LEONARD RYAN, individually and as Plaintiff ad litem for NANCY RYAN, deceased	*	IN THE CIRCUIT COURT FOR JACKSON COUNTY, MISSOURI AT INDEPENDENCE	
Plaintiff,	*		
vs.	*		
BP CORPORATION NORTH AMERICA, INC., et al	*	Case No.: CV 223271	
Defendants	*		

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Pursuant to Notice, the deposition of John Spencer was taken on Tuesday, July 19, 2005, commencing at 1:05 p.m. at the BWI Marriott, 1743 West Nursery Road, Linthicum, Maryland 21090 before Kimberly A. Bradley, Notary Public.

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VIDEOGRAPHER: Here marks the beginning of the deposition of John Spencer taken by counsel for the Plaintiff in the matter of Leonard Ryan versus BP Corporation North America Inc., et al. in the Circuit Court of Jackson County, Missouri at Independence. This is Case No. CV 223271. This deposition is being held in the offices of the BWI Marriot located at 1743 West Nursery Road in Baltimore, Maryland on this date, July 19, 2005, at the time indicated on the video screen 13:08:37. My name is Michael Leutbecker. I'm a legal video specialist. The court reporter today is Kim Bradley. We are employed by Atkinson-Baker. Counsel will now introduce themselves and the parties they represent, after which the court reporter will administer the oath.

MR. WALTERS: Lon Walters and Anne Schiavone for the Plaintiffs.

MS. MCELDOWNEY: Catherine McEldowney on behalf of the Defendants.

JOHN SPENCER,

the Witness, having been called for examination by counsel for the Plaintiff, and after having been duly sworn according to law was examined and testified as follows:

EXAMINATION

BY MR. WALTERS:

Q. Would you state your name please for the record?

A. John Spencer.

Q. And Mr. Spencer, you understand you've been identified as an expert in the case of Ryan versus BP?

A Yes.

Q. And you're, as I understand it, prepared to give your opinions today, having reviewed materials in this case?

A Yes.

Q. I note that you've brought two boxes of materials with you. Does that include the materials that you've reviewed and relied on in formulating your opinions?

A. As specifically relates to this case, yes.

Q. Correct. And I'm not talking about any sort of institutional knowledge that you may have relied on but, is there anything other than what you have brought with you today that you have relied on specifically for this case?

A. No.

Q. And I briefly went through the boxes to see if I could tell if there were any handwritten notes that you might

have made with anything and I didn't see any handwritten notes. Is there any notes that you've made in connection with this case?

A Yes they were typed.

Q. Okay. And did you make any reports for this case?

A No.

Q. The notes that you made that were typed, where would those be?

A. It's those notes that you have currently in your hand and, in most of what's in the blue folder, the deposition summaries.

Q. Okay. I think that's another folder. I've marked as Exhibit 1, is this an example of something that you've made some notes on and would that be in the right hand column under EPI comments?

(EXHIBIT 1 WAS MARKED FOR IDENTIFICATION.)

A Well, all of these, everything that's typed here, yes, that would be the case.

Q. So, the folder that has the deposition summaries in it, and it maybe I just didn't look at them closely enough, those would contain comments by you on the right-hand column?

A. No, no, no. There's no comments. That's just a summary of information as derived from the depositions.

Q. Okay. Could you pull out for me then, if you would, the folder where you believe comments that you've made would be.

MS. MCELDOWNEY: You mean the dep summaries?

A. The deposition summaries?

Q. Correct. I misunderstood. I thought the deposition summaries were simply you saying, okay, on page this page number, this witness said this without comment.

A. That is correct.

Q. That is correct?

A. Yes.

Q. So, there is no comment, opinion, notes that you may have made?

A Correct.

Q. All right. What, exactly, is Exhibit 1 because I did note you did have a comment with this summary?

A This was looking at Mr. Petty's report and simply commenting. It's just notes that were typed that I looked at in dealing with his report, comments that I made regarding his

report.

Q. Is that the only comments that you committed to writing abut his report, Mr. Petty's report?

A Yes.

Q. Is there any notes that you committed to writing after reading any of the other expert reports?

A No.

Q. I'm going to mark this folder here as Exhibit 2, which is a blue folder marked, correspondence, and it has some pages in it, some correspondence and your Billing. Could you tell me, for the record, if this includes all the correspondence you've received from Maron and Marvel?

(EXHIBIT 2 WAS MARKED FOR IDENTIFICATION.)

A Well, that was the purpose of this folder. It is my understanding that was all the correspondence, yes.

Q. Right. And your billing invoice is in there, correct?

A. Yes.

Q. Is this the sum total of the billing that you've done to date to on this case?

A It would not include work that I have done in July.

That was up to the end of June.

Q. And what work did you do in July?

Q. Further review of depositions, preparation for this deposition by re-reviewing many of he materials and so forth.

Q. I'm marking as Exhibit 3 a folder that is at least identified as Literature but there appear to be some other notes in there, as well. Can you identify for me what is contained in Exhibit 3?

(EXHIBIT 3 WAS MARKED FOR IDENTIFICATION.)

MS. MCELDOWNEY: Do you want him to identify every document or identify generally what they are?

A. I'll break it down two ways. One is an analysis of exposure levels based on modeling following the techniques employed by your industrial hygiene expert, where we corrected his numbers. And the second is a series of literature and documents that support corrections that we had made and just general information about gasoline, in particular, and the models that were employed to do the assessments.

Q. And when did you create this report that you indicate where corrections were made?

MS. MCELDOWNEY: Object to the form of the question.

It's not a report.
A Yes. I would not categorize it as a report. These are just -- we just did a data -- did modeling and did a data analysis and I did this in late June or early July, in that timeframe.
Q. All right. What else is contained in Exhibit 3?
A I think I basically describe it.
Q. That's it?
A Yes.
Q. It looks to me like, and correct me if I'm wrong, and we'll get into this in more detail, but did you conclude, that Mrs. Ryan's -- well, first off, did you conclude, in this data analysis that you did and your review of the documents, that Mrs. Ryan was exposed to benzene from the refinery?
MS. MCELDOWNEY: Object to the form of the question.
A. Based on modeling data that was -- and information principally used by Mr. Petty, your expert in this case, we derived a number for benzine and gasoline exposure levels. Yes.
Q. And, more specifically, did you conclude that the benzene that Mrs. Ryan was exposed to was from the refinery?

A. That was simply an assumption that I made. I did not look at any other sources of, say, background levels.
Q. Did you ask for any information on background levels in the Sugar Creek or Independence area?
A I did not ask for -- well, I guess, in a sense, yes, I asked for looking at her history and looking at the community, what other potential sources of benzene exposure there may have been for Mrs. Ryan.
Q. And did you conclude that there wasn't any significant sources of benzene that Mrs. Ryan may have been exposed to other than from the refinery?
MS. MCELDOWNEY: Object to the form?
A Well, I did not find that she was exposed to any significant levels, either ambient levels or from the refinery.
Q. If I'm following your analysis here, it appears to me -- is it your conclusion that over the entire period that she lived on Evans Street in Huttig that she was exposed to 0.6 parts per million years --
Ms. McEldowney: I'm sorry. Object to the form. One thing, before you answer, it might be helpful to Mr.

Spencer to answer your question if you ask him what the basis of those calculations were. This was not an independent calculation he did. It was Looking at your expert's calculations, to which he derived those numbers. So, to the extent you can answer.
Q. Well, I'm just looking at your -- what you characterize as data analysis and was it your conclusion, based on the data analysis, that over the years she was exposed to 0.6 parts per million years of benzene?
A. That would have -- point six would have been inclusive of her entire history of living in the Sugar Creek area, both at the Evans address and the Huttig address.
Q. And that's, as you put it, using the same type of an approach as Mr. Petty?
A Precisely the same, yes.
Q. And did you use any other means to assess benzene exposure to Mrs. Ryan from the refinery?
A. Yes.
Q. What else did you look at?
A And I don't know if it was so much -- I'll kind of back up a little bit -- whether it was an approach to evaluate

her exposure or it was simply to look at another approach that Mr. Petty had conducted. We used a Gaussian Plume Model to back calculate what the concentrations would have been on the facility if one were to believe Mr. Petty's numbers that Mrs. Ryan was exposed up to 600 parts per million of total hydrocarbons at her residence.
Q. And did you commit any of those findings or that analysis to writing?
A Yes.
Q. And where does that live?
A. It is in probably about halfway through that data. I can show you, if you like, where it starts.
Q. Okay. And describe for me the procedure in these calculations?
A We employed -- it's a standard EPA model, Gaussian Plume Model, called a screen model, that looks at exposures from a point source at some distance from that point source.
Q. Okay. And does it calculate in some form benzene concentrations?
A. Yes. I believe we showed both benzene concentrations and total hydrocarbon or gasoline

concentrations.

Q. And what were your findings in that regard?

A That the levels -- we looked at levels at the fence line and we looked at levels at the actual tanks themselves or the areas immediately adjacent to those tanks and they ranged from levels which would have been acutely hazardous to individuals at the Sugar Creek work site or would have been above the lower explosive limit for total hydrocarbons.

Q. And that's assuming the upper range of 600 parts per million?

A That's correct.

Q. Did you run that analysis at any lower figures than 600 parts per million?

A. No. For purposes of this assessment, I just ran it at 600.

Q. And when was this analysis run?

A It was done in the last, gosh, as I recall, two or three weeks.

Q. And, on both occasions, when you ran the model similar to Mr. Petty's and this other model that you've just described, did you provide a copy of that to Maron and Marvel?

A. I'm sorry? A copy of this material right here?

Q. Correct.

A I have not.

MR. WALTERS: Cathy, this is the type of stuff that I thought I had an agreement with Herb that I would get this kind of thing ahead of time. So, I mean, it's just literally impossible to think about dissecting this on the fly and questioning. So, I mean, I'm going to plow through but I'm going to leave open the option to adjourn and reopen this deposition because this is the kind of thing I agree to provide to Herb and did for my experts and it hasn't been reciprocated and I just don't think that's fair.

MS. MCELDOWNEY: Well, I don't know what agreement you had with Herb but I'll tell you I've never seen these calculations until this morning and, so, we couldn't have provided it to you any sooner than this morning, pursuant to your subpoena. Our expert never prepared a report. So, we had nothing to provide to you. Now, you're free to ask him what his opinions are and the bases for those opinions and those calculations, but I'm going to object if you want to depose Mr. Spencer today. We are a month away from trial.

We're producing him here. You can ask your questions but we're not going to produce him again.

MR. WALTERS: I may have to take it up. I'm not suggesting anything sinister but I'm just saying that I clearly understood that we were going to exchange this type of information and that's exactly what I did. So, the fact that I don't get it until today is problematic.

Q. Based on your -- when you ran the second model that you've described, you were simply, as I understand it, taking the upper limit of what Mr. Petty said Mrs. Ryan's exposure might have been and trying to make some analysis based on that upper limit, correct?

A Yes.

Q. And when we talk about 600, were you assuming 600 parts per million years or 600 parts per million?

A Six hundred parts per million.

Q. And did you understand from Mr. Petty's report that he was talking about 600 parts per million years?

A Well, I did although he said something peculiar in his testimony that he believed that ppm years was actually an exposure number, not a dose number. So, that's why I used 600

parts per million. Because that was his belief, that that was an exposure value.

Q. He was talking about an exposure over time, correct?

A. Sure, which is really dose. I don't know why he won't admit to that but -- so, that's why I used the 600. He was expressing it as an exposure value.

Q. Well, doses is how much the patient actually takes in, correct?

A. That is correct.

Q. All right. And so, when we're talking about 600 parts per million years, we're talking about that as an exposure and that may or may not be the dose that the individual receives.

A. Well, from an industrial hygiene perspective, dose is calculated based on concentration times time and does not consider the actual inhalation of the material. It's based on the exposure value times time.

Q. Well, do you know how Mr. Petty was defining dose as compared to exposure?

A. He didn't make that differentiation. I was a little confused by his testimony.

Q. Now, in terms of the analysis that you did on using the data similar to Mr. Petty's report, first off, is it not a recognized principle of industrial hygiene that modeling of exposures, that's something that's done in your industry, true?

A It can be, yes.

Q. And do you have any criticisms -- I know you have some of the input -- but as the model as a whole, do you have any criticisms of that model?

A. Yes. Essentially, I don't believe his approach is a reliable approach. It's not a standard or accepted approach in doing exposure, retrospective exposure assessments. So, it's not something that I would typically do or rely upon.

Q. And tell me why?

A Primarily, because, his foundation for exposure is based on odor.

Q. And what's wrong with that?

A. It's an unreliable and unaccepted parameter for evaluating exposure.

Q. Do you think laypersons can be able to identify when they smell gasoline?

A. If they're properly trained in doing so, that is potentially the case. But I do not believe that that would be the case unless they are trained in doing so and gasoline is within an environment that contains only gasoline.

Q. So, it's your opinion that for laypersons to identify that they're smelling gasoline, they need to be trained to do so?

MS. MCELDOWNEY: Object to the form.

A If you are using that as a means of and having any hope of reliably evaluating an exposure, it is your -- training is required. That's what's in the standard text involving the use of odor as an assessment technique.

Q. But do you think the laypersons, adults can identify a smell as gasoline or not?

MS. MCELDOWNEY: Object to the form.

A I think if you've got a gasoline can in your garage and you smell something that smells like gasoline, it probably is gasoline. That's different, however, from someone living next to a refinery, where there's many different chemicals and many different constituents that go into making up gasoline for them to determine what it is that they're smelling.

Q. Any other criticisms? And I'm not talking about the inputs. I'm talking about just the structure of the model that Mr. Petty put together?

A. Well, not other than what you just described. I think it's something he's put together and it just doesn't have a reference for a foundation.

Q. All right. Did you put together a model yourself that you believe would be more reliable?

A. I did not.

Q. Why not?

A. I did not feel there was sufficient information available to do such a model.

Q. What information would need to be available?

A. I would have to understand the amount of material from the various sources being released, the heights that they're being released, the specific release points and the constituents that were being released, concentrations of the various constituents within the products, wind speed and direction, the precise location of the individual indoors versus outdoors. Those are a few of the things that I would need.

Q. Anything else?

MS. MCELDOWNEY: Are you asking him if we asked if he were to actually do a retrospective exposure assessment for Mrs. Ryan, what are all the data points he would need to do that?

MR. WALTERS: I'm just asking him --

MS. MCELDOWNEY: He said he couldn't do it.

MR. WALTERS: Right. And I want to know why he couldn't. What information does he believe is missing?

MS. MCELDOWNEY: Object to the form of the question.

A. I mean, the data that I described. The data of those particular aspects or elements were just not available to do that.

Q. Are you in the camp of believers that, unless you have an actual measurement, for example of benzene during the exposure time period, that it's impossible to model the exposure?

A No.

Q. So, you would agree that, even if there are not actual measurements taken at the time, it is possible to construct a model of benzene exposure?

A Well, I wouldn't put it in exactly in those terms where you can construct a model. I believe that there are standardized models that could be used if you had sufficient input data to go into those accepted models.

Q. There's no question that retrospective exposure modeling is a recognized principle of industrial hygiene. Would you agree with that?

A. Well, I don't know if I'd put it that way. I would certainly agree that retrospective exposure assessments are accepted techniques. Modeling is one component of that exposure assessment process.

Q. Mr. Petty did use a Monte Carlo analysis. Did you see that?

A. Yes.

Q. And a Monte Carlo analysis is a technique that's recognized in your industry, industrial hygiene, as a way to relay and account for exposures?

MS. MCELDOWNEY: Object to the form.

A No. It's really a model -- it's a computer program that's used to test the -- for the uncertainty or the certainty, depending on how you look at it, of your data. In

other words, you've got to take data from the model you developed and then you put that data into the Monte Carlo analysis and that tells you whether or not your data is reliable or it points to the uncertainty in your data. But garbage in, garbage out.

Q. You're familiar, are you not, with the book A Strategy For Assessing and Managing Occupational Exposures?

A Yes.

Q. That's a book that you've cited to and used as a reference, have you not?

A Yes.

Q. And you find it to be generally a reasonably reliable and trustworthy source of information?

A Certainly, like any other reference, you have to properly use and apply the material and the information that's in that reference but, yes, I think it's generally a good book.

Q. And I have just a couple of things I want to make sure that you agree with or don't agree with from this book. First off, I'm looking at page 68.

MS. MCELDOWNEY: Do you have another copy of that

one?

MR. WALTERS: I sure don't. I'm sorry. But I'll pass it around if we need to. And I have the provision here highlighted. But this is page 68 and, actually, I'll mark this as Exhibit 4.

(EXHIBIT 4 WAS MARKED FOR IDENTIFICATION.)

Q. Models are not limited to predicting present day exposures. Do you agree with that?

A Sure.

Q. They can be used to estimate historical exposures that cannot be recreated, as well as possible future exposures in a hypothetical situation. Do you agree with that?

A. Yes, I do.

Q. How about a statement: Relatively simple and uncomplicated models are used first and are replaced with more sophisticated tools only if needed?

A That is, generally, an approach, yes. But, again, those are standardized and accepted models that have a foundation.

Q. And the statement that I wanted to ask you about with the Monte Carlo is found on page 81, if you agree with

this: In general, simple techniques are used initially and more sophisticated techniques, such as Monte Carlo analysis, are used for complicated or critical exposure assessments. Do you agree with that statement?

A I don't think that accurately explains how Monte Carlo is used. Again, Monte Carlo is used to evaluate the variables, your input variables, that go into a model and determine the reliability of your outcome.

Q. But at least this textbook, Exhibit 4, refers to the Monte Carlo as a more sophisticated technique. Do you agree that the Monte Carlo is a more sophisticated technique?

MS. MCELDOWNEY: Object to the form. That document says what it says. I think Mr. Spencer's already testified about what he views or how he views the Monte Carlo analysis.

Q. Is the Monte Carlo, do you agree with this statement, that it's a more sophisticated technique?

A The Monte Carlo analysis is a sophisticated technique for evaluating your data, not necessarily a model that predicts exposure. It is for determining the strength of your data.

Q. How about this statement, and this is just in the

preface to this book: Although traditional industrial hygiene practice emphasize personal monitoring to measure exposure to air contaminants and noise, modeling techniques are becoming more widely accepted and may be required for prospectively assessing an exposure that has not yet begun. Do you agree with that statement?

A Yes, as long as you're using an accepted model.

Q. How does a model become accepted? Does it have to have the blessing of someone before you believe it's an accepted model?

A Well, I don't know if blessing is the right word but, certainly, it is reviewed by experts in that field. It is published. It is critically evaluated.

Q. Now, I want to talk to you a little bit about what was included in Mr. Petty's report. One of the inputs is percent of benzene in gas, was it not?

A Yes.

Q. And you would agree with me that's there's benzene in gasoline?

A Yes.

Q. And benzene has always been in gasoline, true?

A As far as I'm aware, yes.

Q. And when gasoline was first being manufactured in this country, was industry aware, at that time, that benzene was a component of gasoline?

MS. MCELDOWNEY: Object to the form. If he can speak for industry back in whatever time period you're talking about. I don't think he can.

Q. Well, let me rephrase it. Are you aware when the oil and gas industry became aware that there was benzene in gasoline?

A No.

Q. Have you ever read any of the reports from the API, the American Petroleum Institute?

A. On gasoline?

Q. Correct.

A I'm sure that I have, yes.

Q. And would you agree that the percentages of gasoline -- or benzene in gasoline -- have changed over time?

A. I don't know that there's been significant changes. The percent of benzene in gasoline was a geographic issue. It depended on the source of the crude oil. In this country,

most of the crude oil has very low levels of benzene in the crude. So, to my understanding it's more a function of the geography than it is time.

Q. Do you have any criticisms of using the value that Mr. Petty did for the percent of benzene in gasoline?

A Yes.

Q. And he used 2.75%?

A Correct.

Q. And have you not seen documentation that Amoco, at times, has had higher percents than that in their gasoline?

A. Well, I believe he relied on some material safety data sheets from Amoco that pointed at -- spoke to a range of values. However, he failed to utilize a specific -- I believe it's a standard oil document from 1963 that specifically identified the benzene content in the gasoline at Sugar creek.

Q. And what was that percent?

A Point seven.

Q. Have you seen other documents where there was -- and what kind of gas was that, by the way?

A. I don't recall offhand.

Q. All right. And did you assume, for purposes of your report, that that was the percent of gasoline used -- or the percent of benzene in the gasoline at Sugar Creek during the entire time period that they operated?

MS. MCELDOWNEY: Object to the form. He didn't prepare a report.

A Yes, based on both historical and geological information and the documents that were available to me, yes, that was -- I believe that that was approximately -- I mean, it would range somewhere around that value, but that was approximately the benzene content of gasoline.

Q. And what kind of gasoline was that? Do you recall?

A If I could have that stack of documents there?

Q. Sure.

A. I'll be able to better answer that. It is both -- that is for both regular and premium gasoline.

Q. All right. And could you show me what page you're referring to?

A. Yes, that page right there.

Q. Now, what is it about this document that leads you to conclude that that was the percent during the entire time period that the refinery operating?

A Well, again, if you -- it's generally my understanding of refining processes and where crude comes from that that, again, the benzene content is often a function of the source crude.

Q. And is it your understanding -- what were the sources of the crude to Sugar Creek?

A I don't know what the particular sources were.

Q. Is it -- are you making the assumption that the source of the crude was the same during the entire time period that they operated?

A Certainly, within a reasonable range of values.

Q. Have you seen documentation suggesting that there was gasoline with higher concentrations than .7 at Sugar Creek?

A No.

Q. I'm going to show you what we'll mark as Exhibit 5 and I'll represent to you that this is a page out of the West Hills tank area investigative work plan. And I would draw your attention down to the third paragraph for a discussion of various types of gasoline there and then I'll have some questions for you.

(EXHIBIT 5 WAS MARKED FOR IDENTIFICATION.)

A. The third paragraph down?

Q. Yeah. It starts out products stored in the West Hills tank area.

A Yes. Okay.

Q. And are you familiar with ultraform or feed gasoline? Is that a phrase you're familiar with?

A. I've certainly seen it. I can't say that I'm, you know, intimately familiar with that process.

Q. Naptha is also a form of gasoline, is it not?

A. No, I would not consider that a gasoline.

Q. What would you consider it?

MS. MCELDOWNEY: You mean other than Naptha?

A. I'm sorry. Was there a question there?

Q. Sure. I mean, don't they describe -- is this improperly labeled then, the DAN gasoline?

MS. MCELDOWNEY: He didn't hear your last question, Lon.

Q. Oh, sure. How would you characterize it if you don't consider it to be a form of gasoline?

A. Well, it is a -- I would considered it a mixed

aliphatic and aromatic hydrocarbon used primarily as a solvent, not as a gasoline, as my understanding of what gasoline is, is a fuel.

Q. At any rate, were you aware that this ultraform or feed gasoline was stored out at the Sure Creek refinery?

A. I have seen that, yes.

Q. And do you have any reason to disagree with this assessment that it may contain benzene up to five to 15%?

A Well, it doesn't really say that. If you read it carefully, it says C6 hydrocarbons, including benzene. So, there are aliphatic hydrocarbons, which are also C6 and it doesn't define what percentage of that, that five to 15%, is actually benzene. It may have been a very small amount but it, unfortunately, doesn't define that.

Q. Could be all of them.

A. Well, I don't think it is that because it says simply C6 hydrocarbons including benzene.

Q. That would certainly suggest, would it not, the possibility that there's gasoline at the Sugar Creek refinery that contains benzene higher than 0.7?

A I don't think it tells me that one way or the other.

Q. All right. So, you just disregarded any suggestion that there may have been gasoline, LUF gasoline, with concentrations of 5% to 15%?

MS. MCELDOWNEY: Object to the form.

A. I'm sorry. I've never heard of gasoline with 5% to 15% -- even in, maybe in Europe they have 5% or a little higher but never in this country any of the historical literature has ever reported those sorts of concentrations. Generally, the average is around 1%, perhaps up to 2%.

Q. Have you been involved in other cases where the percentage of benzene in gasoline was looked at?

A Yes.

Q. And who reviewed the information compiled by Mr. Petty from other oil companies and other sources of benzene levels?

A Yes.

Q. Do you have any reason to disagree with those percents as outlined as an attachment to his report?

A I haven't studied each of them for accuracy. So, no I don't disagree with him, although I know a lot of it was Canadian based. There was a lot of Shell data that he had in

there. Shell, again, their source of crude -- I don't know whether that was Shell from European made products, which, again, typically historically had much higher levels of benzene in it than U.S. product did.

Q. In reviewing this information about the LUF gas, was that analysis not made in combination with benzene levels that were detected in the groundwater?

MS. MCELDOWNEY: Object to the form of the question.

A Well, this talks about spills and discharges. So, I think that's where that information came from.

Q. If you look in the paragraph above the one we were referring to, they were looking for an explanation as to why the benzene concentration was so high in the groundwater near tank 157, correct?

MS. MCELDOWNEY: I don't know if he can tell that by just this one page.

A It's saying that they believe that the benzene came from a source other than finished gasoline.

Q. Which would explain why the benzene concentrations were so high in the area of that tank, correct?

A Well, I don't know all the other data behind this or

whether this was -- this particular analytical assessment was actually correct. I haven't -- I'd have to look at the other data from around that tank to see whether this was an anomaly or this is what they were finding, in general, around that tank.

Q. Now, for your analysis then, using Mr. Petty's model, you concluded that there was 0.7% benzene in and the gasoline for the entire period that Mrs. Ryan may have been exposed. Is that true?

A No. I Actually used 1%.

Q. Now, the other change that you made was the vapor to liquid benzene ratio. Is that correct?

A Yes.

Q. And you concluded that there was .28 vapor to liquid benzene ratio?

A Yes.

Q. All right. And what was your source of that information?

A. Wixtrom.

Q. Okay. Have you also reviewed the report by Tironi assessing that ratio?

A I'm not certain I've looked at Tironi. I've looked at other references, some of which were a compilation of other data that may have included Tironi. So, I'm not sure whether that was included in there.

Q. And would it be true that you are relying on other sources of information for that ratio, you didn't make an independent analysis of that benzene liquid to vapor ratio?

A That's correct. I was relying on published literature for that information.

Q. And as I understand it, from reviewing your CV, you're an industrial hygienist, is that correct?

A Yes.

Q. You're not a chemical engineer?

A Correct.

Q. Have you ever had any specialized training in chemical engineering?

A. Well, certainly, chemistry. I wouldn't call myself a chemical engineer but I worked at the National Institutes of Health in the laboratory of chemistry synthesizing various chemical constituents.

Q. Beyond that training and, I suppose, probably

chemistry in your undergraduate, do you have any specialized training beyond that in chemical engineering?

A Not, again, I would not call it chemical engineering, no.

Q. What was it about the Wixtrom study that you believed was accurate to provided the best data on the vapor to liquid benzene ratio?

A. It corroborated data in the Journal of Toxicology on the gasoline toxicology update. It corroborated data that was in a Runion article from the 1970s, I believe, and also corroborated by own experiences in measuring for benzene and gasoline.

Q. Have you done actual studies yourself to compare the liquid to vapor ratio of benzene in gasoline?

A Yes, a number of times.

Q. And what have you done in that regard?

A. I have been involved with Marine inspectors inspecting barges and cargo ships that previously contained cargos of gasoline and I monitor for total hydrocarbons and VTEX during their inspections. I have evaluated mechanics working on automobiles, again, looking at the same parameters.

Q. Did you do any calculations though to determine the ratio of the vapor to -- or the liquid to vapor ratio in those analyses that you've just described?

A In those analyses, I looked more at the vapor ratio of total hydrocarbons to benzene.

Q. And as I understand from reading your previous depositions, in your review of -- or your studies on mechanics at various stations, you didn't find there to be much in the way of detectable benzene, true?

MS. MCELDOWNEY: Object to the form. Do you mean for the specific cases or mechanics that he was looking at or in general?

Q. Of the mechanics you were looking at.

A Yeah, I -- in those particular studies or surveys, that I was doing, the level was extremely low for benzene content. At this point, I don't specifically recall whether we found anything or not but it was certainly well below occupational health standards. So, it was not considered significant.

Q. So, if we were looking at another source where a person might be exposed to benzene, if they were at a mechanic

shop, similar to the ones that you reviewed, you wouldn't expect that to be an exposure that would cause them any appreciable harm?

A. Well, I don't really speak to causation but, as an industrial hygienist, I would not believe that there would be sufficient exposure to cause any adverse health effect.

Q. Now, other than the percent of benzene liquid and also the vapor liquid benzene ration, what else did you change in your analysis of Mr. Petty's report? I can hand it back to you, if you like.

A. Sure. There's one other thing I do remember right now, which is the wind direction. We looked at wind rose data for that area and determined that the -- what percentage of the time the wind was actually blowing in the direction of Mrs. Ryan's house.

MS. MCELDOWNEY: And, I'm sorry, Lon. Just so the record's clear, he didn't change Mr. Petty's calculations. I mean, he put in different data using Petty's model. Just so we're clear. You keep saying that he's changing the numbers.

MR. WALTERS: Well, the numbers did change. I think that's an accurate assessment.

MS. MCELDOWNEY: They did but he's using different data using Petty's model.

Q. Now, let me ask you this about wind direction. Does topography effect analysis of wind direction?

A I don't think it would effect wind direction, no.

Q. Would it effect -- I guess what I'm getting at is would topography effect whether or not a given location can appreciate the wind direction?

A Certainly, it can if it's completely blocked from that wind, sure.

Q. What about a body of water? Can a body of water effect wind directions in a given location?

A. Again, I don't think it has any effect on direction of wind, no.

Q. Does it have an effect on whether or not a location in proximity to a body of water appreciates that wind?

A. I don't think I'm following your question. Sorry.

Q. Well, sure. Do you think that a body of water will change a wind direction?

A. No.

Q. Do you think topography, in terms of rolling versus

flat will change whether or not a given location appreciates a wind direction?

A Again, I do not believe topography would effect the direction of the wind. It might create vortices and that sort of thing but, overall, the wind direction would remain the same.

Q. And that's really what I'm getting at. Of course the wind direction will remain the same but, whether or not a given location, because of topography or a body of water, experiences a breeze, those types of things would effect it, would it not?

A Yes, it could. I'm not saying that -- you'd have to look at the particular topography to make that determination.

Q. And in the making your analysis of wind direction, you assumed that to Ryan residence, the directions, as set forth in the wind rose, would be representative of what they received in terms of wind?

A Correct.

Q. You didn't make any adjustments or changes for topography in the area?

A No, wouldn't need to do that for direction.

Q. And you didn't make any changes based on any bodies of water in the area?
A No. I do not believe that would effect the direction of the wind.
Q. And, by the way, the wind rose that you used was wind direction at the Kansas City International Airport, correct?
A Correct.
Q. And do you know what distance that is from Sugar Creek?
A. I would estimate 20 to 30 miles.
Q. Now, the thing is -- so, what you did then, did you reduce the amount of time that Mrs. Ryan would have been exposed based on wind direction?
A Yes.
Q. So, you're assuming that when the wind wasn't blowing in the direction of her home, that she was not exposed to any gasoline vapors?
A Correct.
Q. So, you're aware, are you not, that there are witnesses who've described odors of gasolines in the

neighborhoods that she's resided in?
A Yes.
Q. Do you not accept as true their testimony in that regard?
A. No, I no have no reason to refute that they smelled what they thought was gasoline.
Q. And that would be inconsistent then with reducing the amount of time that someone might be selling gasoline with the direction that the wind's blowing?
MS. MCELDOWNEY: Object to the form.
A. Well, if you're presuming that it comes from the refinery, there were other sources of gasoline in that community. When the wind was blowing in the direction from her house to the refinery, there was another source of gasoline that was at the opposite side of her house from the refinery.
Q. And what's the source -- what's the source of that gasoline?
A The Vickers gas station.
Q. And, so, you think that everyone in the neighborhood who describes the smells of gasoline that they attribute

coming from the refinery may have been coming from the Vickers gas station?
MS. MCELDOWNEY: Object to the form. That's not what he's saying.
A. No, I'm simply stating that that is another source that needs to be considered.
Q. How far was the Vickers gas station?
MS. MCELDOWNEY: From where?
Q. From the Ryan --
A. From the Evans property?
Q. Correct.
A As I recall, it was five or six blocks.
Q. Do you think that is a source of gasoline smells at the Evans address?
A No. I can't say one way or the other. The odor threshold for gasoline is extremely low. They could have smelled something if particular tanks were venting at a particular time or they were filling tanks at the gas station. That's a common time that one would smell gasoline from the gas station.
Q. What is the odor threshold for gasoline?

A. It's a range of about 0.07 to 0.25 parts per million.
Q. And what is your basis for that?
A The documentation off TLVs from the ACGIH, ATSDR and the -- there's an article in The Journal of Toxicology on the toxilogical updated for gasoline.
Q. Have you ever ran back in time to see where that citation first to originated from the ATSDR to see if it's reliable?
A Yes, I have.
Q. All right. And did you find that it goes -- the ATSDR cites Weiss, the hazardous chemicals data book?
A. I don't know that I specifically recall the reference. It's been a long time since I've looked at that.
Q. And then Weiss, in turn, cites another source, the CHRIS, the Chemical Hazards Response Information System. Does that sound familiar?
A. Yes. It's a Coast Guard document, yes.
Q. And the Coast Guard document does not provide any basis for where this odor threshold came from, do they not?
A Again, I don't know -- I don't particularly recall a

reference there. But there are other references that I just mentioned that support that.

Q. Do you -- you've read the Drinker 43 study, have you not?

A Yes.

Q. Do you discount that as accurate information?

A For people's response to aerosolized gasoline vapors?

Q. Correct.

A I'm not discounting it for the purpose for which it was intended. It was done in 1943.

Q. And it was done on human subjects, correct?

A Women, yes.

Q. And the -- was the odor thresholds that were cited by ATSDR, were those conducted on human beings?

A Again, I have to go back and look at those references to see what the tests were done on. I would think the origin of that data was human data, yes.

Q. Now, if persons report that they're smelling gasoline and they are, in fact, smelling gasoline that would be well above the odor threshold, correct?

A Well, no. That would be at the odor -- they could be -- they're at or above the odor threshold.

Q. And, in reviewing the points of the odor concentrations for gasoline that Mr. Petty used, did you discount those in your analysis?

A. Did I discount the values that he used from the Drinker study?

Q. Correct.

A Oh. Yes, because they weren't odor thresholds.

Q. So, your belief is that only odor thresholds should be used in assessing this type of information?

MS. MCELDOWNEY: Object to the form.

A That's how he used it. And he was using improper data. He was using data that was looking to elicit a toxilogical response in individuals, not necessarily an odor and I think he was confused and misrepresented what that data was actually reflecting.

Q. Well, didn't the Drinker study, when the ladies were exposed to various concentrations of gasoline, describe whether it was weak, strong, somewhere in between?

A. Sure, they gave a subjective analysis. But, if you

read about odor and odor evaluations, that's the problem with using odor as an exposure assessment technique. There's incredible variability among individuals and what they report in terms of -- or when they report smelling something.

Q. Well, one of the values that I recall they used from the Drinker study was that a concentration of 140 parts per million, there were some individuals who didn't even recognize the smell as gasoline, correct?

A Yes and there's a real problem with that.

Q. The problem being that -- at least mean one of the problems being that at 140 parts per million, the odor wasn't strong enough for those individuals to appreciate that it was gasoline?

A I disagree. I if think you look -- this is in 1943. If you look at the information we have available now, if you are familiar with the an effect called olfactory fatigue, if you smell something that high, you're talking about hundreds and thousands of times above the odor threshold level for gasoline. You create what's called olfactory fatigue. You lose your ability to smell that particular chemical and it makes sense that was what was happening in this experiment.

Q. You think that was happening at 140 parts per million?

A. Oh, sure.

Q. And they exposed the ladies to amounts much higher than that, correct?

A Yes, they did. For long periods of time.

Q. Now, as I understand it, you do not know whether or not the odor threshold for gasoline, as reported by ATSDR, was done on individuals, correct?

A. I didn't look at that. My assumption is it is because it is an odor threshold number.

Q. Now, since it is an odor threshold number, you would agree that even at that, if that's a threshold number, if someone reports the strong odor of gasoline, that number would likely increase?

A Again, highly variable. Some of the other literature reports 0.07 parts per million, 70 parts per billion. So, what may be strong to one person is mild to another.

Q. Any other reasons, other than what you've described, as to why, in your view, it's improper to use ranges from the

Drinker study?
A Well, I guess you can also reference the -- it's not just my opinion but the ATSDR's opinion, as well, that the Drinkers study from 1943 is not the same as gasoline vapors that humans would be exposed to in ambient conditions. They heated -- they atomized the gasoline and then heated it. That is not representative of an exposure that one would have such as being in a refinery.
Q. All right. And what were you referring to just now?
A. It's the latest version of the ATSDR document. I just have a one-page excerpt from it. I have it behind the Drinker study itself.
Q. The Drinker study was done by an independent lab, was it not? The name escapes me right now. Arthur Little?
A. Arthur D. Little?
Q. Correct.
A. Gosh, were they around in 1943?
Q. Apparently.
A I don't remember that it was Arthur D. Little. I know they've done studies on odor issues, in particular for benzene, as well.

Q. Now, one thing I wanted to ask you about, back on this naptha. There clearly was, based on your review of the documents, naptha present out at the Sugar Creek refinery.
A. I've seen that reported, yes.
Q. Okay. And naptha, in fact, when you look at the percent of benzene, liquid benzene to vapor, there's actually an enhancement. Is that not true?
A. I don't know what you mean by an enhancement.
Q. Well, you're familiar with the Elkins paper, correct?
A Yes.
Q. And didn't they find that --
A. I'm sorry. You're referring to Elkins and Pagnotto?
Q. Correct.
A. A tire manufacturing facility?
Q. Right. A paper, Industrial Benzene Exposure from Petroleum Naptha?
A. Yeah, a two-part paper. Should be a part 1 and part 2. Yeah, this is part 2.
Q. And did they, in fact, find that when you compare the ratio between liquid and vapor for naptha, it's actually

in a greater concentration in vapor than liquid?
Q. I don't recall that they found that. I think they found that they got a higher than expected level of benzene in the air based on Raoult's law than what they would have calculated using Raoult's law, that is looking at vapor pressure. The problem is, in that study, they were using thousands of gallons of naptha and within those thousands of gallons meant pounds of benzene. So, it's hard to draw that correlation.
Q. In making your assessments of the various models here comparing potential benzene exposure, did you look at the industrial hygiene reports that were done in the late 70s?
A Yes.
Q. And did you consider the benzene concentrations that were found at various locations?
A. I reviewed that, yes.
Q. And did you see at times there were areas where the benzene concentrations exceeded to OSHA limits?
A. I don't recall where they specifically exceeded the occupational health standards of the relevant time periods.
Q. What was the OSHA limit during the relevant time

periods in the late '70s?
A It would have been 10 parts per million in an eight-hour time weighted average.
Q. Do you recall where they found some concentrations as high as 73?
Q. I seem to recall there was one sample but I don't know or I don't remember what that sampling time was and if you time weight it, it may come out below that. I'd have to go back and look at that specific data point if you have that there.
Q. And did they find, to your recollection, some concentrations as high as 22.6? Do you recall some of those in the twenties?
MS. MCELDOWNEY: Do you want to show him the document? It might make it easier for him to answer your questions.
MR. WALTERS: Sure. I want to ask him first if he recalls that. I can show it to him.
A. I do not recall that specific number. It may have been. And, again, I have to look to see whether that was the eight-hour time weighted average number or a shorter term

sample.
Q. If we assume that the gasoline only had 0.7% benzene, do you know how the air concentration that they measured would have gotten to these numbers?
A. How the air concentration -- it depends on the process that they were at. Which aspect of the process that they were in. They could have had, you know, elevated total hydrocarbon levels and gotten those levels of benzene.
Q. Do you think that at least on the -- well, let's just start with the Evans address. Other than benzene in the gasoline, do you believe that Mrs. Ryan may have been exposed to other, for example, hydrocarbons that contained benzene?
A I have seen no specific information which suggests that she was.
Q. So, if she was exposed to anything, at least on Evans Street, it would benzene from gasoline vapors?
A Well, again, I'm going just based off the assessment that your expert, your industrial hygiene expert, had done in this case and there was no other information presented that there was some other measurable source of exposure.
Q. Now, other than the lawyers, have you been out to --

who have you talked to about this case?
A. Other than the attorneys in this case?
Q. Correct. Did you go interview anyone?
A. No.
Q. A the refinery, did you ever talk to any employees, past or present, of the refinery?
A No. I was introduced to chiggers out on the site.
Q. All right. Chiggers.
A. I got my first dose of chiggers since I was a kid.
Q. All right. When did you go to the site?
A. June 22nd of this year.
Q. And who was with you at that time?
A. There was an individual named Ron. I don't remember his last name. And another fellow named Chris, whose, again, last name I don't remember, and Herb Mondres.
Q. And did you go both around the perimeter of the site and also on site?
A Yes.
Q. Did you make any notes of that site visit?
A. No.
Q. Did you take any pictures?

A Yes.
Q. Where would those be?
A. They should be somewhere here, in the file.
Q. All right. Maybe we can dig those out on a break.
A. Okay.
Q. Was any information provided to you at that time, either your observation or verbally, that was pertinent in your forming your opinions?
A. I can't say there was a specific item that was pertinent other than just getting an understanding of the distances and seeing the topography firsthand.
Q. In terms of distances, the Evans Street address, did you calculate or observe the distance between that location and the gasoline storage tanks along Willow?
A. Well, I took that more from the maps from the site plans based on computing from scale.
Q. And how close was that residence to those gasoline storage tanks?
A. You know it's in that data there. I can tell you specifically if you want to know. I think the nearest residence to the Evans tank was tank 177 and that was

approximately 602 feet.
Q. And in your review of the documents, did you find that, over time, those tanks along Willow were the source of multiple leaks and spills?
MS. MCELDOWNEY: Object to the form. If you can answer the question.
A Based on documents I reviewed, yes. It appears that there were leaks from those tanks.
Q. And if, in fact, there were complaints of odors of gasoline in the area of Evans Street, those leaking tanks would certainly be one explanation as the source of those odors?
A. It could be a source, yes.
Q. Now, have you ever done any consulting work for Amoco in the past?
A. Yes.
Q. How many other cases or consulting work?
A One that I can think of.
Q. And what was that one?
A I'm sorry where?
Q. Where and what was that about?

A. Hazelton, Pennsylvania and I think a service facility had leaking underground storage tanks.

Q. Are you working with Maron and Marvel on that case?

A Yes.

Q. Were you retained by them or one of the other oil companies?

A By them.

Q. Any other cases that you've done for Maron and Marvel other than Hazelton?

A No, I don't believe so.

Q. Have you given a deposition in that case yet?

A No.

Q. How about -- and maybe it's the same again -- Hazelton. How about British Petroleum? Have you done any cases in the past for that oil company?

A I just cannot recall a specific case that involved British Petroleum.

Q. Is the Hazelton case the only case you've done with Maron and Marvel or are there any others?

A. I've been involved in some other work with them. I mean, it may have been a couple of years ago or so.

Q. So, we know there was some work a couple years ago. There's the Hazelton litigation, all before Sugar Creek, true?

A Yes.

Q. What other oil companies have you consulted with?

A I have worked for Exxon, Shell, Phillips Conoco, Texaco. And you say, consulting. You mean litigation or outside litigation?

Q. Let's go with litigation first and then we'll move to outside litigation.

A Chevron, if I haven't mentioned that one, that's another one.

Q. Have you -- any others outside of litigation? Oil companies?

A Yes. I've worked for Unical, Shell outside of litigation. I'm sure there's been others that I've just forgotten about. I've worked for a lot of different organizations, government, private industry and private individuals.

Q. Your currently with a company that does consulting work, EPI, is that correct?

A. Yes.

Q. And are you -- you're the president of that company?

A Yes.

Q. What percentage of work does that company do in litigation as opposed to nonlitigation?

A Well, I'm the only one in the office that's involved in litigation from that standpoint. So, do you mean me or the company?

Q. Well, I guess if you're the only one involved, let's start with you. What percent of your time is devoted to litigation as opposed to nonlitigation work?

A. It varies considerably depending on what projects I'm working on that week or that month. So, you know, a range might be 15% to 4%. It varies considerably.

Q. And I know you've given testimony in the past in deposition and in trial. Has your opinions ever been excluded for any reason?

A Yes. I had an opinion on cumulative dose about 10 or 11 years ago that was excluded by a judge. It was not excluded from the case. It was simply an opinion on cumulative dose. Camelot Jeff tell us?

Q That was the Lavender case?

A Yes. I've heard you do your homework.

Q. I do. Have you ever been excluded other than the Lavender case?

A No.

Q. This would probably be a good time to take a break, around five minutes. I've been talking a long time so I'm ready to quit for a while.

VIDEOGRAPHER: Here marks the end of video tape number 1. Going off the record. Time on the screen is 14:25:35.

(A BRIEF RECESS WAS TAKEN.)

VIDEOGRAPHER: Here marks the beginning of Video Tape Number 2. Going back on the record. Time on the screen is 14:43:33.

EXAMINATION

BY MR. WALTERS:

Q. We've talked at some length about a couple of things that you did in formulating your opinions in this case. I just want to back up a moment and ask you, when you were initially retained, and even subsequent to that time, what, in addition to the things that we've talked about,looking at Mr.

Petty's model, what else have you done or were asked to do in this case?

A. Looking at the model, discussing the issue of odor as an exposure assessment technique and I think, generally, describing what an accepted process is in doing an exposure assessment.

Q. Odor as an exposure assessment technique, that has sort of grown up out of the occupational setting, correct? You see that more prominently in an occupational setting?

A. I don't think you see it at all. It is referenced in literature but it is not a, by any means, a technique that -- I have never in my 28 years used it as an industrial hygienist to evaluate exposures.

Q. One of the things that I've seen cited is that, in the occupational setting, or it might have been one of your depositions, one of the problems is identifying exactly what you're smelling, true?

A Sure. In a mixed chemical environment, that's absolutely a problem. And the inter-, intravariability of odor detection recognition.

Q. Is it your view that -- is it impossible then to

model back in time using odor as a foundation?

Ms. McEldowney: Object to the form.

A. I have never seen it done accurately. I've seen where others have tried to do it but did not -- basically gave up on that technique and did not use that methodology.

Q. So, from your perspective, if I had called you instead of Mr. Petty, you would've told me we can't ever determine what Nancy Ryan's exposure to benzene was?

A. I could not have told you what her individual exposure was. I may have been able to better describe community exposures through some of the various Gaussian Plume Models. That's not really an individual type model. So, yes, I think it would be difficult, if not impossible, to do. I just don't think, as I said at the beginning of this deposition, I do not believe there was enough information to accurately describe what Mrs. Ryan's exposure to benzene or to gasoline was.

Q. And I think we covered this, but just so I'm clear, the information, in part, that you believe is necessary is an actual measurement?

A No. No. You don't have to have that. That's good

data to have to calibrate your models if you're using an accepted model. But you don't absolutely have to have that.

Q. Now, what else were you asked to do in this case?

A I think that I've describe everything that I was asked to do.

Q. Now, one thing that I've seen is I think your assessment of what an industrial hygienist does and that's to protect human health and the environment. Is that true?

a Yes.

Q. And you, I can tell from reviewing the information, have reviewed and a lot of documents from the Sugar Creek refinery over the years, true?

A. I have looked at those documents. They weren't what I would call instrumental in the assessment or my role in this particular case back.

Q. Have you ever reviewed or been involved in an exposure assessment as it relates to a refinery?

A. Yes. Well, I'm sorry. You say as it relates to a refinery. My work has been involved as it relates to a worker, whether a contractor or an actual employee of a refinery.

Q. Have you ever worked on a case looking at community exposure from a refinery?

A No. I can't recall a specific occasion where I've done that.

Q. Have you ever seen from any other locations data on benzene air monitoring near a refinery?

A Yes.

Q. And what data have you seen in that regard?

A. Primarily, I've seen fence line data from various facilities, including refineries.

Q. Have you seen any fence line data or any of the Amoco or BP refineries?

A. Have I in the past? I may have.

Q. For example, Texas City. Do you know there is a refinery there in Texas City?

A. Yes, I believe I was aware of that.

Q. What refineries do you recall seeing fence line data

A. Shell, Phillips Conoco, Exxon facilities in Texas and/or California.

Q. What Shell refinery? In Wood River or Texas?

A. Wood River. Well, that's wood River in Illinois;

right?
Q. Right. There's a Shell refinery in Texas.
A. There is. And there is another one in Texas that I have also been to and have seen that data.
Q. Was that data back in time, do you remember the time periods it covered?
A I don't. I mean, gosh, I've looked at thousands of data points.
Q. Have you seen in the past where communities located near a refinery where they actually have had air measurements that showed concentrations of benzene?
A In the communities themselves?
Q. Correct?
A. Near a refinery. I do not recall that specific data, no. That doesn't mean I haven't seen it. I just don't specifically recall that.
Q. Were you asked, in this case, to evaluate whether or not the refinery at Sugar Creek operated in such a way as to protect human health and the environment?
A No.
Q. And, if I understand it correctly then, at the time

we get to trial, you won't have any opinions on how the refinery operated and whether or not they used practices that protected human health or protected the environment?
A It's certainly what I do as an industrial hygienist. I have not specifically focused on that issue for this case. At this point in time, I don't anticipate. It just depends on what I am asked to do to perhaps rebut testimony of, in particular, your industrial hygienist in this case.
Q. You have reviewed both of Mr. Petty's reports correct?
A Yes.
Q. The big one, which was initially, and then this model, which came subsequent to that?
A Correct.
Q. And, just so I'm clear, up to this point in time, July of 2005, you haven't been asked to evaluate or assess how this refinery operated in terms of protecting the environment and protecting human health?
A That's correct.
Q. I wanted to ask you a little bit about warning signs. Warnings come up within the purview of industrial

hygiene, do they not?
A. Yes.
Q. And I want to show you what we've marked as Exhibit 6 and ask you a little bit about some signage up there at the refinery. Have you seen Exhibit 6 before?
(EXHIBIT 6 WAS MARKED FOR IDENTIFICATION.)
A Yes, I have.
Q. This is a sign that is near a storage tank out there at the Sugar Creek refinery?
A Yes.
Q. And the sign that I'm talking about -- actually, there's a small caution sign -- but the one I'm talking about, gasoline danger contains benzene cancer hazard, do you see that?
A I do.
Q. And do you agree that that contains accurate information?
MS. MCELDOWNEY: Objective to the form. What do you mean by, accurate information?
Q. Well, gasoline contains benzene, doesn't it?
A. I would agree with that part of it but not that

gasoline is a cancer hazard.
Q. All right. So, you think that this posting up here, this sign, is inaccurate?
MS. MCELDOWNEY: Object to the form. That's not what he said.
A. I think it's -- I'm not sure why it's there. It's not necessary. I presume done in an abundance of caution for, perhaps, people coming on site to the facility. But it's certainly not necessary.
Q. All right. Well, I'll move to strike that. My question is, do you believe that contains accurate information, that benzene is a cancer hazard?
MS. MCELDOWNEY: Object to the form of the question.
A I believe that benzene is a potential cancer hazard. I do not believe that gasoline is a cancer hazard?
Q. To the extent that -- but you do agree that gasoline contains benzene?
A Yes.
Q. And you would agree, would you not, that since benzene is a cancer hazard, that would be something that would need to be warned against?

MS. MCELDOWNEY: Object to the form.
A. Not in the case of gasoline, which has been tested as a mixture and found not to be a cancer hazard and, in particular, that the benzene standard 1910.28 specifically exempts this type of facility from having a benzene warning.
Q. Well, just because they're exempt, that would be government's minimal standards, true?
A Well, the standard is in place as a result of necessity. And it's not necessary here because gasoline has been tested and, even though it contains benzene in small fractions, it's not considered a cancer hazard.
Q. To the extent that persons are exposed to benzene from the gasoline, it could, in fact, be a cancer hazard, true?
MS. MCELDOWNEY: Object to the form.
A No. No. Again, gasoline has been tested, which contains benzene, and due to the quantities of benzene and the exposure potentials, it's not considered a cancer hazard.
Q. So, breathe all the gasoline you want and you'll be fine?
MS. MCELDOWNEY: Object to form.

A Well, I wouldn't do that in any regard but -- because of the effects of any hydrocarbon, not just gasoline. I wouldn't do it with mineral spirits. I wouldn't do it with turpentine. I wouldn't do it with ethanol.
Q. Would you agree that gasoline can be a potential exposure pathway of benzene?
A. No. Not in the sense -- from an industrial hygiene definition of exposure pathway. No.
Q. I'm going to show you what I'm going to mark as Exhibit 7 and ask you if you've ever seen this document before and direct your attention, after you've had a chance to review it, to page five, where I'm going to ask you some questions.
(EXHIBIT 7 WAS MARKED FOR IDENTIFICATION.)
I wanted to direct your attention over to page five and I'm going to ask you some questions about some statements down here. First off, as I understand this document, and I want to make sure you understand it too, is this is something that was put together, as sort of a Q&A for some Sugar Creek issues. Does that comport with what your understanding of what this documents is?
MS. MCELDOWNEY: Object to the form.

A Well, I mean, all I know is, based on the July 12th letter attached to this, there appears to be a response to a public hearing, public meeting.
Q. Do you recognize any of the names, I'm looking at page one, Lays, Case, Bolt? Do those names ring a bell to you, in terms of --
A No.
Q. Looking over at page five, have they posed a Question in this document, what is the risk that residents may be exposed to benzene? Do you see that?
A Yes.
Q. And the proposed response, I want to ask you if you agree with it. First sentence: "Benzene, a known carcinogen, is one of the components of gasoline." Do you agree with that?
MS. MCELDOWNEY: Object to the form.
A As it's stated there, yes.
Q. Third sentence: "In order for exposure to exist, it would be via inhalation." Do you agree with that?
MS. MCELDOWNEY: Object to the form?
A Well, there's other means of exposure. I guess

they're talking specifically at the site, that inhalation would be the route of exposure and, yes, I would agree with that.
Q. And the third sentence there. Do you agree with this statement: "This would most likely be detected as a hydrocarbon odor in the home. Do you agree with that?
MS. MCELDOWNEY: Object to the form.
A I think it's a little misleading that if it's referring to benzene. I think if it's talking about gasoline then, yes, I would agree with that. It's a little unclear.
Q. And that's how -- you would agree that that's how an individual Would know of their was -- by a hydrocarbon odor they would know if there was this potential pathway, true?
A. If they detected an odor that was there, a hydrocarbon. Yes. You can't see it or necessarily feel it so odor or smelling it is one way of detecting it.
Q. In reviewing the documents and the reports, you're aware, are you not, that there is a benzene plant that has existed out in Sugar Creek for some period of time?
A. For certain areas, not throughout Sugar Creek but certain areas that are predominately, as understood it, south

of the tank farm.
Q. And one of the -- are you generally familiar with the concept of vapor intrusion?
A. As -- you mean the vapor component moving through soil?
Q. Correct.
A Yes.
Q. That's a scientific principle that, if you have a structure that is sitting over the top of, for example, a benzene plume, there exists the potential for vapors to come up through the soil and intrude into the home, true?
A. There is potential but, of course, that's dependent upon topography, on soil conditions and pathways from ground to the house.
Q. It would depend on distance between the groundwater plume and house as well, true?
A Sure. One of several things, yes.
Q. But just in principal, when you have, for example, a home or really any building that sets over -- sets on top of a plume, a benzene plume, there exists the potential pathway for intrusion of vapors from that plume?

MS. MCELDOWNEY: Object to the form. Asked and answered.
A Again, it depends on variables how far, how deep down the plume is, what the concentration of the vapor is, what the soil conditions are, and what the pathways are from the soil into the house.
Q. In reviewing the documents, did you make any assessments of what the source of complaints of odors might be?
MS. MCELDOWNEY: By whom? I'm sorry.
MR. WALTERS: By anyone.
A. Certainly, I read or saw that there were some complaints but I didn't evaluate that thoroughly.
Q. I want to show you what I'm going to mark as Exhibit 9 -- 8 and have you take a look at this and then I have a few questions for you over on page -- and I'll have some questions for you on page five of nine.
(EXHIBIT 8 WAS MARKED FOR IDENTIFICATION.)
A. I'm sorry. You said page nine?
Q. This page that starts out, hydrocarbon and/or odor control investments.

A. I'm sorry. Would you show it to me again?
Q. Sure.
A What does it say at the top, the first pipe?
Q. Pipe steel and then gas compressor.
A. Okay. I'm sorry. Is there a particular question?
Q. Well, back over to -- I'm sorry to turn you around but, on the second page, in the middle of the page, do you see the heading, air pollution control?
A Yes.
Q. And they've identified some problems. Do you see that?
A. Yes. Sure.
Q. And they talk about the there's continuing odor violations from -- and they list five sources. Do you see that?
A. Yes.
Q. Fugitive emissions, that would be a source of odors from the refinery, would it not?
A. Yes. It could be from some process area on the far side of the refinery. It's not defining what that is.
Q. I think we covered this earlier but, number two in this exhibit talks about leaks, leaks from tanks. That would be a source of odors, would it not?
A. Well, I don't know that it would or not. If it's going right into the ground, it may not be. It depends what kind of leak it is and where that leak is coming from.
Q. Leaks of pipes, that could be a source of odors?
A. Yeah, depending on where they are, they may or may not be.
Q. But, for whatever reason, in this exhibit they were identifying those sources as areas where they were receiving odor violations, right?
MS. MCELDOWNEY: In 1979?
MR. WALTERS: Correct.
MS. MCELDOWNEY: If you can answer.
A. I'm not sure what an odor violation is, but -- I'm not sure what this means. It could have been a pump that had a bad seal. I just don't know. It doesn't define that.
Q. Okay. Well, I'm not trying to overcomplicate it. The point of it is, is that when they -- when this document was written, they are listing these things as where they were receiving odor violations, right?

A. Yes, that's how they term it. I don't know what it means. It appears to me to be a document that they are taking stock of where their problems are, where their issues are for purposes of corrective action.

Q. All right. And so, for corrective action, they are looking at fugitive emissions, leaks, sludge pits. Do you know what sludge pits are?

A Yes.

Q. Oily tank bottoms?

A Yes.

Q. Do you understand that, at the refinery, there was a problem with corrosion with the tanks?

MS. MCELDOWNEY: Object to the form. What tanks?

A. I'm not familiar with the details of that but, again, I wouldn't be surprised in an older facility.

Q. And lastly their loading operations was apparently the source of odor violations?

A Okay.

Q. Now, flipping over to page, the original page I was talking about, there's a heading, hydrocarbon and/or odor control investments. Do you see that?

A. At the top of the page? Page five of nine?

Q. Correct. And is -- first off, hydrocarbon odors necessarily may include gasoline odors, correct?

A It certainly could include that but there's many hydrocarbons that could be included here.

Q. And there are many hydrocarbons that contain benzene, correct?

A Yes, and there are many that do not.

Q. When, and I'm looking at page five of nine. They have various categories listed. Do you understand these to be sources of hydrocarbon odors?

A It appears to me that, yes, that would be the case. They're making a financial investment in controlling these emissions. In fact here's mechanical seals, fugitive emissions. It's kind of what I was describing before. That would be on a -- replacing rope packing with mechanical seals on a pump.

Q. And all of these different categories listed here we can assume that there was some hydrocarbon odors coming off of these; hence, the need to spend money to fix it, right?

MS. MCELDOWNEY: Object to the form. If you can

answer.

A. Again, I'm not intimately familiar with this document but that's what the title would lead one to believe. Yes, they were making a concerted effort to control odors. Odors, of course, do not indicate health hazard.

Q. Odors could indicate health hazard?

A. But they do not. In and of themselves, they do not. And that's why you cannot rely on odor.

Q. If, in fact, a person is breathing gasoline that contains benzene, that could create a health hazard?

A. But not a health hazard associated with benzene.

Q. Why, if a person is breathing gasoline and they're also necessarily breathing benzene, would that not create a health hazard?

A Well, that's what the animal human studies tell us. Certainly there's hazards associated with breathing high levels of gasoline for extended periods of time. I certainly wouldn't deny that. But it has been tested as a mixture, including benzene, and you don't have the chronic effects of benzene exposure.

Q. Have you ever read any of the cohort studies looking

at refinery workers?

A. I have, yes.

Q. And those refinery workers would be exposed to benzene, correct?

A. Yes.

Q. And they may very well have been exposed to benzene from gasoline?

A They could have been. In many refineries, though, they have pure benzene stock.

Q. Now, one of the items that Exhibit 8 indicates that they were going to use to control hydrocarbon odors was floating roof tanks. Do you see that on page six of nine?

A Yes.

Q. And are you familiar with floating roof tanks?

A Generally, yes.

Q. Is that a recognized way to control hydrocarbon odors coming off a gasoline storage tank?

A I understand it to be a mechanism for reducing headspace for vapor buildup.

Q. Vapor buildup escaping into the atmosphere could expose a community to benzene, true?

MS. MCELDOWNEY: Object to the form.
A Was there some level of benzene? It's certainly possible. Is it detectable above background? I think probably not.
Q. Have you ever tested the hydrocarbon odors coming off of a gasoline storage tank?
A Yes. But a smaller tank at a service station.
Q. Have you reviewed any documents in this litigation detailing how many barrels were lost per month in the gasoline storage tanks that had the cone roof tanks?
MS. MCELDOWNEY: Object to the form.
A There was one document that I had reviewed in September and I cannot remember the year now that identified numbers of barrels that they had calculated were lost.
Q. Back to Exhibit 8. Looking at this list of sources for hydrocarbon odors, you would agree that some of these sources of hydrocarbon odors could contain benzene?
A. Some of these could, sure.
Q. Are there any on here that you would expressly say would not contain benzene?
A The asphalt loading recovery rack.

Q. There's no benzene in asphalt?
A Correct.
Q. Anything else?
A. The others, I would have to review more details about that process to tell you yes or no.
Q. Now, have you reviewed the documents describing when gasoline was first discovered off site in Sugar Creek from the refinery, the Burton Spring?
A. I've seen it in summary paragraphs of some of the reports but, again, I didn't -- as far as my role went in this particular issue, I didn't spend a lot of time focusing on that.
Q. All right. Did you see the document where it described the creek at various times was flowing 25% gasoline?
A I don't recall that, no.
Q. Have you ever been to a site where a creek running through the town was flowing with 25% gasoline?
A. I certainly have been involved in a number of environmental issues where there was free product. I don't know that it was 25% gasoline.
Q. Certainly, you would expect a creek flowing 25% gasoline would create vapors in the area?
MS. MCELDOWNEY: Object to the form.
A Depending on temperature and other issues, it certainly could, yes.
Q. Are you familiar with the gasoline known as -- or referred to as DAN?
A. I think that was in one of the documents that we reviewed earlier today. I am not familiar with that particular type of product.
Q. Do you know whether or not it contains benzene?
A. I think according to that document that you showed me before that there was benzene in that product.
Q. I'm going to show you what we will mark as Exhibit 9 and ask you if you've ever seen this report?
(EXHIBIT 9 WAS MARKED FOR IDENTIFICATION.)
A Okay.
Q. Now, this -- do you understand this to be a complaint from a resident in Sugar Creek to the refinery?
A Yes.
Q. And the description of the problem was a gas fume odor in the home, right?

A. Well, this says gassy odor in house. Now, it could mean a number of things. In fact, under the comments it says the short-term solution is to minimize butane content. So, they may have believed at that time it was the butane content that was causing the odor.
Q. The description of problem, I'm looking at nature of complaint, gas fume odor in home. Do you see that? Right under nature of complaint?
A Yes.
Q. And what they determined is that, in a storage tank 142, there was a large quantity of fumes and odors coming from that roof, right?
A. Correct.
Q. And those odors and fumes were finding their way into this home?
A. Correct. And that's where the butane comes in, the light ends of gasoline.
Q. And they were describing it as a gas fume odor in their home, correct?
A. Correct. And that's generally what you smell in gasoline, are the light ends, including butane.

Q. Do you know -- I think I already asked you this. You don't know the benzene content in DAN?

A I don't offhand, no. I could look that up.

Q. Now, it was described, was it not, as a gas fume odor in the home?

A Sure.

Q. And as it turned out, when they investigated this problem, they were accurately describing what was coming from those tanks, true?

MS. MCELDOWNEY: Object to the form. If you know.

A. I'm sorry. I can't say that they were accurately describing. They did smell something. Amoco investigated. They believe that there were vapors emanating from that tank and they believe that it was the butane, the light ends from that tank. And to reduce the butane content coming from that tank.

Q. Do you think that presented a health hazard for the folks at that house to be having these DAN fumes in their home?

MS. MCELDOWNEY: Object to the form.

A I don't know that it presented a health hazard. I

certainly don't think it's a good thing for them to have it. It may be more of a safety issue than a health hazard. There's no information here that speaks to the level. So, I can't really address whether that's a safety hazard -- I mean, a health hazard, at this time.

Q. To the extent that those fumes and odors contain benzene, it wouldn't be a good thing for them to be breathing that in their house, correct?

A. Well, again, there's no indication here there was benzene in that gas or that vapor and it depends on the benzene content as to whether it's a problem or not. I certainly wouldn't want the odors my house. I would agree with that.

Q. You wouldn't want the benzene in your house if it was there either, correct?

A I wouldn't want added levels of benzene in my house, too -- either.

Q. Have you ever read the API's 1948 statement about safe levels of benzene?

A Yes.

Q. And, in 1948, did they state, and I'm paraphrasing,

that there's no safe levels of benzene?

MS. MCELDOWNEY: Object to the form.

A. Sure, I believe

MS. MCELDOWNEY: It says no absolutely safe level. I'm sorry.

A. And that was either right before or after they recommended a 50 part per million exposure limit.

Q. Do you agree with their statement in 1948 that there is no absolute safe level of benzene?

MS. MCELDOWNEY: Object to the form. Agree at the time that they wrote it in 1948 or agree with that statement today?

Q. Agree with the statement.

A No. of course not. We're all exposed to benzene at some absolute level. So, of that can't be correct.

Q. Do you think there is individual susceptibility to benzene?

MS. MCELDOWNEY: Object to the form.

A. I mean, I'm not a medical doctor to comment on that. I have not really explored that and that's not really within my area.

Q. Over time, has the standards, the allowable limits for benzene, have those grown over time or been reduced over time?

A The occupational health standards have dropped over time, sure.

Q. And those have dropped over time based on science advancing and learning more about benzene, true?

A That and, because we can reduce the levels as an extra added safety factor, they have dropped. Of course, we've had the same benzene standard for over 18 years now.

Q. Have you reviewed any studies looking at changes in the blood of workers exposed to benzene at amounts less than one part per million?

MS. MCELDOWNEY: Object to the form.

A. I mean, I've looked at a lot of literature. Again, it's generally not my area. I know there's a recent study out describing, I think, some of the Chinese workers but that's really ongoing work and I think that's still to be determined.

Q. I may have asked you this earlier but I just want to make sure I'm clear on it. Based on your calculations, using Mr. Petty's model, did you conclude that Mrs. Ryan was exposed

to benzene from the refinery?
A. I really didn't make that conclusion. I was simply using Mr. Petty's approach to look at what the number would be if you inserted more realistic parameters into his model.
Q. And what was that number?
A Well, we came up with a total exposure of value of 0.6 parts per million or ppm years.
Q. For 24 years? As a cumulative dose?
A Yes, for both the Evans home and the Huttig residency time.
Q. Point six parts per million years?
A Yes. I'm sorry it was six or -- yeah, it was point six, 0.6.
Q. So, I'm probably exposed to more benzene standing next to Wayne smoking than Nancy Ryan was for 24 years?
A If you look at the amount of benzene per puff of cigarette and, actually, the benzene content is higher in the secondary smoke than it is the inhaled smoke and you were there -- as Mr. Petty -- the number of minutes that Mr. Petty had Ms. Ryan exposed to it, absolutely you would be. In fact, he has her exposed to levels that are in excess of a refinery

worker.
Q. Well, she was there for 24 hours, wasn't she?
A As a resident, not a refinery worker. No, she wasn't there 24 hours. She was there for less.
Q. Well, refinery workers are exposed, generally, during an eight-hour period, aren't they?
A. But they're also at the source and there for an eight- to 10-hour day versus -- I know Mrs. Ryan was there for perhaps 16 hours a day at home.
Q. You mentioned that you believe there's studies showing that you're not exposed to benzene if your breathing gasoline. Are those in the materials that we've marked as Exhibit 3?
A No, I didn't say that. You can be exposed to benzene when you're around gasoline. and I believe that to be the case. But the levels are sufficiently low where the studies of individuals -- populations around gasoline do not demonstrate a benzene related disease. And that may – I don't know those particular papers are in here. That's more on the epidemiological studies of, you know, refinery workers and gasoline related workers, marketing facilities and so

forth. That's not in here.
Q. All right. I may have asked you earlier but did -- have you reviewed the Tironi study?
A. You did ask me earlier and I believe my response was that I can't cite what's in that. I may have looked at it or it may have been included in other studies that I was looking at.
Q. Why don't we go ahead and mark this as Exhibit 10? I'll just ask you if you've seen this study in the past?
(EXHIBIT 10 WAS MARKED FOR IDENTIFICATION.)
A. Oh. Yes. I actually have that in my stack of materials here.
Q. And if you run the calculations with this study, the benzene to -- from liquid to vapor ratio is actually higher than 0.28, is it not? Did you look at this study when you plugged those values into the calculation?
A I looked at the study and, actually, these numbers look comparable.
Q. Do you agree that when -- based on this study, as reported in this study, I want to ask you if you agree or disagree that a benzene vapor concentration associated with

300 parts per million gasoline vapor level would be 1.3 at 2.7 for winter and summer. Do you have any reason to disagree with that finding?
A. I'm sorry. What page are you on?
Q. I'm just looking at the comment, the introduction and the abstract.
A. I'm at Table 2, summary of gas chromatography analysis of benzene in total gasoline vapor from winter study and the first one 734 total hydrocarbons to approximately three. The next one is 500 to approximately two. Those are within, certainly, the values that I was referring to earlier.
Q. Okay. And if we applied those gasoline vapor numbers to the Drinker study, that would correlate with persons describing a strong smell of gasoline, true?
MS. MCELDOWNEY: Object to the form.
A Certainly, it could. If those particular numbers -- you mean that 700 and 500 parts per million, they may -- they would smell it. Yeah. It would be a strong, a very strong odor, considering it's thousands of times above the odor threshold.
Q. And in Table 3 from the summer study, did they not

find that there was as high as 2.36 parts per million benzene when the vapor level of gasoline was 266 parts per million?

A Yes, so that's approximately a hundred to one. Again, within the range of values that I had relied on.

Q. And, again, the 266 parts per million value, that would correspond with what the subjects in the Drinker study described as mild to moderate odors of gasoline?

A Well, again, you can't rely on that Drinker study for that. That was an atomized, heated form of gasoline versus a vapor form as would be found in this Tironi study.

Q. But my question was the parts per million gasoline vapor 266, that would be the equivalent of what was described in the Drinker study as mild to moderate odors of gasoline?

A I don't know that -- again, I can't even relate that. It's not even -- it's not relevant. They're different techniques. It's a different form of the product. It's not even relatable.

Q. Well, you're not a chemical engineer, correct?

A. No, but I am an industrial hygienist and I understand the difference between a vapor and an aerosol and a particulate.

Q. Whether or not those would correspond or not, that would be a subject matter for a chemical engineer, would it not?

A No, I don't believe so. I feel -- I'm comfortable in making that association as an industrial hygienist and also using the -- applying the same rationale that was used in the ATSDR document that said that it's not a study that's comparable to human exposures or experiences around gasoline vapor.

Q. Do you find ATSDR to be a reliable source of information on benzene?

A Generally, sure. I mean, it's a good compilation of references involving benzene toxicology.

Q. Have you reviewed their review of the benzene health literature?

A Their review of the benzene health literature? I don't know that exactly what you're describing. Sorry.

Q. Back on the sign out there at Sugar Creek, which I think we marked as Exhibits 6, do you disagree with that information, just so I'm clear?

MS. MCELDOWNEY: Object to the forms.

A. I think what I said was I disagree that benzene -- or that gasoline is a cancer hazard. I do agree with it -- benzene is a potential cancer hazard.

Q. Okay. So, you agree in part, disagree in part?

A. Yes.

Q. You do consider benzene to be a poison, right?

MS. MCELDOWNEY: Object to the form.

A. Well, dose makes the poison so it's a function of concentration.

Q. And I just -- just to be clear for the record, you've previously testified on that subject. Do you to remember the case of Wells v. Shell Oil Company back in 1998?

A I do.

Q. And you were asked, and I'm reading from page 115, line 21, "Do you consider benzene to be a poison?" And your answer was yes. Do you see that?

A Yes, sure.

Q. That was true back then, correct? In 1998?

A. Still is.

Q. True today?

A. True for any chemical -- well, not as necessarily a poison but it's a function of dose.

Q. And you consider benzene to be a cancer hazard, true?

A. Based on exposure, it can be, yes.

Q. And you would agree that something that is a cancer hazard should he warned to individuals that might be exposed to it?

A. That under specific criteria, absolutely.

Q. Based on your training and experience as an industrial hygienist, the hazards of benzene have been known for many years, correct?

MS. MCELDOWNEY: Objection the form.

A Well, which hazards are you talking about? Certainly, as a poison, certainly as to its flammability, yes.

Q. In terms of it causing blood disorders, that has been something that I believe you testified has been known in the '30's and '40's?

A Yes, as a blood disorder; not as a carcinogen.

Q. You consider benzene a dangerous product, correct?

A Again, depending on its application and use and the

exposure levels, it's certainly a candidate but certainly not in all forms.

Q. And just so I'm clear, because we didn't see this qualifier in your testimony in Wells v. Shell Oil Company, you were asked, and I can show this to you, if you like, first of all, do you consider benzene a dangerous product? And your answer was yes. And that's on page 115, line 18. Do you see that?

A Sure. In that particular case, it was because of flammability issues. They were using it around 220,000 volts in an aluminum processing facility.

Q. We'll take a break.

VIDEOGRAPHER: Here marks the end of Video Tape Number 2. Going off the record. The time on the screen is 15:38:28.

(A BRIEF RECESS WAS TAKEN.)

Videographer: Here marks the beginning of video tape number 3. Going back on the record. Time on the screen if 15:50:15.

EXAMINATION:

BY MR. WALTERS:

Q. I've marked as Exhibit 11 photographs that I think you took when you were out at the site. Is that accurate?

(EXHIBIT 11 WAS MARKED FOR IDENTIFICATION.)

A. Yes.

Q. And does this contain all of the photographs that you took that day?

A Yes.

Q. What is your hourly rate for depositions?

A. Well, $225 an hour. Not $950 an hour.

Q. I resemble that remark. And we've been going about three hours today so I'll owe you three times $225, right?

A. If we stop now.

Q. Okay. I'm about ready to stop. I think that's all I have. Thanks.

MS. MCELDOWNEY: Are you sure you're not going to ask him any more about the calculations that he's done based on Petty's reports?

MR. WALTERS: Not today.

MS. MCELDOWNEY: Because we're going to oppose bringing Mr. Spencer back before trial. So, I'm giving you

the opportunity. He gave you the one stack of sheets that just has his calculations.

MR. WALTERS: I know. But I gave Herb the opportunity to review everything at least a week in advance of deposition.

MS. MCELDOWNEY: Okay. Just so we're clear, he just made these calculations a week ago.

MR. WALTER: I'm not suggesting anything sinister. I'm just saying that that's what I afforded you, as to my experts. And, so, and that's what I expected. I understand that it wasn't anything you held back. But the realities are is that I still expected to receive anything that was original material generated by any expert. That's why I provided reports ahead of time of my people.

MS. MCELDOWNEY: And just so we're clear, I did not see these calculations and did not have an opportunity to review them with Mr. Spencer until today's deposition.

MR. WALTERS: I understand.

MS. MCELDOWNEY: So, you saw them as soon as I saw them.

MR. WALTERS: Sure, but that -- I'm the one asking

questions. You didn't have to ask questions about them.

MS. MCELDOWNEY: I understand that and I'm just saying we're running out of time if you don't choose to use the rest of the time today to ask him about those calculations, I just want that clear on the record.

MR. WALTERS: Understood.

MS. MCELDOWNEY: Okay.

VIDEOGRAPHER: Here marks the end of the deposition of John Spencer. Going off the record. Time on the screen is 15:53:01.

MS. MCELDOWNEY: The witness will read and sign.

(DEPOSITION CONCLUDED AT 3:53 P.M.)

STATE OF MARYLAND, COUNTY OF HARFORD:

I, Kimberly A. Bradley, a Notary Public in and for the State of Maryland, County of Harford, do hereby certify the within named personally appeared before me at the time and place herein set out and, after having been duly sworn by me according to law, was interrogated by counsel.

I further certify that the examination was recorded stenographically by me and then transcribed from my stenographic notes to the within typewritten matter in a true and accurate manner. I further certify that the stipulations contained herein were entered into by counsel in my presence. I further certify that I am not of counsel to any of the parties, nor an employee of counsel, nor related to any of the parties, nor in any way interested in the outcome of this action.

AS WITNESS my hand and notarial seal this day of , 2005, at Baltimore, Maryland.

_____

Kimberly A. Bradley
Notary Public

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ability 48:20
able 18:20 29:14 63:10
about 5:15 9:17 13:11 15:7 16:14,18 17:3 17:10,11 20:1,2 24:14,20 25:14,21 26:14 27:7 29:19 34:5,9 37:5 40:3,11 45:1 48:1,17 51:1 55:1 57:21 58:13,14 59:16 60:17 61:17 67:20 68:4,11,12 71:15 73:9 76:13 77:1 78:20 83:5 87:18 89:7 97:14 99:11,14,17 101:1,4
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