfall and down the brook. Correct?

A. That is not to say it wouldn't leave some indication of oil staining on the inside of the pipe or staining the sides of the bank. You could see indications of it, but I think you are referring to is the sheen itself going to just stay put there at the outfall of the pipe. Of course not. It is going to flow down the brook.

Q. And but you referred to sheen inside the pipe. I guess it is just unclear to me how surface runoff is consistent with the substances that we are viewing at the outfall. And could you explain what mechanism -- well, first of all --

HEARINGS OFFICER: I have a question for Mr. Doherty.

MS. READ: Sure.

HEARINGS OFFICER: Mr. Doherty, what kind of -- and I apologize for interrupting but before I forget this, I wanted to ask this.

What kind of surface water runoff conditions would exist over time at Eagle Gas to perpetually and continuously cause the emulsion to exist at the exit point of that outfall? That is what I am curious to know.

THE WITNESS: Mm-hmm.

HEARINGS OFFICER: Because it appears to me that it did over a period, at least from the evidence thus far in the record, that you had this perpetual emulsion that existed at that outfall over the period of two years.

What type of surface water runoff conditions would lead to that, if you know? And I don't want you to guess, but I am just curious.

THE WITNESS: Yes. And I am admittedly speculating here. It could be that they wash out their garages and it runs down the street to the storm drain, Catch Basin No. 4. They could be routine spills. They could be people filling up their tanks and they wash off the pads or a

storm comes and washes off the pads. By pad, I mean the tank pad where the fueling area is. So and there could have been larger spills of some kind that just never got reported.

HEARINGS OFFICER: Mm-hmm.

THE WITNESS: So the honest answer is I don't know because I wasn't there.

HEARINGS OFFICER: Mm-hmm.

THE WITNESS: But I could see those type of things causing that type of condition.

HEARINGS OFFICER: But would that lead to an emulsion or a sheen?

THE WITNESS: It's hard to say.

HEARINGS OFFICER: Those things you just mentioned?

THE WITNESS: It's hard to say.

HEARINGS OFFICER: Mm-hmm.

THE WITNESS: I agree that the emulsion would lead to the -- the emulsion makes you think that this must have been a fairly substantial amount of oil that got in there. But what is puzzling to me is as

you go upstream from there, you go to Drainage Manhole No. 3, you don't see the emulsion at Drainage Manhole No. 3.

I didn't see any pictures that showed an emulsion at Drainage Manhole No. 3. You only see a sheen. You see the high PID readings at each of those locations so the emulsion isn't tracking upstream in the pipe. Only a sheen is based on the report, reported observations I have.

HEARINGS OFFICER: Mm-hmm.

THE WITNESS: So --

HEARINGS OFFICER: Mm-hmm, mm-hmm, mm-hmm.

THE WITNESS: I think that is what we are to go on.

HEARINGS OFFICER: Okay. Thank you. Again, I apologize for interrupting, Ms. Read.

Q. But you would not expect that a sheen caused by surface runoff would look like the substance on the surface of the outfall in those photographs?

A. Well, as I said, emulsions can be caused by

different things and they are a complicated phenomenon. They are difficult to deal with, the causes of them.

What I want to say is there is more than one cause of an emulsion. It is just I don't think it is as -- I am sorry I am struggling for words here -- but as clear-cut as to say that a sheen can cause an emulsion. I just feel uncomfortable saying that.

Q. And I believe you used the term in answering Mr. Jones's question that you were admittedly speculating as to the events that might cause that type of emulsion on the surface of the outfall.

A. Excuse me. I think I said I was speculating as to what would cause -- what events at the station would cause, yes.

Q. Yes.

A. Okay. So that is right.

Q. And so to the extent that Mr. Decoulos relies on unknown events as a basis for his LSP opinion that surface runoff was the cause, is that -- that is not consistent

with a reasonable LSP standard of care, is it?

A. I really disagree with you there. You have to take the facts that you have. And the facts that you have show a trail of oil impacts from that outfall to Drainage Manhole 3, to Catch Basin 4. They don't go up to Drainage Manhole 2. They do go to Catch Basin 4. The catch basin is just a grate at the surface with only one way for liquids to get into it, from the surface. I don't see how you can reach any other conclusion than that this material had to have come from the surface.

Q. But there is a PID reading in the Drainage Manhole No. 2 that has a detection of volatile organic compounds, correct?

A. And I think that is a very significant reading because it is a lot closer to zero than it is to 24 or 27, which is what we are seeing at Catch Basin 4 and Drainage Manhole No. 3.

I have used PID's for many years and they have a range that goes from zero

to 1,000 or more. So zero to 0.5, you are really splitting hairs with this instrument to say that 0.5 is that much worse than zero. I could bring a PID into this room and get a 0.3, you know.

Q. But it is not your testimony, is it, that a reading of 0.5 is a false reading for the presence of volatile organic compounds, is it?

A. I -- I think you have to -- let me start over. It is a -- the photo ionization detector, the PID, it is a screening tool. It is a rough indicator. So when I see a 24 and a 27, to my mind, those are essentially equal. Zero to 0.5, okay, maybe there is something at the 0.5. But 24, 27, and I don't recall the reading downstream from there, but it was similar. To me, those 20's are giving a trail.

Q. You just said that the 24 and the 27 are essentially equal. And the catch basin is slightly uphill and upgradient from the drainage manhole, correct?

A. It is upgradient, yes.

Q. So it is your testimony that the PID reading in the catch basin and in the manhole, Catch Basin No. 4 and Drainage Manhole No. 3, are essentially the same, correct, 24 and 27?
A. Given the limitations of the instrument, they are roughly equal.
Q. But and just to return to my prior question, it is not your testimony that a 0.5 reading is inaccurate, is it? I believe the term that you used is a field screening device?
A. Mm-hmm.
Q. And a 0.5 reading does indicate a detection of volatile organic compounds in that location, correct?
A. I think it does. But you could put a Sharpie pen up to it, up to a PID and get a higher reading than that. I guess I am saying that it shouldn't -- I don't think that you should read too much into a 0.5 PPM PID reading based on my --
Q. All I am asking is that a 0.5 reading is an indicator of the presence of volatile

organic compounds?
A. It is a slight indicator. This is a calibrated instrument. The instrument is a little bit off. You could get 0.5 in clean air.
Q. But you are not disputing the PID readings that Mr. Decoulos recorded in his site plans, are you?
A. You know, my memory is a little fuzzy on this. I am not sure if it was Mr. Decoulos or DEP that recorded those readings, was it?
Q. I understand. I am just saying that were placed -- you have no reason to believe that the PID readings that are placed in Mr. Decoulos's various site plans are not the ones that were actually obtained in the field, correct?
A. Yes. I am assuming that they were actually obtained at the locations stated.
Q. Yes. Okay. And to the extent that there are surface releases in the ordinary operation of the gas station, you would -- and given that the Eagle Gas Station also

dispensed diesel fuel, would you expect diesel releases at the station as well as gasoline releases?

A. Diesel releases to the surface?

Q. Yes.

A. They probably would both occur at pretty much any gas station to some extent.

Q. And do you have any explanation for why the analytical data from the surface water at the catch basin, and here I am referring to the groundwater and surface water data that is recorded in Exhibit B-21 in the groundwater table, do you have any explanation, an explanation why the analytical data is primarily diesel fuel? Excuse me. Let me restate the question.

Do you have any explanation to why it is primarily EPH?

A. Why it is EPH? I can't come up with an explanation for why it is EPH and not something else, why it is EPH and not VPH.

Q. And with those kind of readings, it is true, isn't it, that an LSP exercising ordinary care should explore the reason for

the concentrations of EPH at the outfall that he obtained?

A. Well, and I think that was, was done here. If you are saying where did this come from, I think the study was done to show that, show where this originated from. Am I misunderstanding your question?

Q. No. But what I am wondering is was any fingerprinting done of any other sampling to try to match or distinguish it from the compounds at the outfall?

A. Now, correct me if I am wrong because I may not have perfect recollection of this, but I remember fingerprinting being done of samples from the outfall. That is correct, right?

Q. I believe so.

A. And it came back as diesel fuel.

Q. Well, I am not -- well, I cannot testify but my --

A. That is my recollection and --

Q. Returning just for a moment to the PID readings in the various storm water drainage structures, there was no storm

water impact -- excuse me -- PID detection of volatile organic chemicals compounds, excuse me, in the catch basins or drain manholes upgradient of Drain Manhole No. 2. Correct?

A. We have a zero PPM at Drain Manhole No. 1.

Q. And also at Catch Basin No. 1 and No. 2?

A. Correct.

Q. And so the first -- traveling from upgradient to downgradient, the first PID detection was in front of Eagle Gas. Correct?

A. You are correct.

Q. And you state that the Drain Manhole No. 2 is significant because it lies downstream from the area of BP5RR where the NAPL was detected. Correct?

A. Correct.

Q. But Drain Manhole No. 2 is not downgradient of the entire length of the UST's, the underground storage tanks or UST's?

A. That is correct.

Q. Correct.

A. Although it seems to be downgradient of --

well, I can't tell from this figure where the remote fill line originates, so never mind.

Q. Yes. On page five in paragraph number three, you discuss Mr. Decoulos's soil and groundwater analytical results. And you state that there is a lack of indication of separate phase oil in soil and groundwater samples from DCW-1, DCW-2 and DCW-3 in 2003. Correct?

(Witness perusing document.)

A. Yes, that is correct. I think it says what it says.

Q. And I am handing you what has been marked as B-21, which is Mr. Decoulos's July 2003 IRA Status Report which was the first status report filed for either of the releases on which Mr. Decoulos was working.

And as you review that report, soil, the soil boring that was taken in the spot where Monitoring Well DCW-1 was placed was not laboratory analyzed, correct? There are no analytical results for that location, correct?

A. I see no soil results on this table for DCW-1.

Q. But the soil in the upgradient borings, which are DCA, DCB and DCE --

MS. READ: I am sorry. Could you project the Phase I site plan, please.

MR. DECOULOS: That's it right there.

MS. READ: Okay.

MR. DECOULOS: Exhibit B-30, the Phase I.

MS. READ: I am sorry. That's not the correct -- I think it's the --

MR. DECOULOS: From the June 2003?

MS. READ: Which ever -- the one that shows the boring locations.

MR. LUHRS: Phase I.

MS. READ: This is the Phase I and it doesn't show the boring locations.

THE WITNESS: How about this Chalk 1 up here?

MR. DECOULOS: Yes. You know what, I will get it up. I will just do the -- yes, Chalk 1 represents the initial boring

investigation.

MS. READ: Yes, that is the one, I think.

MR. DECOULOS: And Exhibit B-21 is now up with Figure 4 being displayed.

MS. READ: Okay. It is Figure 4 in the same exhibit. Could you just zero in so we can read the boring locations?

MR. DECOULOS: Yes.

MS. READ: Thank you.

Q. So the soil borings upgradient from BP5RR did show some EPH impact, did they not, and those would be DCA and DCB?

A. You are correct.

Q. And they showed EPH fractions, correct?

A. They did.

Q. And EPH are the fractions associated with diesel fuel, correct?

A. Among other things, but yes.

Q. So the sum -- and the groundwater -- I am sorry. Strike that.

So there was some detection of EPH fractions upgradient in the locations that were very close to the storm drainage pipe,

correct?

A. As I said, you are correct.

Q. Okay. Looking at paragraph four, you discuss Mr. Decoulos's visual observations of the area of the storm drain pipe, the interior as well as the soil and vegetation in the area, and his opinion that the impacts at the outfall had been occurring for a relatively long period of time. And you state that, you quote his reports that state that the release to the brook appears historic. And I am looking here at Exhibit B-30. I am going to assume that we don't need to look at B-30 itself. I am really referring to your testimony and you're quoting Mr. Decoulos's words that the release appears historic and that, in his response to the complaint review team, he reiterated that opinion and stated that the wetland vegetation near the outfall appeared stressed for at least ten years. Is this -- these words are not your own opinion, correct? You are simply restating Mr. Decoulos's observations, is that right?

A. I am restating his observations, correct. Those are not my observations.
Q. Is it -- but it is true, is it not, that age dating of a release cannot be definitively performed by visual observation. Is that correct?
A. Certainly, correct. If you mean precise age dating, I totally agree.
Q. Is there any method for age dating a release based on visual observation?
A. This is a qualitative indicator. It is not a quantitative indicator. So if what I am discussing here is that his observations were that this was not a new release, when you compare it to the installation date of the remote fill line, which was a relatively recent thing, this appeared to Mr. Decoulos to be a longer term thing. So I am just citing that as one more line of evidence that supported his opinion.
Q. But to the extent that Mr. Decoulos's opinion relies on the age of the release at the outfall, it would not be reasonably careful or diligent LSP practice to rely

solely on visual observation of the conditions at the outfall to opine that it was an older, a release that is older than the equipment at the gas station. Correct?

A. Yes. If that was his sole line of evidence, I would, I would totally agree. But that is one of six.

Q. But I am speaking really simply only of the sub opinion, if you will, that the release at the outfall was older than the releases that were being investigated at the gas station. A visual observation would not be sufficient by itself to support that, that limited opinion about the age of the release at the outfall, correct?

A. Yes. If that is all he had to go on, that is not the basis for an opinion. You've got to combine that with other lines of evidence. That's the way LSP's, I think, have to do business because you are dealing with the unknown when you are dealing with the subsurface.

Q. And in fact, forensic techniques are used to age date a petroleum release, correct?

A. They are. And I argue that I would argue that those are, are of limited reliability on themselves.
Q. What are some of those techniques?
A. For age dating, well, you can talk about -- there is many different techniques. They have used chromatographic techniques where they take an analysis of the whole spectrum of compounds. Petroleum is comprised of hundreds of compounds and the more compounds you look at, the more you can tell about some compounds degrade faster than others. So if you have two different samples, you might be able to say, well, this looks older than this one because the more readily degradable compounds are gone from this sample but not from this sample. And really it is a whole field of, of different techniques that can be used. And it is hard to summarize very quickly, but there is many methods and some of them claim to be able to age date a petroleum product within a number of years. And I just think there is too many environmental

variables to really make that happen on a reliable basis.

Q. But a forensic technique would be more, somewhat more accurate at least than solely going by visual observation. Correct?

A. That is true. And you can always say you have more data. But I work for a lot of gas station owners who have one station, they have very limited funds and you have to work with, you have to work with what your client can fund. And that is the sort of the ugly reality that doesn't get talked about a lot is that sometimes you can't do all the stuff you want to do. You can't get all the information you want to get. Your client just simply cannot afford it, so you have to deal with what you can.

And if I was the LSP on this site and I had this much information, I would have to say that this came from the surface and not from the, and not from the diesel release underground.

Q. Going to your point about the resources available, the contamination at the outfall

and the high EPH numbers that are reflected in one of the tables to Exhibit B-21, the three million parts per billion result for total EPH, that sample was taken in June 2003. Correct?

A. I have May 2003, but --

Q. I am sorry.

A. Yes.

Q. I didn't mean to miss -- I certainly didn't mean to misrepresent. But it is in, yes, it is -- well, the Table 2 -- I am sorry. Yes, it is May 2003. And that was in the early stages of Mr. Decoulos's work, correct?

A. That is my understanding, yes.

Q. In paragraph five on page six of your testimony, an additional line of evidence that you discuss is the evidence of the storage and general operating practices at the Eagle Gas station during and prior to Mr. Badaoui's ownership. And you state that it provides an additional line of supporting evidence that surface sources were the likely cause. And you say they

were documented in photographs showing the oil stain in the areas and the storage of drums and numerous lawnmowers and other equipment on the property. And we have seen those photographs. I am happy to have them put up again if you need them.

MS. READ: Perhaps we could go -- I think they are the very first photographs other than perhaps the first one or two.

A. It says four, five, six and seven.

MS. READ: Okay.

MR. DECOULOS: Are these the photos that you are referring to?

MS. READ: Yes, thank you.

Q. It is not your testimony, is it, that surface leakage from small engine repair in 1997 would persist on the surface so as to cause the thick scum viewed at the outfall, the emulsion that you referred to earlier?

A. No, of course not. These lawnmowers are using gasoline, not diesel oil. It's just an indication of the practices at the location, not, not to say that these lawnmowers caused the impact at the

outfall.

Q. But at these, these, the lawnmowers were photographed, and again the practices that are documented by these photographs were in 1997, correct?

A. Yes. This photograph is from '97.

Q. And but it is not, it is not your testimony, is it, that housekeeping practices in 1997 would cause a runoff that would cause the thick emulsion that we were reviewing in the photographs from 2003, 2004 and 2005, is it?

A. I see your point. But it does go to the fact that Mr. Decoulos observed that this was a historic, a long-term thing, that it had been going on for a long, for a period of years. So it is consistent with that. I am not trying to say that, you know, something in that photograph was found at the outfall years later.

Q. All right. So there is no -- so I haven't heard testimony from you that there is a causal link between the conditions in those photographs and the conditions at the

outfall.

A. Right. It is an indication. Just like I can't tell you exactly how the sheen appeared in Catch Basin No. 4, I wasn't there. None of us knows how that got there, whether it was an undocumented spill or them cleaning out something, or somebody spilling a truck, a truck losing part of its, having a leaking tank or an overfill at the station. We don't know.

Q. In paragraph six you discuss the elevated concentration is of EPH fractions that were detected at the outfall. And you compared them to the lower EPH concentrations in samples from the drainage manhole.

First, as to the elevated EPH concentrations that are recorded in Table 3 of Exhibit B-21, those are not discussed in the text of any of Mr. Decoulos's submittals for this site, are they?

Well, first of all, let me start with Exhibit B-21, the report in which they were first reported. Are those results, those results are not discussed other than

to refer to them in the text of the report, is that correct?

A. I would have to look through the whole report to answer that question.

Q. Well, I will refer you to Section 4.2, the petroleum sheen observation at the South Meadow Brook, on pages 15 and 16 of Exhibit B-21. Do you see -- in looking over this text, there is no discussion in there of the EPH response numbers that were obtained at the outfall, correct?

(Witness perusing document.)

A. I am not seeing it. I could read through the whole thing, but I am not seeing it.

Q. As a practicing LSP, it wouldn't be your practice to leave such a significant analytical result out of the text of your evaluation, would it?

A. I tend to not repeat things that are in my tables in the text. I don't like to have redundancy. If you are saying that Mr. Decoulos didn't adequately discuss these results, well, you know, I -- I am not sure. You could be correct on that

but --

Q. Those are very significantly, significant numbers, aren't they?

A. They are significant numbers.

MR. DECOULOS: I am sorry. Excuse me, but are you talking about the EPH identified at the surface, on the surface water at the outfall?

MS. READ: Yes.

MR. DECOULOS: Thank you.

Q. Surely, EPH numbers of that concentration would require some evaluation?

A. Evaluation, well, they are presented in the report. It is not like they are not being disclosed. I don't -- I don't know what you are, exactly what you are looking for in terms of evaluation of those numbers.

Q. Isn't an LSP required to disclose and explain information that tends to contradict or substantially run counter to his or her opinion?

A. That is in the LSP regulations so you are correct.

Q. And in this report, Mr. Decoulos gives an

opinion at page 20 that it is clear from recent investigations, and I am quoting here, I am sorry, that the diesel delivery line failure has not caused the impact to the storm water system.

And you have testified that EPH fractions are associated with diesel fuel so wouldn't it be incumbent upon Mr. Decoulos to explain the significance of three million parts per billion EPH fractions in the surface water in relation to that opinion?

A. I don't think he is denying that that is there. He is just saying that there is no connection between the delivery line failure and the impact to the storm water system.

Q. But he hasn't explained that information as a factor in that opinion, has he?

A. You know, in hindsight, I think it could have been better explained.

Q. And in your Paragraph No. 6 you're discussing a comparison of those EPH results from May of 2003 to EPH

concentrations that were seen in samples from the drainage manhole and the EPH concentrations in the drainage manhole.

Do you recall what date those concentrations were obtained?

A. Those were later. But I hope you will also note that I am also comparing it to the soil concentrations taken along the drain line just a couple of weeks later. So if I had earlier data from the drainage manhole, I would have compared it to that. That is, to the best of my recollection, that is the only data that I had for drainage manhole. So yes, you are right. It is taken what, two years later roughly.

Q. Yes.

A. But that is --

Q. It was April 2000 --

A. But that is what I had, so I am not relying solely on that. I think it is more important or at least equally as important that when you look at the EPH fractions in those borings along the drain line, look how low they are. They are -- there is one

that is about 10,000. And I just fail to see how that is going to cause two million to appear at the outfall.

And in fact, it should be the other around. If you are going to see that kind of impact at the outfall, the soil, that soil has to be saturated with oil so that it is going to let free oil go into that storm drain line and then mix with the water that is in the storm drain line and cause that kind of impact at the outfall.

So to me, that is a strong indication that this is not responsible for what we are seeing at the, saw at the outfall.

Q. But it is true too, isn't it, that -- I mean, as we discussed earlier, the Drainage Manhole No. 2 is -- we don't know where it lies in relation to the fill port for the diesel fuel. Correct?

A. That is true. But it would have to be a pretty torturous path for the oil to take to sort of bypass the -- I am going to back up a little bit -- from the remote fill

line, you can see the groundwater flow would take things maybe to the northwest.

No. North is upper left. It would take it across the street and up to the right in the map that we are seeing.

Q. But the remote fill line runs for --

A. Thank you, Jim. So you see the arrow that shows direction of groundwater flow.

Q. Yes, I do.

A. Yes. And the remote fill line, sure, it runs for a long distance. But if you look at the groundwater flow direction, it should go from the fuel line in that direction, and we say it is going to intercept the bedding of the storm drain line, and we are just not seeing it in the storm drain line.

Maybe we need to refer to an earlier figure to see -- is it okay if I go up and point at Chalk 1 here?

DCW-2 was done at this same time, I believe, and we have EPH data from DCW-2 and that is not, that is not terribly elevated. So I don't see the --

Q. But again, DCW-2 is not upgradient, excuse me, downgradient of the entire length of the underground storage tanks and we do not know where the fill port was for the diesel remote fuel line. Correct?

A. Okay. So you are saying that maybe this took a path along the parallel to the street and then turned towards the other drain pipe. You know, maybe, maybe that is possible.

But that still doesn't explain what is seen in the catch basin the day that the impacts were discovered. And that's the thing that I just can't reconcile any other way.

Q. But you did -- I am speaking, I mean speaking solely of the PID readings, we determined that the catch basin and the drain manhole had essentially the same readings and that the catch basin is slightly uphill from the drain manhole. And I am sorry. I am referring to Catch Basin No. 4.

A. Number four?

Q. And Drain Manhole No. 2. Correct?
A. My, my quandary still stands. Even if this oil somehow took that path, how can there be a sheen in the catch basin and an equally high PID reading in the catch basin?

The catch basin is uphill. The catch basin had to be the route of entry of this stuff into the drain line. I just can't arrive at any other conclusion.

Q. Again, I am not -- I am speaking only of the PID reading.
A. Okay.
Q. And it was DEP's -- strike that.

Do you know what the depth to groundwater was at the manhole on the date of discovery of the contamination at the outfall?

A. Off the top of my head, I do not.

HEARINGS OFFICER: Are you testifying, Mr. Doherty, that it is your opinion that there is no other point of entry of what was observed at the outfall other than the catch basin? Is that your

testimony?

THE WITNESS: No. I am saying that I can't say that. I can't say that absolutely nothing gets in. We've got EPH right next to the drain line so there is contaminated soil right next to the drain line. But is it saturated with oil enough to cause that kind of impact at the outfall? I can't see it. I just cannot see it. And I am not saying that later on as this oil migrated that it eventually might not have gotten to the drain line. And as you -- from DCW-1, eventually, oil appeared in that well so it was going there.

But what I am saying is back in May and June '03, when this problem was discovered at the outfall, I don't see any other point of origination. Basically, you pull these six lines of evidence together, I don't see how else you can explain it.

HEARINGS OFFICER: You don't see any other point of origination other than the catch basin, other than Catch Basin No.

4?

THE WITNESS: I am not saying every molecule at the outfill is from Catch Basin No. 4. But I am saying that is where most of it was coming. That is where the sheen was traced to and that is where PID readings were traced to.

HEARINGS OFFICER: At Catch Basin No. 4?

THE WITNESS: Yes.

Q. But there were no soil borings taken between -- in May or June of 2003, between DCW-2 and DCW-3, correct?

A. If I could just look at this one more time.

Q. Sure.

A. I think you are correct but -- BP4 looks to be off the drain line a little bit, and I don't know when that was installed off the top of my head so --

HEARINGS OFFICER: I have a follow-up question, Mr. Doherty. Back to what I was asking you before, how have you ruled out other points of entry into the drain line?

THE WITNESS: You know, I don't -- I don't think I am really ruling them out. I am just looking at the trail of oil impacts upstream from the outfall. So I am not -- I am not -- there is no way I can say that nothing was getting into the storm drain line upgradient of Manhole No. 3. But when you look at the oil impacts, there is a trail. To me, it is the smoking gun that leads right to the surface, to the surface of the ground.

And you know, when I first looked at this site I was -- I was kind of skeptical. I didn't see how you could arrive at a conclusion that surface water impacts were causing this. I think DEP had the same, the same conclusion.

If you've got feet of product in a well near the drain line, well, how can it be from any other source? But I think when you look at all the other data, I think it shows that the only conclusion that makes sense is the one that Mr. Decoulos arrived at.

HEARINGS OFFICER: Okay. Go ahead.

MS. READ: Thank you.

Q. What techniques could be used, in your opinion, to find other points of entry into a storm drain line?

A. Yes. There is, there is certainly other things that could be done. There is always more things that could be done at a site, and a video survey is certainly one of those things.

Q. Have you ever been involved in sites that have used video surveys?

A. You know, I am trying to think of one. I don't think I have ever used it on a 21(e) site.

Q. Okay. You stated in paragraph, on page seven of your testimony that there was little evidence to support DEP's opinion or contention that the diesel oil was leaking into the, was the cause of the impacts at the outfall.

There was separate-phase product in Monitoring Well BP5RR, correct?

A. Correct.

Q. And there was gross contamination at the outfall, correct?
A. Correct.
Q. And Monitoring Well BP5RR is within ten feet of the storm drain line, according to Mr. Decoulos's site plans, correct?
A. I -- I could check that, but I guess I have no reason to dispute that.
Q. So it was reasonable for MassDEP to believe that there was a potential for the diesel NAPL in the BP5RR and the contamination at the outfall to be related, correct?
A. In fact, that was my first inclination as well.
Q. And MassDEP did require Mr. Decoulos to undertake sufficient assessment to explore that possibility, correct?
A. I -- you are probably correct. I can't recall an exact document when they said that, but that makes sense to me.
Q. But you -- strike that. I am handing you what has been marked Exhibit B-15, which is the Notice of Responsibility dated February 12, 2003, to Eagle Gas. And if you look at

page two, it requires him to inspect storm water drain system for potential impacts, correct?

A. That is correct.

Q. And to sample nearby private water supply wells and conduct air monitoring in buildings and utility man waste, correct?

A. Correct.

Q. So it was Mr. Decoulos's responsibility to test for vapors in the storm drain system according to, pursuant to that Notice of Responsibility?

A. That is correct. It says conduct air monitoring in utility man waste.

Q. And the Notice of Responsibility also required Mr. Decoulos, on page three, to submit a proposal for an active remediation system to address, among other things, we are looking at the third bullet point on page three, the last line of that bullet point, the recurring oil and hazardous material vapors in utility man waste. Correct?

A. Correct.

Q. As well as the accumulation of free-phase petroleum in on site and off site wells, correct?
A. That is what it says.
Q. On page seven of your testimony you discuss the fact, you give the opinion that the appearance of NAPL at DCW-1 in the second round of groundwater monitoring did not change your opinion, and you characterized the appearance of NAPL and DCW-1 as occurring long after its installation and that that indicated that NAPL, the diesel release was migrating slowly. Correct?
A. Yes.
Q. That is your opinion. But Mr. Decoulos -- and granted, no one is disputing the results. For purposes of this question, certainly, I am not disputing the results that were obtained from Monitoring Well DCW-1 in the first round of groundwater sampling. But as to the second round, that sampling was not conducted for 12 months, correct?
A. You know, I don't know that off the top of

my head, but I don't dispute that.
Q. I am sorry. Taking it as established on the record, and if necessary I can do that, that the second round of groundwater sampling was taken in June of 2004, there is no way to know between those two rounds of groundwater sampling when the NAPL appeared in Monitoring Well DCW-1. Correct?
A. You are correct. It would have been -- yes, based on this data, you can't tell exactly when in that year product first would have been detected in that well.
Q. And it could have been quite soon after the first round of groundwater sampling?
A. That is possible.
Q. On page eight you respond to a question about whether Mr. Decoulos was justified in differing with MassDEP's conclusion that active recovery, that an active product recovery trench was needed at the Eagle Gas site.
DEP did not specify that a trench was required at the Eagle Gas site, did

they?

A. You know, when I look at this, you may be correct on that and maybe that is not a well-worded question. So I -- I -- they did require active recovery. Whether or not they specified it as being a trench, I think you may be correct on that.

Q. I am sorry. Just returning momentarily to the issue of the appearance of NAPL in DCW-1, given that DCW-1, Mr. Decoulos represented that it was immediately adjacent to the storm water drainage system, and given that DEP had required Mr. Decoulos to inspect the storm water drainage system for impacts, and also if you look at the NOR, the Notice of Responsibility that was just handed to you, Exhibit B-15, that they required a proposal to install a monitoring well, monitoring well downgradient of the well containing NAPL, that would be 5RR, and that well should be sampled on a regularly scheduled basis, was it, was waiting one year to sample the groundwater and Well DCW-1 when

it was so close to the drain line, was that reasonable LSP practice and responsive to DEP's concerns?

A. I agree. It would have been preferable to have more data from that and data sooner than one year.

Q. And then I am sorry. Returning again to page eight of your testimony, you discuss the state, the evolving state of knowledge of the recoverability of NAPL.

A. Yes.

Q. MassDEP has not yet altered its standards for assessment and remediation of non-aqueous-phase liquid, have they?

A. They have not.

Q. And therefore, the standards applicable to Mr. Decoulos at the time that he did the work were the standards that are reflected in the MCP and in DEP guidance that was published until that time. Correct?

A. The standards didn't change. They are what they are, yes.

Q. And on page nine of your testimony you state that if the initial product -- excuse

me -- the initial recovery measures recommended by Mr. Decoulos had been approved by DEP in a timely manner, then that benefit to the environment would have been significantly greater than that realized from the operation of the system that was eventually implemented.

The initial recovery recommended by Mr. Decoulos was in his first IRA plan, correct?

A. I -- I will accept that. I would have to -- I have no basis to disagree with that statement.

Q. Okay.

MR. DECOULOS: Excuse me, Your Honor. I think it might be -- are you going to present him with that report just so he can verify it?

MS. READ: Yes.

MR. DECOULOS: Great. Thank you.

Q. I am showing you what has been marked as B-16, which is an IRA plan that is dated on the 17th of March 2003, by Mr. Decoulos. It is stamped as received by DEP on March

24, 2003.

It is true, isn't it, that the proposal in that plan is for a vacuuming of Well BP5RR, and if NAPL returned, to install a recovery well, a 12-inch recovery well and establish an active NAPL recovery system. Correct?

(Witness perusing document.)

A. It says, "If after the four-hour evacuation of NAPL, additional NAPL continues to infiltrate the well, a 12-inch recovery well with a sealed cast-iron manhole cover shall be installed."

Q. And the rest, the remainder of that paragraph proposes an active NAPL recovery system, as referred to in the second to last sentence of the paragraph. Correct?

(Witness perusing document.)

A. Correct.

Q. So that was Mr. Decoulos's initial proposal, correct?

A. I am assuming this is the initial IRA plan. I, frankly, can't remember.

Q. Well, the NOR that I handed you earlier was

dated in February 2003.
A. Okay.
Q. So and Mr. Decoulos himself departed from that plan, correct?
A. I am not convinced that he did.
Q. Well, his first IRA status report, I believe you have it there, is Exhibit B-21. And on page 20 of Exhibit B-21, it states that it does not appear productive or cost effective to install a recovery well. Correct?
A. Can you tell me where we are on page 20?
Q. We are on page 20, the first paragraph of Section 5.0.
A. Okay. "It does not appear productive or cost effective to install a recovery well." It says that.
Q. But it was your testimony on page nine that if the initial recovery measures recommended by Mr. Decoulos had been approved, the net benefit to the environment would have been significantly greater. And your testimony goes on to discuss exactly the IRA plan that we are

looking at, the March 17, 2003, Exhibit B-16. And you state that you believe this approach would have recovered a greater volume of separate-phase petroleum than the active trench located in the middle of Main Street.

A. I -- I admit I am confused about your questioning. Exactly what --

Q. Your testimony is that the initial system proposed by Mr. Decoulos would have recovered more, in your opinion, than the system that was eventually installed. Correct?

A. That is what I said. And now that I look at this, I am wondering if I, if I have worded it in a confusing manner.

The intent of what I wrote here was that if a system had been installed close to the point of release, which we knew was the remote fill line, and oil had started, oil recovery had started expediently, then that would have been a better thing to do than what actually happened for whatever reasons it happened

of IRA plans going back and forth and denials. Meanwhile, the product spreads out into new soils and becomes more difficult to recover.

So I see you are making a good point here that maybe I have not worded this correctly in my -- so I accept that.

HEARINGS OFFICER: I actually need to take a break at this point so why don't we come back in five minutes.

MS. READ: That is fine.

HEARINGS OFFICER: Okay. Sorry to interrupt that. I do want to come back to that question, though, when we come back.

MS. READ: Sure.

HEARINGS OFFICER: Okay.

(Brief recess.)

HEARINGS OFFICER: Back on the record. Mr. Decoulos, are you ready?

MR. DECOULOS: Yes, thank you.

HEARINGS OFFICER: Okay. We are back on record after a short break. Ms. Read, you can continue with your questioning.

MS. READ: Thank you.

Q. Mr. Doherty, we were discussing page nine of your testimony. And I was -- we were looking at Exhibit B-21, which is Mr. Decoulos's July 3, 2003, IRA status report, and its proposal to continue hand bailing NAPL from BP5RR, rather than to perform the active recovery that MassDEP had requested in the plan and that Mr. Decoulos had proposed.

First, I just want to note that if you look at page 15 of B-21, the third full paragraph, the third paragraph on the page, I am sorry, I am sorry, okay.

Looking at page 15, the last paragraph, well, Section 4.1, generally on that page, it describes the carrying out of the plan to vacuum Well BP5RR and observe what occurred after the vacuuming. And it states in the second to last paragraph, correct, that at approximately 2:15 p.m., Wright, being the contractor carrying out the vacuuming, left the site.

Also, I just want to point out

that the last paragraph points out that NAPL was observed at a thickness of 6.67 feet on May 14, 2003.

MR. DECOULOS: Can I interrupt you?

MS. READ: Yes.

MR. DECOULOS: Did you say page 15?

MS. READ: Page 13. I am sorry. I switched over to page 13.

MR. DECOULOS: Okay.

Q. So what I am getting at here is that the NAPL did return to Well BP5RR to a depth of 6.67 feet, after having been vacuumed. And yet, in the proposed response, Mr. Decoulos proposes to hand bail, to continue to hand bail the same well that was vacuumed and to -- and states that the results, that it does not appear productive to install a recovery well. So in that, so I point that out to you to say that Mr. Decoulos made the decision not to conduct the active recovery that had been proposed in his IRA plan.

So Mr. Decoulos, Mr. Decoulos's

hand bailing of BP5RR over the course of his work at this site did not prevent the migration of NAPL into DCW-1, correct?

A. I would have to say of course it didn't because it appeared there.

Q. And NAPL was continuously recovered from BP5RR, correct?

A. Continuously recovered, I don't think it was continuously recovered.

Q. Well, I would turn your attention to Exhibit B-33, which I am handing to you, which is a June 15, 2004 Status Report.

A. Okay.

Q. And that report recites that over the course of time until that report, 25 gallons of NAPL had been recovered by hand bailing Well BP5RR. Correct?

A. Are we on the first page?

Q. I am sorry. In having handed it to you, I am trying to find my own copy.

MR. DECOULOS: Are we still at B-21?

MS. READ: No. We are on B-33.

A. It is on the first page. I see it.

Q. Yes. Wouldn't it have been, isn't it your opinion that more NAPL would have been recovered from the well by active recovery than by passive hand bailing?
A. I am not comfortable making that opinion based on what I know about how oil behaves in the subsurface. I know that active recovery has traditionally been favored by DEP, but the state of knowledge was evolving at that time and it has evolved further since then. And the gist of it is that soil acts like a sponge for product and there is a lot of product that you will never get out of the soil, active or passive.
Q. But I am drawing your attention to actual recovery at this site from Well BP5RR and your own opinion here that if active recovery had been implemented as Mr. Decoulos proposed, the benefit to the environment would have been greater.
MR. DECOULOS: I object.
HEARINGS OFFICER: On what basis?
MR. DECOULOS: She said that I --

she is making a statement that I actively proposed to recover the NAPL, which I didn't do. I made, I made a proposal to recover NAPL in a passive manner with an alternative for active recovery.

MS. READ: In March 2000 -- the record speaks for itself what the proposal was.

HEARINGS OFFICER: Right. The record speaks for itself. And you can point to that later, if you wish.

MR. DECOULOS: All right.

Q. But it is your testimony on page nine that active recovery in the vicinity of Well BP5RR, downgradient of BP5RR would have recovered a greater volume of separate-phase product. First, your testimony is that it would have recovered a greater volume than the trench recovered, correct?

A. Well, I say if the initial recovery measures had been approved. And I -- I didn't say "active" up there, and I know later on I talk about this, this plan.

But as I said before, the initial recovery measures, my point is that if recovery had started earlier here, passive or active, it would have, it would have in my opinion been a better thing to do than all the haggling about defining the extent of the plume, designing what I call, I guess, the perfect system, instead of a system that gets in there, recovers some product, makes some progress, and if it needs to be tweaked later on then you tweak it later on.

In my experience, that is the way to do these things. The element of time is just so important and if you let the time go by, you get less product out of the ground.

Q. So if Mr. Decoulos had in fact installed the active recovery well that he first proposed in March of 2003, then he would have recovered more and had a greater benefit to the environment. Correct?

A. Well, as you say, the record speaks for itself, and what I saw in the record is a

lot of denials of proposals to recover product.

Q. But the March 17, 2003 proposal was not denied, was it?

A. No. I think you are correct on that, that it was presumptively approved. And I am -- I am relying on that. I think that is true.

Q. And Mr. Decoulos made a judgment that he would not follow his original proposal, correct?

A. Well, he proposed to --

Q. As reflected in his Exhibit B-21?

A. B-21, he proposed to remove product from the well; and if it didn't come back, if it did come back, sorry, he would go to an active system.

Q. And it did come back as recorded in Exhibit B-21, correct?

A. Well, it says it came back on May 14th, if I have got that right.

Q. That is correct.

A. So I think his IRA plan said if it didn't come back in a four-hour period. And you

know, whether he stayed the four hours, it is hard for me to tell from this IRA plan, IRA Status Report, Exhibit B-21. But the fact that it came back on May 14th, I don't see is a huge contradiction to the IRA plan.

Q. But it came back at a depth of 6.67 feet of NAPL, is that correct?

A. Yes. And I have seen a lot made of that. But an important thing to remember is these are one-inch diameter wells. And I have seen over and over again that when you have a small diameter well like a one-inch well, you are going to get a lot of oil in it. And I have drilled new wells in the exact location of one-inch wells and just put in a three or a four-inch well so I could recover some product. And low and behold, there is little or no product. And it is because the amount of oil you see in the well is a function of the well diameter. If you have a narrower well, it draws the oil from the ground up into the, into the well. It is a capillary action. It is --

I have seen it over and over again.

And so yes, there is 6.67 feet in that one-inch diameter well. But to me, that is not the same as anywhere near the same as 6.67 feet in a two inch or three-inch diameter well.

Q. I understand what you are saying about the volume. But the amount of NAPL that was found on May 14, 2003, was more than the amount of NAPL that was, that triggered the notification, correct, which was ten inches?

A. Which was ten inches, you are correct.

Q. In the same well?

A. Yes, you are correct.

Q. Referring to page ten of your testimony, you discussed Mr. Decoulos's imminent hazard evaluation. And on page 11 of your testimony you state that it was Mr. Decoulos's diligence that led him to investigate and discover the contamination at the outfall.

Wasn't Mr. Decoulos's inspection of the storm drain system a required part

of his Immediate Response Action?

(Witness perusing document.)

A. You know, you may be correct there. You showed me the NOR. So I may -- I may stand corrected on that, that it was a requirement of DEP.

MS. READ: I think that is all the questions that I have for Mr. Doherty.

HEARINGS OFFICER: Okay. Mr. Decoulos, do you have any redirect?

MR. DECOULOS: Yes. Thank you.

HEARINGS OFFICER: Very brief, Mr. Decoulos.

MR. DECOULOS: Yes.

HEARINGS OFFICER: How long do you think you will be, Mr. Decoulos?

MR. DECOULOS: Five to ten minutes.

HEARINGS OFFICER: Five minutes.

MR. DECOULOS: Okay. Some important points I would like to make.

HEARINGS OFFICER: Oh, I understand. But redirect is much different from cross examination.

MR. DECOULOS: I understand. It is

limited to what she crossed. I understand.

HEARINGS OFFICER: Right. Well, I don't even have to allow it.

MR. DECOULOS: Okay.

HEARINGS OFFICER: It is very very limited.

MR. DECOULOS: Okay.

HEARINGS OFFICER: Okay.

REDIRECT EXAMINATION

BY MR. DECOULOS:

Q. Mr. Doherty, Ms. Read had talked about the contamination at the outfall and she showed you some pictures where she had asked you to interpret the -- what did she refer to it as?

A. The emulsion.

Q. The emulsion. Thank you. And asked you to try to speculate about how that emulsion originated.

Are you aware that downstream of South Meadow Brook that there are cranberry bogs?

A. I have heard that mentioned, yes.

Q. Are you aware that cranberry bogs are

intentionally flooded by those cranberry bog owners in order to improve the harvest of their cranberries?

A. I have heard that mentioned, yes.

Q. Are you aware that South Meadow Brook can be artificially, the surface water elevations of South Meadow Brook can be artificially raised as a result of those downgradient cranberry bog floodings?

A. That makes sense.

Q. If that occurred, do you think that some of the outfall contamination could back up into the piping?

MS. READ: Excuse me. I object to this line of questioning as it is nothing that has ever been referred to in any of Mr. Decoulos's submittals.

HEARINGS OFFICER: Yes. And Mr. Doherty, I don't want you to testify yes or no if you don't know. You said "that makes sense" to Mr. Decoulos. Do you know of this?

THE WITNESS: I honestly --

HEARINGS OFFICER: Do you know

about what he is talking to you about or are you just going along with what he is suggesting?

THE WITNESS: I have heard that there are cranberry bogs downstream. I have heard that they flood, they raise the level. So I have heard that.

HEARINGS OFFICER: But you have no idea how far upstream the level is raised, correct?

THE WITNESS: I don't.

HEARINGS OFFICER: Okay. Okay. And as to Ms. Read's objection, how does this pertain to the scope of her cross examination?

MR. DECOULOS: She was talking about the emulsion and the interior of the piping and how the emulsion continued in to the interior of the piping. And from the photographs, it is clear that there is obvious staining and some significant --

MS. READ: I don't believe I ever asked a question about the emulsion continuing into the piping.

HEARINGS OFFICER: But where is the --

MR. DECOULOS: Okay. I am done. I am done.

HEARINGS OFFICER: There needs to be evidence in the record regarding about what you are talking about.

MR. DECOULOS: Okay. I am all done with that.

HEARINGS OFFICER: Okay.

Q. Mr. Doherty, Ms. Read talked about she presented you with the soil data from the IRA Status Report in June of 2003 and asked you about -- actually, it was July 3, 2003. It was Exhibit B-21. And she asked you if that soil data included soil from DCW-1. Is that correct?

A. I believe it is.

Q. If there was diesel product in DCW-1, wouldn't you see it in the groundwater analytical results on the next table?

(Witness perusing document.)

A. You would see it when you gauged the Well DCW-1. And the EPH in DCW-1 is essentially

none. It meets the Drinking Water Standards.

Q. So if there was EPH in the soil, do you think it would reveal itself in the groundwater?

A. You would see, you would see it in the groundwater.

Q. And Ms. Read asked you about the lawnmowers and what types of product they stored.

Do you know if lawnmowers use lubricating oil?

A. Of course they do.

Q. Two or three more questions. She talked, Ms. Read talked about the remote fill line and the possibility of that remote fill line extending to the south in the area where the underground storage tanks are.

I am looking at Exhibit B-30, and the three 5,000 gallon underground storage tanks that are identified. I would also like to direct your attention to Exhibit B-41.

HEARINGS OFFICER: Can you specify what figures you are talking about for

purposes of the record?

MR. DECOULOS: Sure. This is figure, this is the site plan in Exhibit B-30, Sheet No. 1, which is in Appendix B.

Q. But what I would like to do also is direct your attention to Exhibit B-41 and Figure 1 where I identified the extent, the approximate extent of the diesel NAPL.

Now, based on the groundwater flow at this site and the first indication of diesel NAPL at BP5RR, where would you expect the remote fill line to fail?

A. It would have to be somewhere upgradient of BP5RR.

Q. So is it correct to assume that that would be somewhere between BP5RR and the two 1,000 gallon steel UST's abandoned in place as shown on Sheet 1?

A. Well, if you look at that, the flow direction arrow, that roughly makes sense.

Q. And approximately where the arrow ends with the label "remote diesel fill pipe abandoned in place", is that an approximate location as to where a failure would

logically occur?

A. Yes, approximately.

Q. Would it, would you expect the diesel NAPL extent to be away from, to be anywhere cross gradient of the remote diesel fill line failure? Would it be expected to be upgradient?

A. No. And I see your point that it really wouldn't be down by the gasoline tanks and then appear in BP5RR.

Q. In the IRA Status Report, Exhibit B-21, on page 13, Ms. Read was questioning you about the 6.6 feet of NAPL that returned to BP5RR after the vacuuming evacuation.

Why did I use the term "apparent thickness"?

A. Well, when I use the term --

MS. READ: Objection. He is asking his, Mr. Doherty, a question about his own --

HEARINGS OFFICER: Yes. Sustained.

MR. DECOULOS: Okay.

Q. Mr. Doherty, you were talking about capillary action in small diameter wells.

Is that a phenomenon that most LSP's understand?

A. I think so. I hope so.

Q. Now, last question. In the Notice of Responsibility that was issued for the first tracking number 17582, Ms. Read discussed how the Department had asked for me to evaluate or for the PRP to evaluate the storm water collection system.

Why would an LSP look beyond DMH-2 if he identified zero or to 0.5 parts per million, what would lead an LSP to look any more downgradient of that collection system?

MS. READ: Objection.

HEARINGS OFFICER: What was the question again, Mr. Decoulos?

Q. What would cause an LSP to inspect the storm water collection system further down gradient of DMH-2 if you've only got a response of 0.5 PPM?

HEARINGS OFFICER: Do you understand the question, Mr. Doherty?

THE WITNESS: I think so.

MS. READ: I object on the grounds that the inspection occurred of the area downgradient from DMH-2, before the PID reading was obtained.

Q. But if I had followed, Mr. Doherty, DEP's instruction to simply screen the manholes and the structures of the storm water collection system in the vicinity of the Eagle Gas site, why would I be looking at the outfall and to South Meadow Brook? Is that, is that an action that a normal LSP would be expected to take?

A. Help me out here. If -- I am not understanding the question. So DEP is requiring you to look at utility man waste. You look at the one in front of the building and you get 0.5.

Would I be alarmed by 0.5 from a manhole? No.

Q. But the other structures in front of the gas station were DMH-1, CB-1, CB-2; these were all in the immediate frontage of the gas station property?

A. Mm-hmm.

Q. And the release at BP5RR was in the middle. So why would a normal LSP look any further beyond those property boundaries if the downgradient point is only indicating 0.5 PPM?

A. Yes, I see what you're saying.

MS. READ: Again, I object on the same grounds.

HEARINGS OFFICER: But that is also not the facts of the case, so why are you asking the question?

MR. DECOULOS: Well, because the issues in this case relate to what a normal LSP would do and the professional standards that are being challenged of my work.

HEARINGS OFFICER: Well, I understand that. But that is not what -- you are misrepresenting the facts of the case. The facts are not that it was just 0.5 PPM there. There were also higher readings downgradient. So if you are going to ask the question, you need to incorporate the other readings, correct?

MR. DECOULOS: No. What I am

trying to get at, Mr. Jones, is --

HEARINGS OFFICER: Okay. Ask the question, Mr. Decoulos. I am not following your question. Go ahead and ask the question.

MR. DECOULOS: Okay.

Q. What storm --

HEARINGS OFFICER: Do you understand the question, Mr. Doherty?

THE WITNESS: I think I do, yes. And to me, the question is you've got product at this well.

HEARINGS OFFICER: Which is what well?

THE WITNESS: BP5RR, and you want to investigate if it has gotten to the storm drain. You look at the first downgradient manhole, you see 0.5 parts per million. An LSP could say, Well, I'm done, the downgradient manhole is fine, there is no --

MS. READ: Again, I object because the PID reading was found after the sheen was discovered on the brook. And so I

don't object to some of the foundations of the question in terms of LSP practice, but I would like it to be cast in the correct factual context.

MR. DECOULOS: Okay.

HEARINGS OFFICER: Do you have any more questions, Mr. Decoulos?

MR. DECOULOS: Well, yes.

Q. I think I asked this question but I am just trying to help frame this a little better.

Why would an LSP look at the storm water outfall if he is trying to identify what pathway the NAPL in BP5RR could have taken?

A. Why would an LSP look at the outfall? I -- tell me if this answers the question. But I think an LSP could make an argument that in the hypothetical situation that there was no other PID readings before the fact, that I am going to look at this downgradient manhole, find 0.5 PPM and say I'm done. I could see an LSP doing that.

Whether that is the best practice, I would probably say no because you've got

surface water runoff going down to the next catch basin, which is a non-MCP issue, I agree. So I could see somebody making that conclusion.

MR. DECOULOS: I have no further questions. Thank you.

HEARINGS OFFICER: Thank you, Mr. Doherty.

THE WITNESS: Thank you.

MR. DECOULOS: Mr. Jones, I have one more question if you will allow me to --

HEARINGS OFFICER: No. Thank you, Mr. Doherty.

MS. READ: Thank you, Mr. Doherty.

THE WITNESS: Jim, this is yours.

MR. DECOULOS: Thank you, Rich.

MS. READ: Thank you.

THE WITNESS: I think these lab reports are part of B-16.

MR. DECOULOS: Thank you. I will get them back in the right place. Thank you.

(Witness excused.)

HEARINGS OFFICER: Mr. Decoulos, do you want to call your next witness?

MR. DECOULOS: Paul Wright, please.

HEARINGS OFFICER: Would you please state your name for the record.

THE WITNESS: Paul B. Wright.

HEARINGS OFFICER: And do you promise to tell the truth, the whole truth and nothing but the truth?

THE WITNESS: Yes, I do. I apologize for my dress.

HEARINGS OFFICER: No problem. Mr. Decoulos.

PAUL B. WRIGHT,

DIRECT EXAMINATION

BY MR. DECOULOS:

Q. Mr. Write, do you agree that Exhibit R-4 is your direct testimony in this matter?

A. Yes.

Q. And do you adopt this testimony as your truthful responses to the questions that were presented to you?

A. Yes.

MR. DECOULOS: No further

questions.

HEARINGS OFFICER: Okay. Ms. Read.

CROSS EXAMINATION

BY MS. READ:

Q. Good afternoon, Mr. Wright.

A. Good afternoon.

Q. You do substantial work in the area -- strike that.

According to your resume which is Exhibit R-5, you do work in the area of hazardous waste remediation, correct?

A. Mm-hmm.

Q. And are you familiar with the regulations for hazardous waste site cleanup known as the Massachusetts Contingency Plan or MCP?

A. I am fairly familiar with them.

Q. And some cleanup activities require prior approval by MassDEP, is that correct?

A. Yes.

Q. Are you aware that Immediate Response Actions require prior approval by MassDEP?

A. Yes. I believe they do, yes, response actions.

Q. And in particular, Immediate Response

Actions?

A. It depends on the release of the, you know, the spill, obviously.

Q. Okay. On page three of your testimony you state that you have managed some video surveys of utilities.

A. Yes, I have.

Q. Were those performed by your own company or by another --

A. No, by another company.

Q. So when you say you have managed them, could you just describe, please, your involvement?

A. Okay. Simply, as a hazardous waste site or a spill, I should say, in Marblehead I had a spill. Jim wasn't the LSP, there was another LSP. But there was another LSP on site which I had another drill rig which ended up doing borings, ended up going through a sewer line. So I hired the inspector to come out and then we set up a plan to seal that, the sewer pipe up where that boring went through. That's one example.

Q. And you used video equipment to assist in that process?

A. Yes, yes. We used a video camera to go in and then we figured out where the hole was. Actually, you could see the drill rig go through. And we watched the drill rig come out and we stopped it so we didn't collapse the bottom of the pipe or the top of the pipe, because in order to pull out the drill rig, the camera was watching the drill, and when the drill come up we didn't pull it all the way out so it did not collapse any dirt into the pipe.

At that point we set up a balloon inside the drain pipe so that when the drill come out, we inserted that in to keep the pipe intact. As the pipe stayed intact, we pulled the drill out, inserted a pipe down, and injected hydraulic cement around the pipe, left the balloon intact until the cement set, all on video camera while we are doing this.

Then the next day we went back, deflated the balloon, and watched to see if

everything stayed intact and then extracted it and put the sewer line into action.

Q. And your testimony says you've managed approximately four videos?

A. Yes.

Q. Have you ever done video surveys of a length of underground utility --

A. Yes.

Q. -- pipe?

A. Yes. We've done drainage lines. Actually, it was underneath a building. It was in Gloucester, Massachusetts. It had broken under the building but we didn't know where, so we started out in the sewer manhole and approximately went about 250 feet in to find the break. At that point it was broken so bad that it had to be excavated and fixed. But that's how we did that.

Q. Mm-hmm. And again, were you conducting the video survey with your own company's equipment or was it --

A. No. I had an advanced pipe inspection who had done some of it. I have actually used

some sewer companies that have their own cameras too. So it is depends on the application of where I am using them.

Q. The instance that you just referred to, you said that the video survey was able to locate the area of the pipe break?

A. Yes. If you, if you've done one --

Q. Mm-hmm?

A. What there is, like a video, like a TV on the side. And as the camera goes through, you can actually see how it goes through the pipe and you can see if it comes out of the water into dips or obstructions, whether it is a rock or a break. And I've seen that, whatever may have fallen in the pipe or has gotten clogged in the pipe.

Q. And you have a 360-degree view of the pipe?

A. Mm-hmm. Correct. Yes, you do. On the cameras I've used, you have.

Q. Mm-hmm. And in that last instance do you know what the amount charged was for the video survey of that pipe?

A. I passed the cost on to the company. I try to do that a lot so there wouldn't be an

increase. I think the cost was around $1,700 for that. That was a four-inch pipe too so it's a little different type of camera going in.

Q. How was -- just how was it different from what would be used for a larger pipe?

A. A larger pipe, they have so much of a run with the cable so they would have to knot cut the cable, break it, add cable to it and stuff, which is time consuming. Most of it can run 300 feet. So 300 feet, the camera could run and then you would have to break it and add on to it to, say, another 300 feet.

Q. And what is your memory of the length of the pipe that Mr. Decoulos, you testified that Mr. Decoulos had ordered?

A. You are asking me the length from the outfall to what point or from what point to what point?

Q. I am just asking you in general for your memory of the approximate length of the video survey that Mr. Decoulos requested from you.

A. Well, I am going to say it was probably about 700 feet.
Q. Okay.
A. And that would be just a guess.
Q. Mm-hmm. Okay.
A. Right at this point I don't remember.
Q. Okay. On pages beginning on page five of your testimony, well, on page five of your testimony you state that you managed the construction of a groundwater interceptor trench on December 16th and 17th, 2004.

Can you tell me at what time did you arrange -- well, first of all, were you aware that the inceptor trench was proposed by Mr. Decoulos as an Immediate Response Action to remedy a diesel release at Eagle Gas?
A. I am not sure of that right now.
Q. What was your understanding of the reason for constructing that?
A. I know it was to, to recover anything that was coming from the gas station and extract it back out of the ground.
Q. But as the trench was constructed, it was

on the opposite side of the storm drain pipe from the gas station. Correct?
A. Correct.
Q. So it wasn't, in that case it wasn't intended then to recover the contamination, correct?
A. My understanding, initially, it was going to go on the inside towards the gas station, this trench was, and it got changed. My understanding, talking to Jim as the project was going on, that DEP decided to have it put on the outside. And I did stress my point to Jim, just putting it out in the road, how much more dangerous that is, and that it's taking, if you do a cone effect where you've got a pump or the interceptor trench sucking groundwater, it sucks to it. We are going to the other side of the pipe, so what we will be doing is pulling that product through that pipe, which I did stress that and I know that we talked about it that it wouldn't be the best idea to do that.
Q. So were you involved when Mr. Decoulos

first with a proposal to construct the trench on the interior of the pipe?

A. Preliminarily, yes, than what he was going back and forth with the DEP. So I wasn't really involved with the whole end of it. Just more or less he was asking me about pricing and where it was going. Obviously, he was asking me questions like if there was utility lines overhead or utilities underground, and I was doing my little investigation work because I would be doing the work, what would be the most obstacles in the way and not in the way. And kind of I think he was feeling out the best place to put it from my perspective.

Q. But you are not licensed as an LSP, correct?

A. Correct.

Q. In December of 2004, when the trench was ultimately constructed, when did you arrange the staging of your equipment, on what date to the best of your knowledge did you arrange the staging of your equipment with Mr. Decoulos?

A. I was -- I thought we did the trench, like I stated here, the 17th, which -- or 16th or 17th. So probably staging the equipment a week before that, maybe not quite that. It depends. I don't know what the 16th and 17th fell on for a day. If it was a Monday, I might have staged it on a Friday or a Thursday. If it was the end of the week, I might have staged it on a Monday or a Tuesday, depending. Because you're into the winter, so I try to run my equipment over the road when it's good weather.

Q. So you would stage the equipment a week in advance?

A. It could be, it could be. I can explain right now that I've got a job in Ipswich that I put equipment on it a month ago for spring work. Just for the fact it's heavy equipment and if I bring it over the road in the spring, I could tear up the road, things like that, and then it is just more cost to me.

Q. Okay. So if you are -- does the staging of your equipment involve a charge to the

client?

A. Yes. Mobe and demobe usually. It all depends if I'm on a job and it's held up for whatever reason and I have a chance to go to another job, I usually don't charge them to take it off and bring it back. That will go on the other job. I go back on the job not charging them; but at the end of the job, if it starts up again like at the end of the week, I will charge to take it off.

Q. So that if DEP had been informed that the demobilization of the construction equipment would cost Eagle Gas client money, that would be incorrect?

A. If you are talking about the interceptor trench, the equipment wouldn't have been moved there until it was ready to be done. Whether it was the first trench or second trench, you know, it wouldn't have been moved there and waited for two months for that trench never to happen and this one to come about.

Q. Well, that's my question to you. When was

the equipment moved there?
A. When the approval was for that trench to happen, it would have been maybe a week before or two days before. I don't remember. I could probably look that up on my records and find out exactly.
Q. And are you aware that at 4:30 on the 15th of December, Mr. Decoulos received a denial of his proposal to construct that trench?
A. I don't remember.
Q. And during the construction of the trench, the trench walls collapsed, correct?
A. One side collapsed a little bit.
Q. Was there shoring in the trench?
A. No, there was not.
Q. Were there any -- was there any support for the trench walls?
A. For the time restraints, we were trying to get it as fast as we could. We did have basically nothing in there. Just we lowered the sheathing down and put the stone in and we put the pipes together, put it in there and went. We did lose it after the pipes and everything were already in,

we lost a little section of it and then we slurry filled the rest of the hole up.

Q. So if more time had been taken to construct the trench and add shoring, that collapse wouldn't have occurred, correct?

A. I couldn't say that. I've seen shoring with collapse -- I mean I've seen collapsing with shoring.

Q. But this trench was constructed, as I -- strike that.

MS. READ: I don't think I have any further questions.

HEARINGS OFFICER: Mr. Decoulos.

MR. DECOULOS: I have two questions.

REDIRECT EXAMINATION

BY MR. DECOULOS:

Q. Mr. Wright, is it normal for an LSP or an engineer to ask a contractor for design suggestions before a proposal is made to a reviewing agency?

A. It's very normal.

Q. Is it considered good practice by the engineer or an LSP?

A. I think it is and I think they do too.
Q. Did you order and receive shoring for the trench construction at the Eagle Gas site?
A. Yes, and I had it on site.
Q. And why didn't you use the shoring?
A. Time constraints. We just didn't have enough time in the day to get what needed to be done and we were just -- the vertical walls were standing right up. I mean we got the piping in the bottom, the stone in, the barrier in, and just a little bit collapsed.

MR. DECOULOS: No further questions.

HEARINGS OFFICER: Okay. Thank you, Mr. Wright.

THE WITNESS: Can I make a final statement of my own, a mechanical statement on the gas pumps?

HEARINGS OFFICER: Sure.

THE WITNESS: Does anybody object to that?

HEARINGS OFFICER: No.

THE WITNESS: On the 10th when

there was a diesel spill --

MR. DECOULOS: Can we clarify? December 10, 2004?

THE WITNESS: Yes. I am sorry. I don't have dates prior to that. But I did see two gasoline spills. And I just want to make note that when each nozzle fell out of the cars that were being fueled, when they fell on the ground they did not spill much fuel because, due to vapor recovery nozzles, as soon as they come out they do shut off.

But the day that the diesel fuel fell out of the truck, diesel fuels don't have that ability and when it falls on the ground and then you hear the attendant screaming, you have a fair amount of fuel that spills.

The other note I want to make is --

HEARINGS OFFICER: Did you observe the diesel fuel spill?

THE WITNESS: I helped clean it up. Well, after he was yelling, I realized

what was going on there as I was there doing another job.

HEARINGS OFFICER: Do you know how much diesel fuel spilled?

THE WITNESS: It was raining out. I couldn't tell you. It was a fair amount. I couldn't tell you how much. The other statement is the fill pipe for the tank, just as my experience, it is gravity drop and that is a conduit. Usually, putting coarse sand or pea gravel, and that would be gravity from I would say the south side of the gas station towards the north side where the tank was, that pipe would have gravity fed to that tank. So how ever bad that pipe broke, it would have had a conduit back to the other tank and have been further upgradient, which never showed, would be my opinion.

The other opinion, on the drain pipe, back when the practices when that was put in, it was probably the same natural soil went back in around that pipe so it would be hard to tell if you drilled next

to it to see a break in different material.

And the last note is in the outfall, I could clean up the booms and the pads and not see anything there other than the heavy staining in the soil and come back and not see nothing, and the next time come back and it would have that, basically, film layer which looked to me like a bacteria growing on a fuel oil.

That's it. Thank you very much for your time.

HEARINGS OFFICER: Okay.

MR. DECOULOS: Thank you, Mr. Wright.

HEARINGS OFFICER: Thank you, Mr. Wright.

THE WITNESS: Thank you.

MS. READ: Thank you.

HEARINGS OFFICER: Thank you.

(Witness excused.)

HEARINGS OFFICER: Ms. Read, do you want to examine Mr. Decoulos now or shall we come back another day? How do you wish to handle that?

MS. READ: I could begin, but I don't know, I don't believe that I would finish and so it might be wise to restrict it to another time. Although, ultimately, it may not end up taking all that long, but so but I can't say that I would finish today.

HEARINGS OFFICER: Mm-hmm.

MS. READ: Certainly, there is a fair amount of material to go over, although, you know, I would try to restrict myself to the main points.

HEARINGS OFFICER: Mm-hmm.

MS. READ: I guess I would be --

HEARINGS OFFICER: Well, it's your choice because, you know, I allowed Mr. Decoulos to go far beyond what we had talked about and so I am more than happy to come back another day if you wish. So it is your -- I am going to leave the decision up to you, whether you want to do it now or come back another day. I am more than happy to do --

MS. READ: If we start now and are

unable to finish by about five, would that also work?

HEARINGS OFFICER: That is fine. Well, do you expect that you would be able to finish in 35 minutes?

MS. READ: Probably not, in truth.

HEARINGS OFFICER: Do you want to try to go until 5:30? I mean, again, I am just throwing this out there. It's up to you.

MS. READ: Well, I guess I do think that I would be unlikely to finish in time. And given how you said that, for your planning purposes, I certainly don't think that we are even looking at a half a day, but we might be looking at an hour and a half or it could end up just being an hour and 15 or something like that.

HEARINGS OFFICER: Mm-hmm.

MS. READ: I would hope to be expeditious, but certainly not out by five o'clock.

HEARINGS OFFICER: Right. Well, why don't we, why don't we stop today and

we will pick it up another day. When I get back to my officer tomorrow morning, I will look at my calendar and provide both parties with some dates on which I am available within the next week or two and we will conclude on one of those dates.

MR. DECOULOS: Can we throw out some dates where we may not be available to you?

HEARINGS OFFICER: Well, why don't you just initiate it by e-mail tomorrow.

MR. DECOULOS: Okay.

HEARINGS OFFICER: I think that is the best way to do it. I don't have my calendar here. Does that sound okay with you, Ms. Read?

MS. READ: Yes. I guess I am a little -- if I could just have a moment to look at my cross examination notes and determine whether it is conceivable that we could finish today.

HEARINGS OFFICER: Sure. I mean my thinking is if you reasonably believe that you could finish by, I don't know, 5:30,

5:45. Otherwise, why don't we finish right now, end right now.

MS. READ: Yes. That is fine.

HEARINGS OFFICER: And come back for another day.

MS. READ: That is fine.

HEARINGS OFFICER: Okay. And maybe not even a day, a couple hours.

MS. READ: Oh, yes. I really think a half a day maximum and probably not that much.

HEARINGS OFFICER: Okay. All right. Mr. Decoulos?

MR. DECOULOS: I am fine with that. Thank you.

HEARINGS OFFICER: All right with you. Okay. So we will conclude today. I will communicate by e-mail tomorrow with you as to some possible dates and we will set up another day when we can finish it up in the next week or two.

MS. READ: In the next week or two, that would be great.

HEARINGS OFFICER: Yes, that is

what I am thinking. I don't want to drag it out. I want to finish it either next week or, at the outside, the week after. But I would like to do it sometime next week.

MS. READ: That would be great.

HEARINGS OFFICER: Okay. Anything else?

MR. DECOULOS: No.

HEARINGS OFFICER: Okay.

(At which time the matter was suspended at 4:30 p.m.)

C E R T I F I C A T E

I, Carol A. Fierimonte, Certified Shorthand Reporter and Notary Public in and for the Commonwealth of Massachusetts, do hereby certify that the foregoing transcript is a true and accurate transcription of the proceedings taken before me, to the best of my knowledge, skill and ability.

DATED this 16th day of February, 2011, at Westwood, Massachusetts.

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Carol A. Fierimonte