OFFICE OF ZONING AND ADMINISTRATIVE HEARINGS

FOR MONTGOMERY COUNTY

PETITION OF COSTCO WHOLESALE CORPORATION	:	**Case No. S-2863** **OZAH No. 13-12**

A hearing in the above-entitled matter was held on May 8, 2014, commencing at 9:41 a.m., at the Office of Zoning and Administrative Hearings, 100 Maryland Avenue, 2nd Floor Council Hearing Room, Rockville, Maryland 20850 before:

Martin L. Grossman

Hearing Examiner

A P P E A R A N C E S

For the Applicant:

Patricia Harris, Esq.

Mike Goecke, Esq.

Lerch, Early & Brewer, Chartered

3 Bethesda Metro Center, Suite 460

Bethesda, Maryland 20814

For Kensington Heights Civic Association:

Michele Rosenfeld, Esq.

The Law Office of Michele Rosenfeld, LLC

11913 Ambleside Drive

Potomac, Maryland 20854

C O N T E N T S

E X H I B I T S

P R O C E E D I N G S

MR. GROSSMAN: This is the 32nd day of a public hearing in the matter of Costco Wholesale Corporation, Board of Appeals No. S-2863, OZAH No. 13-12, a petition for a special exception pursuant to Zoning Ordinance Section 59-G-2.06 to allow petitioner to construct and operate an automobile filling station which would include 16 pumps. The subject site is located at 11160 Veirs Mill Road in Silver Spring, Maryland. That's Lot N, 631 Wheaton Plaza, Parcel 10, also known as Westfield Wheaton Mall, and is zoned C-2.

The hearing was begun on April 26, 2013, and the next session will be on May 12, 2014, here in the second floor hearing room of the COB at 9:30 a.m. This hearing is conducted on behalf of the Board of Appeals. My name is Martin Grossman. I'm the Hearing Examiner, which means I will take evidence and write a report and recommendation to the Board of Appeals which will make the decision in this case. Will the parties identify themselves, please?

MR. BRANN: Good morning. Erich Brann for Costco.

MR. GROSSMAN: Mr. Brann.

MS. HARRIS: Good morning. Pat Harris for Costco.

MR. GROSSMAN: Ms. Harris.

MR. GOECKE: Mike Goecke for Costco.

MR. GROSSMAN: Mr. Goecke.

MS. CORDRY: Karen Cordry for Kensington Heights.

MR. GROSSMAN: Ms. Cordry.

MR. COLE: Dr. Cole.

MR. GROSSMAN: Dr. Cole.

MR. SILVERMAN: Larry Silverman, Stop Costco Gas Coalition, good morning, sir.

MS. ADELMAN: Abigail Adelman, Stop Costco Gas Coalition, good morning.

MR. GROSSMAN: Good morning.

MS. SAVAGE: Donna Savage, Kensington Heights.

MR. GROSSMAN: All right.

MS. SHEARD: Virginia Sheard, Kensington View.

MR. GROSSMAN: Ms. Sheard.

MR. HLINKA: Dennis Hlinka with Sullivan Environmental.

MR. GROSSMAN: I'm sorry. With?

MR. HLINKA: Sullivan Environmental.

MR. GROSSMAN: Okay.

MR. HLINKA: Sorry.

MR. GROSSMAN: Okay. All right. Let's turn to a couple of preliminary matters. Since our session on May 1, Exhibits 556 to 562 were filed. 556 was the redline markup of Mr. Sullivan's rebuttal report sent by Mr. Goecke. That is a comparison of the final version, which is what had been filed, versus the draft before that, which is what had been

inadvertently distributed to the opposition; 557, e-mails between Mr. Goecke and Ms. Rosenfeld regarding new documents that may be used by Dr. Cole in his rebuttal testimony and Costco's objection to the documents; 558, e-mails between the parties on May 6, 2014, regarding testimony scheduled for the May 8 hearing; 559, e-mail from Ms. Cordry, submitting a report to be used during the cross-examination of Mr. Sullivan, and then 559(a) is a U.S. report on climate change: Adverse Effects from the Creation of Unnecessary Greenhouse Gases. 560 is an e-mail from Ms. Kamen, May 1, 2014, supplementing the planning staff's April 10, 2014, response regarding Intersection 16. 561 and 562 were e-mails from Ms. Cordry, one with regard to a meeting packet and pedestrian crash data and the other with documents to be used at the hearing.

The witnesses scheduled for today is Mr. Sullivan's cross and potentially rebuttal from the, from the opposition.

All right. Mr. Goecke, have you had an opportunity to winnow down your objection list?

MR. GOECKE: I have.

MR. GROSSMAN: Okay.

MR. GOECKE: And --

MR. GROSSMAN: I mean, I'm not asking you to waive any objections. It's just your own judgment on what you

want to submit as your objection.

MR. GOECKE: I have.

MR. GROSSMAN: Okay.

MR. GOECKE: Based on our discussion before, I focused on the exhibits that are news articles or non-peer-reviewed articles submitted by various universities and other institutions --

MR. GROSSMAN: Okay.

MR. GOECKE: -- and I have prepared a revised list, which I can, I can pass out at the, after the next break.

MR. GROSSMAN: Okay. All right. Any other preliminary or procedural matters?

MS. CORDRY: No. I mean, I assume we will have a further period of time now to review the revised list and respond to that again?

MR. GROSSMAN: Certainly.

MS. CORDRY: Okay.

MR. GROSSMAN: I'll give you a couple of minutes.

MS. CORDRY: No. I mean --

MR. GROSSMAN: Yes, you'll have what time you need --

MS. CORDRY: Okay. Thank you.

MR. GROSSMAN: -- reasonably; reasonably, what time you need.

MS. CORDRY: Yes.

MR. GOECKE: And if I could, Mr. Grossman, I just would like to comment on a few of the documents that have been submitted since our last hearing.

MR. GROSSMAN: Yes.

MR. GOECKE: You know, again, I'll note that we're receiving these documents less than the 10-day rule. I know that you had said you were going to enforce the rule less strictly on rebuttal. It does seem, however, that a lot of these documents could have been produced much earlier, and I'm not sure why we're receiving them so late. It is prejudicial to Costco to have to receive this voluminous amount of material in a short period of time in order to prepare for these hearings. You know, we all have other commitments and obligations on our side.

I had to go through some of these materials, and whereas I had objected the other day to the use of, I guess what's referred to as 557, the documents that Ms. Rosenfeld had submitted related to Dr. Cole and potentially Mr. Sullivan's testimony, you know, based on our initial review, we actually think these documents support our position and we're not opposed to using them today provided, however, that we may have a chance later, once we've had more time to digest these documents, to come back and comment on them. What I don't want to do is object just for

the sake of objecting and cause this hearing to go on longer than it already has.

So we're trying to move things along as quickly as possible, but I would note that, you know, this rule has been there throughout the course of the hearing. I feel like everyone has worked very hard to comply with it. That said, it seems like it's beyond a pattern now from the other side to just dump these documents on us at the last minute without even an explanation as to why we're getting them so late in the process.

MR. GROSSMAN: Well, as I understood, their response in the e-mail was that they wouldn't, considering your objection, they wouldn't attempt to use it in the cross-examination of Mr. Sullivan but, rather, use it in their surrebuttal. Was I correct, Ms. Cordry?

MS. CORDRY: Yes. I mean, I'm not sure we really were prepared now to use it for Mr. Sullivan, but we will, we will deal with that. I mean, some of these, it's just -- we all have other commitments, and some of us have commitments beyond other jobs. These were some things that seemed relevant, and we wanted to bring them in. Obviously, some of the other things we have since submitted since then were things that have issued in the last couple of days. So, obviously, I assume he's not objecting to bringing those, like the climate change reports you noticed and so

forth, but --
MR. GROSSMAN: Although I have to tell you, on the climate change, you don't really expect me to litigate out global warming here, do you? I mean --
MS. CORDRY: I do expect, when the EPA has made an explicit finding that climate change is a threat to human health and welfare and we are creating greenhouse gases here that contribute to that climate change and so forth, I do believe that that is extremely relevant, and we have tried to make that point throughout the hearing. And I think this only underscores yet again that this is not just a matter of, you know, property values and homes washing away. There is an explicit EPA finding to the effect that greenhouse gases and climate change create a public health and welfare endangerment. So, yes, we --
MR. GROSSMAN: I don't think it's going to be appropriate for me to evaluate the impact of a gas station on climate change in the context of this zoning application.
MS. CORDRY: Well --
MR. GROSSMAN: That's not, that's not what we should be about in this. That's more of a legislative kind of evaluation --
MS. CORDRY: Well --
MR. GROSSMAN: -- and it wouldn't make sense for me to try to evaluate that area of science, would it?

MS. CORDRY: Well, considering these other areas, my point is simply, if we have clear-cut determinations from the official agencies of the world, the United States, the State of Maryland, and Montgomery County that we do not believe that greenhouse gases are something we should be -- that we're doing everything we can to try to reduce those gases and if we have -- because they create adverse effects, not only just property values but human health -- and when you have a station that inherently creates idling and greenhouse gases that do not now exist in the county and do not have to exist without this station, we believe that is absolutely an inherently adverse effect of this station, I mean, I'm sorry, a non-inherent adverse effect of this station and clearly does fit within the scope.
MR. GROSSMAN: I don't think there's any dispute that there are non-inherent adverse effects, potentially, from this station. That's not the issue. The issue is whether or not I'm going to try to start evaluating evidence on climate change as it pertains to this gas station. I'll tell you right now, I am not about to do that. There's plenty of evidence in this case for me to evaluate without trying to take on that issue in the context of a quasi-judicial proceeding as distinguished from a legislative analysis, which is where it belongs.
So if you're going down that route, don't bother

because it's not going to be considered by me and, I suspect, not by the, by the Board of Appeals. It's just not something that's within the purview of this kind of evaluation. Not everything can be resolved in a special exception hearing.
MS. CORDRY: Obviously, we will abide by your determination, but I'm not quite sure why that, which is an undisputed adverse effect of this station, which is not inherent to any other gas station in this county, is somehow not something that is appropriate to be considered.
MR. GROSSMAN: All right.
MS. CORDRY: And we will continue to argue that to the Board of Appeals.
MR. GROSSMAN: There's a difference between considering the potential adverse effects of the gas station and considering something as broad as climate change. So it's such a different area that it just doesn't make sense to go into it at a special exception hearing. So there you go. Mr. Silverman.
MR. SILVERMAN: Another topic. With regard to Mr. Goecke's objections to the documents, my observation has been that throughout the hearing, as we discuss things, there's a question of should this be admissible or should we just consider the objections in terms of the weight.
MR. GROSSMAN: Yes.

MR. SILVERMAN: You seem to be more focused on the weight of the evidence, which I appreciate and agree with, and I'm just wondering if we'll have time with regard to his objections, even his long list of objections, to go through each document and discuss whether it is relevant, whether it has weight, and whether it should be admissible or whether it's going to be, whether we're going to -- whether you're thinking about a, sort of, more sweeping ruling, you know, we'll exclude newspaper articles or peer-reviewed documents, like the one the Mr. Sullivan is relying on in terms the LA and Las Vegas studies --
MR. GROSSMAN: Well --
MR. SILVERMAN: -- which is not peer-reviewed.
MR. GROSSMAN: -- as I think I said the last time or the time before, I have looked at all of the objections, and I made my kind of sweeping statements about the general way I look at it. Then Mr. Goecke said he's going to look again at his objections, and apparently he has. So then we'll look at individual, the things that remain on his individual list of objections and go through them one at a time so you have a chance to respond.
MR. SILVERMAN: That's what I was hoping. I think that --
MR. GROSSMAN: Right.
MR. SILVERMAN: -- will be very helpful to

everybody.
MR. GROSSMAN: Okay.
MR. GOECKE: And if I may return back to my original objection on Exhibit 557. So if that's --
MR. GROSSMAN: Yes.
MR. GOECKE: -- the case, that they're not planning to ask Mr. Sullivan questions about those, that's fine. To the extent we get to Dr. Cole today and that he's prepared to testify -- you know, again, we haven't had them but for 48 hours -- that's fine if they want to ask that, but we would just reserve the right to cross-examine him about those documents at a later date.
MS. CORDRY: Yes.
MR. GROSSMAN: Certainly --
MR. GOECKE: Okay.
MR. GROSSMAN: -- I think that's fair.
MS. CORDRY: I am sure we will not finish -- if we get to Dr. Cole today, I'm sure we will not finish him today.
MR. GOECKE: And then --
MR. GROSSMAN: Well, I hope we don't finish him either.
MS. CORDRY: I didn't say finish him off.
MR. GROSSMAN: I understand. Okay.
MR. GOECKE: And then the next comment I would

make is with the documents that Ms. Cordry e-mailed to us yesterday, and you know, these documents appear to be -- you know, again, we've got spreadsheets and reports that are not numbered by page, we've had less than 24 hours to review them, and it looks like she's cobbled together information from various sources. I think that this is probably something that's more appropriately addressed when she testifies about these documents rather than trying to have Mr. Sullivan talk about what she has prepared. We can address that, I guess, as we get to the questions, but I just wanted to note at the outset that we would object to using these documents in examining Mr. Sullivan today.
MS. CORDRY: I would note that, as I said in the e-mail, these documents were presented months ago. These are an updated exhibit --
MR. GROSSMAN: Not the spreadsheets.
MS. CORDRY: The spreadsheets.
MR. GROSSMAN: You mean the -- not the corrected spreadsheets.
MS. CORDRY: No. No. I mean, the original spreadsheet was presented several months ago. It's Exhibit 364(a), (b), and(c). The only changes in these documents are updating the numbers for 2013, and what I sent along was the printout pages from, directly copied from the EPA website that shows the numbers that I input on here. The

only reason I did this was, rather than have 27 different pieces of paper from the EPA website, that it would be in one set piece.
The other major spreadsheet here is one that was Mr. Sullivan's spreadsheet. So obviously, I assume, you're not going to have a problem with referring to that spreadsheet. And Mr. Sullivan has updated and has talked about updated, you know, 2013 numbers. I'm just trying to have them in a position where we can talk about the numbers from the beginning to the end in a form that we can use it.
MR. GROSSMAN: Right. If the past is any indication, Ms. Cordry uses her own spreadsheets to kind of pull together evidence that's already in the record. So I'm not sure that there's a prejudicial effect, and her concept, I think, in using them is to try to expedite the process, if I --
MS. CORDRY: Yes.
MR. GROSSMAN: -- if I gather correctly. So let's see. If you have a specific objection to something, when it's posed, then make that objection at that point. I don't want to preclude her from using a spreadsheet that might facilitate the presentation, and as I say, if you find an objection, as we go along, please raise it and then we'll handle it then. All right?
MR. GOECKE: Okay. Thank you.

MR. GROSSMAN: Any other preliminary matters?
MR. SILVERMAN: Yes. For the Coalition, I'd like to restate our concerns about conditions that are not enforceable by the Board of Appeals.
MR. GROSSMAN: You don't have to restate anything. It's on the record if you have --
MR. SILVERMAN: Okay.
MR. GROSSMAN: -- if you've made an objection previously. We're not talking about conditions right now. So --
MR. SILVERMAN: Right. Okay. All right.
MR. GROSSMAN: All right.
MR. SILVERMAN: I was just wondering if we could have Westfield as a party or through the jurisdiction of the --
MR. GROSSMAN: Well, Westfield is not a party. I can't add them in at this point. So -- all right. So are we ready to resume? You're still under oath, Mr. Sullivan.
(Witness previously sworn.)
THE WITNESS: Yes, sir.
MR. GROSSMAN: Welcome back.
THE WITNESS: Thank you.
MR. GROSSMAN: Ready to resume our --
MS. CORDRY: Yes. Yes.
MR. GROSSMAN: -- our examination?

MS. CORDRY: And I will be going to an area different from what Ms. Rosenfeld was talking about because we're not duplicating, and I will let her come back --
MR. GROSSMAN: Yes.
MS. CORDRY: -- and pick up with what she was doing there.
MR. GROSSMAN: Yes. We should note that Ms. Rosenfeld said that she has a proceeding before the Planning Board this morning. So Ms. Cordry is going to continue with the cross-examination, and by consent of the parties, Ms. Rosenfeld will pick up with her own examination later, but there won't be repetition here on what's presented.
MS. ADELMAN: Oh, careful, Karen.
MR. GROSSMAN: Yes. There's a --
MS. CORDRY: Right, I see.
REBUTTAL CROSS-EXAMINATION (Resumed)
BY MS. CORDRY:
Q All right. So I'm going to start with some questions about some of the underlying assumptions that go into all of your varying analyses from start to finish. I've given you Section 1.7.2 of your November 12th report, which was OZAH Exhibit 15(a), I believe, is the exhibit number in here, and do you recognize those pages?
A They look familiar.

Q Okay. Those would be the ones from your report that you prepared?
A They appear to be.
Q Okay. All right. And this is labeling several of the assumptions that you're working from. Can we just --
A Ms. Cordry, what is this exhibit number? Is this getting, is this -- I can refer to this later?
MR. GROSSMAN: It's not going to be a new exhibit number. It's just excerpts from Exhibit 15(a), according to Ms. Cordry, which is the exhibit number for your environmental report of November 2012.
THE WITNESS: Thank you.
MS. CORDRY: Yes, and I'm double-checking on the exhibit list, and that does appear to be the correct number.
BY MS. CORDRY:
Q Okay. So if we can just go through these very briefly, to start with. Is there any change in the assumptions that you're using here for the, subsection (a), the filling of the underground storage tank?
A Not that I can recall, no.
Q Okay. Or (b)?
A On VOCs, in general, I don't recall --
Q No, no. I'm sorry, (b), (b), part (b), the UST vent emissions.
A I'm just referring to --

Q Oh, I'm sorry.
A -- each of these points that, on VOC spillage, gasoline dispensing, breathing losses, underground tanks. We did not change those numbers --
Q Okay.
A -- since the November 2012 report.
Q Okay. And I'm sorry. Does that go beyond (b)?
A It goes to all of them.
Q Okay. Then (c), any change in (c)?
A No, not that I can recall.
Q Okay. Or (d)?
A Same.
Q Okay. Now, as far as (e), the vehicles queuing to purchase gas, can you clarify to us exactly currently what, what your numbers are and how you were applying those for the queuing cars?
A Correct, those have changed.
Q Okay.
A In 2012 the one-hour was set at 40 cars. It's still 40 cars in the February 2014 rebuttal report.
Q Okay. And are you referring to a particular page in your rebuttal report?
A No --
Q Okay.
A -- I'm just giving you the numbers.

Q Okay. Okay.
A For eight hours we previously used 20 cars --
Q Okay.
A -- and that's been updated to 32 cars --
Q Okay.
A -- for the February 2014. For the 24-hour, we had previously, in 2012, used 10 vehicles. That's been updated to 20 vehicles. And these updates are also based upon the January 2013 traffic queuing analysis at Sterling that Mr. Guckert's company provided for us.
Q Okay. I'm sorry. You're using 20 now for each of the 24-hour and annual averages?
A No, 24, 24 hours --
Q Okay.
A -- and annual average was 10 in both cases. No, that did not change.
Q Okay. I thought it had gone to 18 for --
A We're using 20 cars for 24, and 10 for annual.
Q Oh, okay. Okay. I thought you said it was 10 for each. Okay. So 20 cars for the 24 hours and 10 for the annual average. Okay.
A Correct.
Q All right. Now, turning to the roadways, which is something that Mr. Guckert testified about quite a bit and that you testified about a little bit, if we look at the

next page here, which would be page 43 of your November report, this shows Exhibit 10 from Mr. Guckert's report, is that correct, from his original traffic report?
A That's correct.
Q And his original traffic report would have been OZAH Exhibit 11(a). Okay. And this is -- and I think we all understand, I think we all agree -- this represents his best projections for the total weekday peak-hour traffic with all of the background additions and including the warehouse and the gas station, is that correct?
A That's my recollection.
Q Okay. So these are the numbers you were using to analyze, when the gas station is up and in operation and the warehouse is operating and so forth, these are the numbers you would be using to try to analyze what the overall emissions from the station area would be, is that correct?
A These, these numbers were the basis for our emissions assessments for roadways.
Q Okay. So the figure 10 numbers? Okay.
A Correct.
Q All right. And did you use any changes from these numbers when you were doing your rebuttal report?
A We did not.
Q Okay. And I look at page 45 then in the same excerpt. This is at Table 1-7, which says: Updated traffic

count used in this 2012 analysis. This was updated from what? Do you recall?
A I don't recall.
Q Was there a previous set of traffic counts? Did you work on this kind of an analysis with the earlier special exception application?
A I don't, I don't recall what update this is referring to.
Q Okay. So you don't recall if you had earlier numbers with the other application?
MR. GROSSMAN: He just answered it twice now --
MS. CORDRY: Okay.
MR. GROSSMAN: -- he doesn't recall.
MS. CORDRY: Okay. All right.
BY MS. CORDRY:
Q All right. And are the numbers on this table, are they derived from the figure 1-13 numbers, the ones that were Exhibit 10 in Mr. Guckert's report?
A I believe they were, but I'm not prepared to go number by number to confirm that right now, but that's -- that would be my recollection, yes.
Q Okay. And one of the things I'm a little bit confused about is because you've got here, if I count them up, roughly, close to 40 intersections listed and Mr. Guckert had 20. Do you know how these intersections you

have listed here correlate with Mr. Guckert's intersections?
A I do not recall.
Q Okay. Is there any list anywhere that you have in your records that correlates those?
A I just don't recall.
Q Okay. Do you recall how you got from the numbers, using the numbers on Figure 10 to creating this particular chart?
A Well, I know for a fact that we used the peak between morning and afternoon rush as our basis and we interpreted Mr. Guckert's figure and used those figures, to the best of our ability, to come up with these counts that we then modeled, assuming that within the ring road -- the intersection along the ring road and inside -- that the peak value, which was evening, was used all the time the mall was open.
Q Okay. And we'll get to that --
A For the roadways --
MR. GROSSMAN: He's speaking.
THE WITNESS: -- beyond that, we used the peak count as a reference point and then scaled it by hour of day.
BY MS. CORDRY:
Q Okay. What I'm still trying to get to just at this point is trying to figure out, where you have, for

instance, an intersection labeled University Boulevard Southwest 1, parenthesis 4, how does that correlate to any of the 20 intersections on Mr. Guckert's Exhibit 10 here, the one that you have labeled as Figure 1-13? That's where I'm trying to see if -- trying to correlate these numbers and cross-check them.
A Well, I'm not, as I say, I'm not going to be able to today, as I sit here, go through and tell you every, every derivation --
Q Okay.
A -- but of course, we're modeling queuing at intersections, as well as free-flow. So we can break up intersections on that basis where Mr. Guckert could have had one. So there's clear reasons why we would have more than he may have shown in his analysis.
Q Okay. But at this point, you can't, you can't correlate for me which, which are which?
A I can't go through intersection by intersection, as I sit here today, and reconstruct on the stand --
Q Okay.
A -- where each one of these numbers came from --
Q Okay.
A -- but I gave you the general indication of what we did and that would apply.
Q Okay. All right. So there are a couple of ones

here that I can correlate. If you turn to the last page, 46, the only ones that I can find that are, that clearly seem to correlate --

MR. GROSSMAN: Well, wait a minute. You can't testify.

MS. CORDRY: Well, I'm just going to ask him if he agrees with me that on page 46 there's one labeled Intersection 16, one labeled Intersection 20, and there's one labeled Intersection Gas Station. Those are --

MR. GROSSMAN: I'm sorry. Which page? Which page are you on?

MS. CORDRY: Page 46.

MR. GROSSMAN: Okay.

BY MS. CORDRY:

Q I'm assuming those are the same Intersection 16 that Mr. -- and these are labeled as Ring Road sites -- so I'm assuming these are the same 16 and 20 that Mr. Guckert has on his exhibit?

A I believe they are, yes.

Q Okay. And then there is, on the bottom of his Exhibit 10, which is your Figure 1-13, there's a small -- which is on page 43 -- at the bottom there, there's a small circle that doesn't have a number for it but appears to be located at the site of the gas station.

A That's correct. That would be called the Gas

Station Intersection.

Q Okay. So that is the one then that you were using as Gas Station Intersection on page 46?

A The one that's labeled Intersection Gas Station --

Q Yes.

A -- on page 46 would be that unnamed circle on --

Q Okay.

A -- Figure 10 -- Exhibit 10.

Q And you took these three intersections, and you averaged those to come up with a, what you have put there, just above there, as an asterisk Ring Road South Average?

A That is correct. We averaged --

Q Okay. Okay.

A -- Intersection 16, 20, and the gas station to come up with an estimate of traffic on the southern ring road.

Q Okay. And on the page before that, that's what's labeled RING5 with the asterisk there right at the bottom of the page?

A Ring Road 5 is the southern ring road.

Q Okay. And that's that average that you just did?

A Correct.

Q Okay. All right. And I think, as you just indicated again, because you were using this weekday peak average, you've been using that -- well, let me come back.

You initially had been stating through most of your reports that you were using that peak hour for all the time that the station was open, is that correct?

A That peak hour was used for all the hours the station was open, that's correct.

Q Okay. And I may have just missed it. Did you say, are you doing something now --

A We --

Q -- with the most recent report?

A No. We're still using that extremely conservative approach of assuming that weekday p.m. peak --

Q Okay. I thought --

A -- occurs all the time, not just --

Q Okay.

A -- during the weekday period, but every hour and every day of the week.

Q Okay. I thought I heard you say something about using a scaler now or something. Was that --

A No. The scalers have always been used for the roadways outside the ring road.

Q Okay. So the roadways outside the ring road.

A Public roads.

Q Okay. All right.

A I should not so call it public roads. Roads outside the mall area.

Q Okay. So where are you distinguishing between outside the mall? Are you just -- are the only ones you're saying that you used the peak hour for, the ring road themselves, intersections, or are you using the ones, the direct entrances to the mall as well?

A My recollection is, the intersections involving the ring road --

Q Okay.

A -- the ring road itself --

Q Right.

A -- and parking lot activity is all based upon the use of the peak weekday traffic counts from Mr. Guckert.

Q Okay. And for, let's say -- okay. So Intersection 16, for instance, as we've gone through ad nauseam, is the intersection where the Valley View entrance comes up to the ring road. Where Valley View and University Boulevard comes together, is that something you're saying you have used a scaler on, on that kind of intersection there?

A Wait. Which, which --

Q Okay.

A -- which point are you referring to in this Figure 10?

Q Okay.

MS. CORDRY: Can I borrow the magic pointer?

MR. GROSSMAN: Certainly. You know I love when it's used.
MS. CORDRY: Yes, I know.
MR. SILVERMAN: Mr. Grossman, I --
MR. GROSSMAN: You don't want to object to Ms. Cordry's question, do you?
MR. SILVERMAN: No. I just want a definition of scaler, and I wasn't going to ask, but Dr. Cole just asked me the question. So if he doesn't know, nobody does.
MS. CORDRY: All right. Well, we'll get to that in accordance.
MR. GROSSMAN: All right.
BY MS. CORDRY:
Q All right. So the one here that I'm pointing to, which is Intersection 16 at the intersection of the Valley View entrance and the ring road, that is one you said you used the peak-hour number for the entire time the station is open, correct?
A My recollection is, anything along the ring road or inside, my recollection is we used the peak hour. Roadways beyond, such as Veirs Mill, University, and Georgia Avenue, we'd have addressed those by hour-of-day scaler.
Q Okay. And by a scaler, you mean that if the peak hour is 100 percent, then noon might be 70 percent of that. So you would take 70 percent of the peak hour and use that

as the figure you were using. Is that, is that what you mean by that, or --
A Well, putting aside that --
Q -- tell us if it's something else.
A Putting aside that I'm not -- you're using an example; you're not saying that it is 70 percent.
Q It's just an example.
A We are using the scaler relative to the peak based upon standard typical traffic flow during the course of a day, to be able to more accurately account for diurnal changes in traffic as it relates to meteorology.
MR. GROSSMAN: Since that question was asked, what is a scaler, you're saying a scaler is a percentage of the full amount?
THE WITNESS: Or a fraction of the full amount, of the peak amount.
MR. GROSSMAN: Okay.
BY MS. CORDRY:
Q Okay. Do you know if that scalers, scalers you're using have ever been put into the record in the case to this point?
A They have.
Q And where would that be?
A On the data disks that were provided for the modeling, November 2012.

Q Okay. And do you know if your reports have specifically referenced -- the written reports as opposed to the data disks, have they specifically referenced that you were using these scalers for the roads outside the ring road?
A I don't recall if it's in the text, but it clearly is shown in the modeling files.
Q Okay.
MR. GROSSMAN: How exactly does this tie in with his direct rebuttal testimony? That's --
MS. CORDRY: Well, his rebuttal testimony, well, he's talked a great deal about how conservative it is and what the numbers are and what he's doing, and I'm setting up what I understand him to be saying, and we're going to, in just a moment, see where it goes to the question of the conservatism in his numbers.
MR. GROSSMAN: Okay.
MS. CORDRY: So I'm just trying to understand for sure just now what it was he was doing, because I will say, not having tried to go through every line in the data disks, I was not aware until this point that there was actually scalers being used on the roads outside the ring road. I was reading the testimony about, or the reports about using the peak hour and the conservatism that, as applying across the board. So that --

MR. GROSSMAN: I understand. I'm not trying to limit you --
MS. CORDRY: No.
MR. GROSSMAN: -- except that we do have to limit to the direct rebuttal --
MS. CORDRY: Right.
MR. GROSSMAN: -- and I just want to make sure that you're tying that in.
MS. CORDRY: Yes, it is. Well --
MR. GROSSMAN: Okay.
MS. CORDRY: -- he's testified about the traffic he used and how conservative that is and what the peak hours were and so forth. So that's what I'm trying to get to right now.
BY MS. CORDRY:
Q Okay. Would it be possible -- I don't know if we'll get to this today; if we don't, we don't -- but is it possible during the day to get that correlation? Presumably, I assume, you have a sheet somewhere that says the correlation between the various intersections and -- in Mr. Guckert's report and your intersections. Is that possible?
A Today? I would say -- I would say, no.
Q Okay. It does still exist, though, somewhere?
A We can certainly reconstruct it, but I can't

reconstruct it on the stand --
Q Okay. I'm just --
A -- and I'm not going to reconstruct it without an opportunity to quality control it. So I'd suggest referring to Mr. Guckert's report and my modeling files to make that evaluation.
Q Okay. And in terms of the data you got, the figure 10 and so forth, did you just get Mr. Guckert's report and work from that, or did you have any face-to-face discussion with him about the traffic numbers?
A Myself and my staff did have communication by phone with Mr. Guckert about the report and based our analysis on his direct report and those discussions.
Q Okay. So you've had phone conversations but not face-to-face meetings on it?
A I don't recall face-to-face. I do recall phone --
Q Okay.
A -- contact.
Q All right. If we stick to, let's say, Intersection 16 and 20 and the gas station intersection, which we know where our correlation is coming from, can you tell me exactly where in Mr. Guckert's report you got the numbers that you have showing here; that, for instance, Intersection 16, it shows 379 for the morning peak and 824 for the evening peak?

A The -- well, it's right from Mr. Guckert's report.
Q Well, I understand, but where? He had a lot of numbers in his report. Can you -- do you know where in that report they came from?
A You're referring to Intersection 16?
Q Yes.
A He shows, he shows which vehicles are turning into that area, and the count, the counts are based upon -- for example, 16, we have counts of 338, 79, 296, and 111. Those are the various components that tied into the ring road. So that totals 824 for Intersection 16.
Q Wait a minute. Let me, let me -- and are you getting that from Exhibit 10?
A Correct.
Q Which, of course, is pretty unreadable. So let me, let me, instead of doing that, let me show you, than trying to read off that particular chart there, which is pretty unreadable, let me hand around again what we have used at the previous discussions, which are the printouts of the pages from Mr. Guckert's report.
MS. CORDRY: I found some extra copies of this. So --
MR. GROSSMAN: Thank you.
MS. CORDRY: -- I made it again.
BY MS. CORDRY:

Q What we have, the second page of that is -- the second page of that is Intersection 16, is that correct?
A I need to get some glasses, sorry.
Q Okay. I understand the feeling well, which is why I was trying not to squint at this particular printout in your chart too.
A I'm sorry. What was your question, Ms. Cordry?
Q Okay. If you just look at the second page there, which is marked, it has handwritten 16 at the top. Do you see that?
A Yes, I do.
Q Okay. And that's labeled West Mall Access, Valley View Avenue, and Loop Road under Vehicle Turning Count Movement, and then directly under there it says, Intersection of Loop Road and West Mall Access, Valley View.
A I guess I don't see that. I see Vehicle Turning Movement Count Summary.
Q Okay. Right up here at the top.
A On page 97, you're showing --
Q Yes. Yes.
A -- of his document?
Q Yes.
A I'm on page 97.
Q Okay. And at the top, under Vehicle Turning Moving Count Summary, directly under there it says,

Intersection of Loop Road and West Mall Access, Valley View Avenue.
A Okay.
Q Okay. So this is Intersection 16.
A I see that, yes.
Q Okay. All right. And it labels about halfway down there peak hour, 8:30 to 9:30 in the morning.
A Peak hour, 8:30 -- okay.
Q What's the number it has there?
A Ms. Cordry, I can tell you it's 144, but if you want to know how I reconstructed my numbers --
Q No. I'm asking you, what is the number that is listed as the peak-hour total there on the --
A Well, it's 144.
Q 144? Where are you getting that?
A You said, 8:30 to 9:30, peak hour?
Q That's only for one set of turning movements. All the way at the left-hand page --
A I'd like to just say for the record that I haven't looked at this data for years. I can tell you exactly what we did to come up with our numbers for the southern ring road, but I'm not going to be able to reconstruct from this particular table here --
Q Well, I'm asking you --
A -- in a quick period of time.

Q -- you said you were using Mr. Guckert's data. So I'm asking you, with Mr. Guckert's data here, which he has verified on his testimony, this number here, which is the total number of cars, the number on the left-hand side is the total number of cars --

MR. GROSSMAN: You mean the right-hand side.

BY MS. CORDRY:

Q I'm sorry, the right, north and south and east and west. Would you read that number for us?

A I can read, I just want to clarify, I can read numbers all day if you want, but my point is we relied upon Exhibit 10, and I can give you the basis for each intersection, but for me to go through these and verify numbers, I'm not going to get you where you want to go.

MR. GROSSMAN: Okay. So just, she's asking you to read that number on the right-hand, extreme right-hand column for the total of Intersection 16 peak hour, 8:30 to 9:30. What does it say?

THE WITNESS: It says 593.

MR. GROSSMAN: Okay.

BY MS. CORDRY:

Q Okay. And this is a number that was taken, the existing traffic, correct, the September reports?

A I don't recall the basis of this table.

Q Okay.

A Our data did not come from this table. Our data came from Exhibit -- information like Exhibit 10, the figures shown in his report.

Q We will get to Exhibit 10 in a moment, but let's just stay with this. This was, I think --

MR. GROSSMAN: Well, he's already --

MS. CORDRY: Okay.

MR. GROSSMAN: -- he's answered the question. He's given you the number that it says on that table. He says he didn't use that table to derive his figures --

MS. CORDRY: Well, I am --

MR. GROSSMAN: -- he used Exhibit 10, which is not an OZAH exhibit; it's the exhibit 10 from the traffic report, which is a diagram. --

MS. CORDRY: I know, and I will ask, I will ask him to add the numbers up on Exhibit 10 again if he wants to, but that -- we also did this with Mr. Guckert last week, and they are not going to come out to the numbers he has here. That's my point and --

MR. GROSSMAN: Well, we'll find out.

MS. CORDRY: Okay.

MR. GROSSMAN: You can ask him about how he derived his numbers, which is what he's saying. He did not use the table that you just referenced. He used --

MS. CORDRY: I understand, but I'm asking him

if --

BY MS. CORDRY:

Q Mr. Guckert, you do recall that Mr. Guckert testified and that these are the numbers of the existing traffic at those intersections?

MR. GROSSMAN: That's not the point. The point is he said he didn't use that table. How many times are you going to ask him the same question?

MS. CORDRY: The question I was going to ask him, after he simply read the number, was, is this number for existing traffic already substantially higher than the number you say you were using for all of the traffic in the mall plus the background plus the gas station.

MR. GROSSMAN: Well, all right, you can ask him that question, but you --

MS. CORDRY: I was trying to get there, because all I wanted him to do was read the 593 so we could compare it.

MR. GOECKE: Excuse me. Where's the 593 on this chart?

MS. CORDRY: Right here.

MR. GROSSMAN: 593 is the column, she's --

MR. GOECKE: 573?

MS. CORDRY: You're on Exhibit 4.

MR. GOECKE: Thank you.

MS. CORDRY: I mean, Intersection 4.

MR. GROSSMAN: Extreme right-hand column --

MS. CORDRY: Right.

MR. GROSSMAN: -- of --

MR. GOECKE: I found it. Thank you.

MR. GROSSMAN: Okay.

BY MS. CORDRY:

Q Okay. So if you will accept for the moment Mr. Guckert's testimony that this is the existing traffic at that intersection, is that not already substantially higher than the number you were using for the final total with background and with gas station?

A No, not.

Q 593 is not substantially higher than 379?

A For Intersection 16?

Q Yes.

A We use 824.

Q That's the evening. I'm talking about the morning peak hours.

A We didn't use the morning.

Q Okay. Then we'll look at -- we're doing this one at a time -- look at the bottom. This is the evening peak hour.

A Okay.

Q And what's that number?

A That number says 1037.
Q Okay. Is that not substantially higher than 824?
A It's higher than 8 -- but, again, I don't know the basis for these numbers. It is higher, clearly higher than 824, but I'll say again, we relied upon Exhibit 10 in his report, not this table.
Q All right. Well, we'll get to Exhibit 10 in a moment. Just try not to jump ahead too fast. I'm trying to take this step by step. So the existing numbers are higher than the numbers you have here?
A I do not know the basis for this table you're referring to versus the numbers we used.
Q Okay.
A I'll tell you what I used --
MR. GROSSMAN: Stop going over that over and over again. He's already said it at least four times. He didn't --
MS. CORDRY: Okay. I'm --
MR. GROSSMAN: -- use that table.
MS. CORDRY: Well, whether he used it or not, the record in this --
MR. GROSSMAN: I know, but he's answered the question. Just --
MS. CORDRY: Okay.
MR. GROSSMAN: -- move on to the next question.

MS. CORDRY: I am trying to move on. Please, I really am, because I am trying to find, for instance, where he came up with the numbers for this; so we'll get there.
MR. GROSSMAN: I understand.
MS. CORDRY: All right.
MR. GROSSMAN: He's already answered he does not know where these numbers came from in the table --
MS. CORDRY: Well --
MR. GROSSMAN: -- you were just reading from.
MS. CORDRY: Okay.
MR. GROSSMAN: He's used Mr. Guckert's Exhibit 10 --
MS. CORDRY: All right.
MR. GROSSMAN: -- from his original traffic count report to get his numbers. That's what --
MS. CORDRY: And I am --
MR. GROSSMAN: -- that's what the witness has testified numerous times now.
MS. CORDRY: All right.
MR. GROSSMAN: Now, whether they're correct or incorrect is a different question. That's -- he's answered what his knowledge is and what he used.
BY MS. CORDRY:
Q All right. Let's go to Exhibit 10. Did I give you a copy of that yet?

A I have Exhibit 10.
Q I have them, which are a little bigger than -- and, actually, I have Exhibits 3, which are the existing peak-hour traffic volumes, which are what are showing on that chart there; then Exhibit 7, which Mr. Guckert testified were added in the background peak hours, I mean, I'm sorry, the additional --
MR. GROSSMAN: Just to make sure, the exhibits you're referring to now, the numbers are Mr. Guckert's exhibits?
MS. CORDRY: Yes, these are Mr. Guckert's numbers from his Exhibit 11 --
MR. GROSSMAN: Right.
MS. CORDRY: -- that we went over in his testimony.
BY MS. CORDRY:
Q Exhibit 7 is the background, adding in the background peak hours --
MR. GROSSMAN: Let's try, whenever you refer to a Guckert exhibit number, call it Guckert Exhibit No. --
MS. CORDRY: Okay.
MR. GROSSMAN: -- so that we don't get --
MS. CORDRY: All right.
MR. GROSSMAN: -- the record confused as to what exhibit numbers you're referring to --

MS. CORDRY: Right. Right.
MR. GROSSMAN: -- since he uses the same numbering system for different exhibit numbers.
MS. CORDRY: Right, and then we have numbers and we have figures and we have appendixes --
MR. GROSSMAN: Right. Right. Right.
MS. CORDRY: -- and yes, it gets very elaborate quite often.
BY MS. CORDRY:
Q All right. Let's skip over Exhibit 7. We'll just go to Exhibit 10. It's a little bigger; so it's a little easier to read here.
MR. GOECKE: I'm sorry. Is this Guckert 10 or --
MS. CORDRY: This is Guckert 10, yes.
MR. GOECKE: Thank you.
MS. CORDRY: And I unfortunately did not throw in the big calculator that I had here, but we can look at this as we go through. One moment.
BY MS. CORDRY:
Q If I read around Intersection 16 there, which is in Inset A, for the evening peak hour, which are the numbers that are in the parenthesis, correct?
A That's correct.
Q Okay. Starting on the left-hand side, I have 363, 338, 296, 111, 79, and 280. Is it your statement that those

numbers add up to 824?
A No, it's not.
Q Okay. What do they add up to?
A Well, we didn't use all the numbers you just mentioned.
Q Okay. So which numbers did you use?
A We used 338, 79, 296, and 111.
Q Okay. So we left out the 363 and the 280, and those are -- so even though they're coming through that intersection, you're not counting them because they are going left and right at that intersection; they're not coming down towards the station?
A They're not going to the south. I'm modeling the south ring road with this. I'm referring to the segment that goes from Intersection 16 south, Intersection 20. We're modeling cars going to the south along that road, and those four numbers I just gave you were the basis for the 824 that we used.
Q Okay. So those cars that are sitting there and idling perhaps or coming through that intersection, you're not counting them in your analysis of how much traffic there is there?
A That's not correct.
Q Okay. So what are you doing with those other numbers, the, what did we say, the 280 and the 363?

A We're modeling that. At that intersection, there's a queue there. We're modeling the queue. I thought you were asking about the southern ring road and the basis for the, how we, I averaged 16, 20, and the gas station intersection. Yeah, we used the numbers you said, but of course we modeled each intersection as well.
Q Well, that's all a part of Intersection 16, isn't it? Is there anything in here that indicates that this is, that you're, that you're modeling only half of Intersection 16 or two-thirds of it, I guess?
A I don't know why you'd assume that. In the --
Q Well --
A -- our November 2012 report and the modeling files that accompany it clearly show we modeled each intersection as well as the ring road and University and all the, and the rest that I described.
MR. GROSSMAN: So are you saying that when you modeled the intersection, you used all the numbers but, when you modeled the southern ring road, you only used those to indicate traffic along the southern ring road?
THE WITNESS: Correct. When we're modeling the queue, we're modeling all the cars that would be involved in that queue, which are where they're going to turn afterwards, but when modeling the southern ring road, we just use cars that are going to the south towards Target,

Costco, and so forth.
MR. GROSSMAN: All right. It sounds to me, Ms. Cordry, that that would account for the difference --
MS. CORDRY: Well, it --
MR. GROSSMAN: -- in the numbers that you apparently observed.
MS. CORDRY: Well, it would if I could figure out where this, where it shows that there is some other place where those numbers come in, because --
MR. GROSSMAN: You mean the -- well, Mr. Sullivan has testified that there is a separate modeling for each intersection in which all the numbers are considered.
MS. CORDRY: Well, that's what I'm trying to figure out, because, you know, this labels -- the RING5 is labeling Intersection 16 as such, and it doesn't say that it's only analyzing part of the intersection 16 numbers.
MR. GROSSMAN: You're looking at Mr. Guckert's things.
MS. CORDRY: No, no. I'm looking at Mr. Sullivan's numbers here --
MR. GROSSMAN: I see.
MS. CORDRY: -- and I'm trying to determine where else those numbers would, the 363 and the 280, would show up.
MR. GROSSMAN: All right. Well, let's get that

answer. Where else in your materials would that show up?
THE WITNESS: If you want to see the actual basis for our emissions for each of the intersections, which are the Area 1, 2, 3, and so forth, sources in our files, you need to look at our data disks and the files that, and the spreadsheets, that describe how we handled the queues and what the basis for those numbers were, but that's part of the data disk package. And, I mean, I can't reconstruct each one now, but I'm saying those numbers haven't changed since we provided those a year and a half ago.
BY MS. CORDRY:
Q Okay. Because I'm just, I'm just looking at this and I can't -- you know, if you take out those other two numbers, that's 643 additional cars compared to the 824 that you have listed there as Intersection 16. I mean, I don't see any place where --
MR. GROSSMAN: No, but now he's answered that.
MS. CORDRY: Well, no. I'm just trying to look on, whether, is it included in any of these other RING1 numbers or something like that? Are they separate there, because I don't see it there either? I'm just trying to --
THE WITNESS: Again, I'll refer you to the -- I'm sorry. I'll refer you to the data disk for the detail, detail, but it's all there.
BY MS. CORDRY:

Q Okay. And that would be the same thing -- if the numbers for Intersection 20 are also substantially lower here, then the numbers that are shown in Exhibit 10 for the entirety of Intersection 20, that would be your same analysis, that you're only counting the directions that go towards the store?
A Well, that question, I can't -- that's not a clear question to me. Can you repeat that, because I'm not sure even what you're asking me.
Q Okay. Well, the question is, if I went through the same analysis with Intersection 20, again, the numbers that you have here are substantially smaller than the totality of the numbers listed on Mr. Guckert's Exhibit 10 at Intersection 20.
A Are you referring to the cars going to the south --
Q Well, I am --
A -- is lower than the total intersection? Is that the question?
Q Yes. What I'm saying is, where you labeled here Intersection 20 and the numbers you have labeled here are, again, substantially smaller than the totality of all the numbers listed on Intersection 20 on Mr. Guckert's Exhibit 10.
A Well, my statement would be that the vehicles

going to the south is a smaller number than all the vehicles associated with that intersection because some are going different ways.
MR. GROSSMAN: So, essentially, it's the same --
MS. CORDRY: So that's the same --
MR. GROSSMAN: -- same analysis --
MS. CORDRY: Okay.
MR. GROSSMAN: -- as applied to Intersection 16.
MS. CORDRY: All right.
BY MS. CORDRY:
Q Now, as far as the gas station intersection, should that include all of the numbers?
A I can tell you the numbers we included and our basis for those numbers.
Q Okay.
A And the basis would be the 67 vehicles --
Q Okay.
A -- the 130 --
Q Okay.
A -- 80, and 94.
Q And the ones you excluded are the 67 and 80 that are coming out of that road and traveling along the ring road there?
A They're already counted, is my recollection, in the other numbers, the numbers for the southern ring road.

So those were not added. It would be duplicative to add those in, but the -- but if you add up the four numbers that are applicable, they total the 371 for that intersection. 67, 130, 80, and 94 are the ones that are separable from the ones already counted.
Q And how did you determine that those have already been counted in the ring road?
A My recollection is -- and, again, I haven't reconstructed this in a long time -- is that they're included in the ring road numbers already, in those counts. The vehicles going towards 16 or 20 would be included in those counts.
Q Now, are you familiar with Dr. Adelman's testimony that based on his observations, that the actual average evening peak-hour traffic volumes were about 15 percent higher at Intersection 16 than the number that Mr. Guckert was projecting?
A I don't recall hearing Dr. Adelman's testimony.
Q If, in fact, the traffic there was about 15 percent higher, would that affect your numbers at all?
A You need to give me some context for Dr. Adelman's analysis.
Q Okay. Dr. Adelman testified that he and Mrs. Adelman sat at Intersection 16 for, I think it was about eight or 10 nights in April and May and actually did

counts again of that intersection and that the numbers there, rather than the 1291 -- and for this purpose, Mr. Guckert counted all of the cars at the intersection as did Ms. Adelman and Dr. Adelman -- that as opposed to the 1291, which was the total that Mr. Guckert was projecting at the intersection there, that they actually counted 1494.
A So what, I'm sorry, what's your question?
Q Well, so the question is, okay, that number is about 15 percent higher. If, in fact, the evening volume was about 15 percent higher than what Mr. Guckert was projecting, would that affect your numbers?
A I'd have to analyze the representativeness of their analysis as compared to Mr. Guckert's analysis relative to when the store opened and what was going on. I mean --
Q Okay.
A -- it takes, it would take analysis, and I haven't done that analysis.
Q Okay. Well, I'm just asking you as an expert, if you accept the fact that they took numbers after the store opened for 10 days and not just one, as Mr. Guckert did, eight to 10 -- I forget exactly the precise number, but the exhibit is in the record -- and if over those eight to 10 days the number was 15 percent higher overall than what Mr. Guckert was projecting, would that affect your

calculations?
MR. GROSSMAN: And I think it's a fair question as far as it goes, but I think to be clear in the question, are you asking whether or not that 15 percent increase applies to the cars going south onto the ring road, which is what he based his on --
MS. CORDRY: Right.
MR. GROSSMAN: -- or overall? So that's the --
MS. CORDRY: Well, that would be the first question. I don't actually think we put in there, but I, we do have the numbers from Dr. Adelman and Ms. Adelman, and we can put them in in the surrebuttal that would indicate. My recollection was that of the total increase, more of it was going south than was going the other way. So it was actually disproportionately more than 15 percent, but let me just stick with the 15 percent for now.
MR. GROSSMAN: All right.
BY MS. CORDRY:
Q If the number of cars going south was higher by 15 percent than what you were assuming, would that affect your calculations?
A Well, obviously, if I increased all my traffic numbers by 15 percent, the emissions would go up --
Q Okay.
A -- and the concentrations would go up

proportionately.
Q Okay.
A Of course, it does depend -- it depends how much of those are intersection emissions versus southern ring road. The significance of those sources isn't very large. So when you say will it -- it won't affect my analysis proportionately 15 percent, most likely.
Q I understand, but it does mean that your numbers go up?
A Well, again, without context for those numbers, I'm in no position to judge the representativeness of those numbers versus Mr. Guckert's numbers. What hours of the day? Was it complete? What were the conditions when they did their analysis versus Mr. Guckert? When did the store open? I mean, there's a lot of factors --
Q Right.
A -- that could easily produce a 15 percent swing either way.
Q Right. Again, remember, we are talking about an average over eight to 10 days and not a single day, as Mr. Guckert's report was taken on. All right. Another piece of this is, we also then, Mr. Guckert then did a separate analysis on the weekend, correct --
A He did.
Q -- after the store opened? All right. And at

that point, if we -- we went through with the testimony that the intersection 16 traffic on the weekend, the peak hour on the weekend was 1899 total versus the 1467 that you would count up from Exhibit 10, his, Guckert Exhibit 10. So, again, I'm talking about the total cars on the intersection. So that number, 1899 versus 1467, roughly a third higher, would you say?
A I don't recall -- I recall evaluating the effect on the southern ring road. I don't recall the evaluation of Intersection 16 specifically, but if you're asking me is 1800 versus 1400 about a 25 percent difference or 30 percent, it's in that range.
Q Yes. Yes. And do you recall in his testimony on the last time or two on the stand that he agreed that the peak weekend traffic did appear to be higher overall in the area right around the mall on the ring road and right around the mall than during the weekdays?
A What I recall him saying is that the peak hour during the weekend, which occurs around noontime, was higher than the peak value that occurs in the evening during the weekdays.
Q Do you also recall him testifying that, and agreeing with me, that in fact the peak of the -- the peak period over the weekend was longer overall than for the weekday hour, that it was not as much of an up-and-down

peak, that there was a longer, broader peak on the weekends?
A I don't -- not sure I recall that exact testimony.
Q Well, exact, I mean, it's probably not the exact words because I don't know that I have that report back in yet, but do you recall that general statement, that in fact the weekend peak was higher and longer overall than the weekday peak?
A I recall it was higher. I don't fully -- I mean, I don't remember the extent of how flat or spikey that peak was. I'll accept, if you said that, that could be in the transcript, then that's what he said.
Q Okay. So if we can assume that there are at least two hours each day on the weekend that are higher than the weekday peak, that would mean that the -- let me, okay, let me back up. You've talked at different times that you were looking for the 175th highest hour of the year, correct? I think that that was -- in some of your calculations, you'd use that number?
A We modeled NOx, yes, that's correct.
Q Okay. All right. So if you take 52 weeks a year, two weekend days, that's 104 weekend days, right?
A Sounds right.
Q Okay. If you have two hours each one of those days where the weekend peak is higher than the weekday peak, that would be 208 hours.

A Okay.
Q Okay. So that would indicate that the, assuming what we've been saying up until now is all correct, that the 175th hour falls within the weekend peak time, doesn't it --
A No.
Q -- not the weekday?
A It does not.
Q Well, if we said 208 days --
MR. GROSSMAN: Well, let's ask him why.
MS. CORDRY: Okay. All right. Sure.
BY MS. CORDRY:
Q Tell me why.
A One rather important factor you're omitting is the point I made earlier, is that the weekend peak occurs during midday, around noontime, when we have excellent dispersion conditions, tends to have higher wind speeds, less impact per gram emitted to the atmosphere than in the evening when the evening peak during the weekdays happens around 7:00 p.m. or so, when we have, we have much more restricted dispersion conditions, and those factors are important relative to a, you know, 15, 20 percent difference you're going to see in the peak values weekend/weekday.
Q Okay. Well, in the first place, you were talking before that the 175th traffic volume hour, I thought, and now you've gone, you've moved away from the traffic and now

you're talking that -- you're going to your whole dispersion analysis to decide what the 175th hour is?
A Well, the --
Q I thought before -- yes, go ahead.
A -- analysis is based upon modeling, right?
Q I understand, but I thought --
A And so I'm trying, what I'm trying to say is I -- if you cut to the chase, the southern ring road during the peak weekend has 23 percent higher traffic volume than the peak weekday value, but your question was, is that -- what effect is that going to have on the bottom-line modeling, and what I'm telling you is, the fact is that the peak that's happening during the weekdays, which happens five out of seven days of the week, happens to occur during a time when there's much more restrictive meteorologic conditions in general, which would much more than compensate for that 23 percent factor. That's just one point.
Q Okay. But actually, Mr. Sullivan --
A In addition to that --
Q -- if you could stop just a --
MR. GOECKE: If he could just finish.
MR. GROSSMAN: Let him finish his answer.
MS. CORDRY: Could I -- I mean, he's not really answering my question.
MR. GROSSMAN: No, let him finish his --

MS. CORDRY: Okay.
MR. GROSSMAN: -- I'm going to get to your question in a second. Let him finish his answer, though.
MS. CORDRY: Okay. Fine.
THE WITNESS: In addition to that, the statement I'm making about the 23 percent, well, that's assuming that the weekday peak -- happens two days of the week during a, several hours per day -- that happens all the time. That happens weekend, weekday, 7:00 in the morning, 10:00 at -- that's what happens all the time. We know that's not true. So the overall conservatism in approach much more than compensates for 23 percent difference in traffic volume between those two different peaks.
MR. GROSSMAN: All right.
MS. CORDRY: Okay.
MR. GROSSMAN: Hold on one second. But what she asked you was, when you talk about the 175th hour that you took, she's asking, is that a derivation from the traffic or are you talking about 175th worst pollution hour? That's --
THE WITNESS: It's the --
MR. GROSSMAN: -- I think, what she was asking.
THE WITNESS: It's the concentration. The modeled concentration --
BY MS. CORDRY:
Q Okay.

A -- is pulled, not the traffic peak.
Q Okay. That is not what you've testified to before, though, is it? I mean, have you not testified before that you picked the 175th highest traffic hour? That was on the weekday, because you said all along that the weekday hours were higher than the weekend hours.
A I don't recall testifying that we use 175th peak-hour emission. What I testified, when modeling NOx, that we used 175th highest modeled value each year, but that's based upon the emissions, assuming that that peak weekday traffic flow and emission rate happened all the time the station is open --
Q Right, but --
A -- didn't vary at all.
Q But if you have -- well, let me ask you before I go on, where did you get this 23 percent difference?
A Mr. Guckert estimated for the southern ring road 783 vehicles the peak weekday -- weekend value. Relative to 639 that we modeled, that's 23 percent.
Q Where did you come up with that particular number from? Where does that, where do those figures come from?
A He provided that to us. I don't recall the basis for it.
Q Okay. It's not a figure 10 number? Or is it one of these ones where you're picking out numbers from the

other one, or I mean, he just gave you that number?
A He provided us analysis, but my recollection is it added up to 783. I don't recall which page of his documentation that came from.
Q Okay, because I don't think we've ever seen that number as such. It's nowhere -- there is no 783 number for the southern ring road in Mr. Guckert's, any of his reports. So I'm trying to --
MR. GROSSMAN: Is there a number that's close to that, or --
MS. CORDRY: No. I mean, again, if you use the numbers at Intersection 16 and Intersection 20, none of them are like that. We don't, of course, have a number down there for the gas station with, you know, traffic and so forth, but -- and I guess, maybe, that's his average. So I don't know what he's averaging, but you know, I don't know. We've never seen that 783 number before Mr. Sullivan mentioned it last week. So I've been trying to determine where these come from.
MR. GROSSMAN: Okay.
MS. CORDRY: Okay.
BY MS. CORDRY:
Q So, so again, I really, I'm very hard-pressed to try to determine how to compare that 783 or whatever number it is in the analyses to the other ones. It's clear --

okay. We'll come back, I guess, on our own testimony and put in what the numbers of cars are that were observed by Dr. Adelman. They're in the record, and we can come back with that in terms of how much higher they were on the weekday, going south, than what was projected, but let me, let me try to think what to ask you at this point. Again --
MR. GROSSMAN: Do you want to break?
MS. CORDRY: Well, no. I'm just --
BY MS. CORDRY:
Q To clarify again, my understanding from all your previous testimony -- and we'll have to go back and pull up the records -- was that you were saying the, you were looking at the 175th highest --
MR. GROSSMAN: Well, he's answered that question already.
MS. CORDRY: Okay.
BY MS. CORDRY:
Q Traffic hour --
MR. GROSSMAN: He doesn't have to clarify any further. He's answered that question. He wasn't talking purely about 175th for his traffic hour; he was talking about 175th for his modeled hour. So that's what he's answered --
MS. CORDRY: Okay. And --
MR. GROSSMAN: -- so let's not go over it another

time.
MS. CORDRY: Well, I am trying to figure out how we, how he gets to that, because it seems to me, if you don't have the traffic numbers, the correct traffic numbers, it's hard to then get to determining what is the highest value there, but --
MR. GROSSMAN: You can argue that. That's --
MS. CORDRY: Well, yes.
MR. GROSSMAN: -- that's an argument.
MS. CORDRY: All right. We may have to just do some of that on our own here, but let's see.
BY MS. CORDRY:
Q Is it your understanding that the 783 was coming from his observations on that Saturday --
A It's based upon --
Q -- in April of last year?
A It's based upon his analysis of weekend traffic, Intersection 16, 20, and the gas station intersection. That's my recollection.
Q Okay. Well, was that number deriving from the actual observations on the weekend, or was it deriving from those observations with additional background added and additional gas station traffic added?
A My recollection was with a total, total projected -- you know, totals, not just, is what he, what he

determined would be the updated numbers that we should use, and you know, it came from his report. I don't remember exactly, again, you know, which figures or tables, but that's the value that was supporting, which he gave us.
Q Okay. Because he was using 639, you were getting from his numbers, as the solely southern ring road portions of those intersections on the weekday, as I understand it, correct, and he's now using -- he's telling you that 783 is the same kind of set of numbers for the weekend, correct?
A That's my recollection.
Q Okay. So he's saying the weekend on the southern ring road would be approximately 23 percent higher than the weekday?
A The peak weekend hour will be 23 percent higher along the southern ring road than the peak weekday hour --
Q Okay. And --
A -- traffic flow.
Q Okay. All right. So we're going to have to do some more calculations in terms of -- certainly the difference at Intersection 16 in total, as we've just said, was 1899 versus 1467, is more than 23 percent higher?
A I don't know. I didn't calculate that number.
Q Well, 400-something over 13 is more like about a third or more higher than --
MR. GROSSMAN: Well --

MS. CORDRY: Okay.
MR. GROSSMAN: -- asking him to do the --
MS. CORDRY: Okay.
MR. GROSSMAN: -- math in his head now is not fair. So --
MS. CORDRY: All right. Okay. It's -- this is really interesting. We can never finally discuss that.
BY MS. CORDRY:
Q Okay. All right. In terms of, if we look at Mr. Guckert's exhibit, or this is actually the OZAH exhibit over there, 128(b), which is up on the stand right now, you did hear the questions to Mr. Guckert about his use of the critical lane volume/level of service display on that chart where it was showing level of service A at each intersection?
A I don't, I don't recall the service level discussion. I mean, I don't, just don't recall it.
Q Okay. Well, did you sit through the last three days of Mr. Guckert's testimony?
A I was there for at least two of them, but I don't know, recall if it's three, but I heard a lot of his testimony, but --
Q Okay.
A -- that particular portion I don't, just don't recall it very clearly.

Q Okay. So you don't recall anything about the level of service issues in the case?
A I remember him discussing that topic, but where it didn't pertain directly to my analysis, I don't, I didn't take a lot of notes or anything on that.
Q Well, part of your analysis would have to do with how fast cars were moving through these intersections and around the ring road, isn't that true?
A We made assumptions about traffic speeds.
Q Okay. And assumptions of how long cars would be lined up, queuing at different points around either on the ring road or out on the main road?
A We got estimates of queue, queue lengths, yes, for each intersection.
Q Okay. And the queue lengths you were estimating were out on the main roads, is that correct?
A Each intersection except the gas station intersection is my recollection.
Q I'm sorry. Say that again, please.
A Each intersection that had a, that had a signal, whatever, we had a, we would have a queue for it. We wouldn't have one for the intersection because there's no, there's no gas -- there's no light or anything, reason for us to have an intersection there.
Q Okay. So the one you're saying you didn't have

any queue for, you're talking about the gas station intersection down on the bottom of the ring road there?
A That's correct.
Q Okay. And you've been talking about signals, which are out on the main road, correct?
A Again, my recollection is, where there were intersections that would have queues because of lighting, because of traffic lights, we would have a queue established in the modeling.
Q Okay. Yes. As I recall, it was like an 18-car queue you were showing on various of the main roads out around the mall?
A It varied.
Q Okay. Did you show queues on entrances to the ring road?
A You have to look at the -- we'd both have to look at the modeling files together to look at where the queues are, but again, if you want to research that, the queues are, are referred to as Area Source 1, Area 2, and so forth in the modeling files. It shows exactly where those queues were, and the emission rates are shown on the spreadsheets. I mean, it's all there. I just don't recall each one.
Q Okay. Do you recall whether you were assuming queuing at the intersections within the mall?
A My -- I think I've answered that question a couple

of times.
Q Well, could you answer it again, please?
A My recollection is that if there was a light and we knew the traffic volumes and the light sequencing, that we would have had a queue established for there --
Q Okay.
A -- but that's my, that's my recollection. To know for sure, again, I refer you to the modeling data disk.
Q Okay.
MR. GROSSMAN: But if it was a stop sign, is your recollection that there wouldn't be any queuing?
THE WITNESS: I just don't recall.
MR. GROSSMAN: Okay.
BY MS. CORDRY:
Q All right. So we all agree that there are not stop signs at Intersection 16 or, I'm sorry, that there are not stoplights at Intersection 16 or at Intersection 20?
A I say again, I just don't recall each intersection, the light versus the stop sign or which ones had queues and which ones did not.
Q Okay. Do you recall getting any information from Mr. Guckert or looking at any chart similar to this in April that indicated to you that there -- that as he has testified, that his levels of service A there were meant to indicate there was little or no delay at any spot around the

mall?
A I don't recall.
Q Do you recall discussing with him any questions about congestion or queuing or idling at any spot within the mall after the warehouse opened?
A I just don't recall.
Q Are you aware that there is substantial evidence that there is in fact queuing, long lines of queues of cars oftentimes on the weekend going up to Intersection 16?
A I don't recall that testimony.
Q You don't have any idea that any of that testimony has come into the record here about that?
A I just answered you.
Q Okay. Were you here during Mr. Guckert's testimony when we were going over the videos and the fact that cars were shown backed up all the way down from Intersection 16 --
MR. GOECKE: I object.
BY MS. CORDRY:
Q -- University Boulevard?
MR. GOECKE: I object. What relevance does it have about what he recalls about the testimony or not?
MR. GROSSMAN: Well --
MR. SILVERMAN: The question is what he knows.
MR. GROSSMAN: Well, I think it's repetitive and

objectionable on that basis because he's already answered he doesn't recall, but I'll let him answer that one additional question about that. Do you recall?
BY MS. CORDRY:
Q Do you recall being here while we were showing videos, for instance, discussing and showing how cars were backed up all the way from Intersection 16 down to the University Boulevard intersection?
A I recall seeing a video for a particular snapshot in time. I don't recall the context for that video, but I recall the video showing backup.
Q Okay. And if there are in fact 20, 30, 40 cars lined up at Intersection 16, going through at a couple miles an hour and not free-flow traffic, does that affect your analysis?
A Theoretically, yes, that would affect our analysis, but just to, maybe to put context to this whole line of questioning -- one reason in our report we show, we break down the culpability; we show how much the impacts are coming from, you know, the ring road, the gas station, other roadways -- I'd suggest if you look at the other roadways and look for context, you'd find that, generally, the contribution from those is very small.
So, you know, you could take Intersection 16 and University and the rest and substantially increase those; it

has a minor effect on the results. The southern ring road, gas station operations, in some cases the warehouse, these are the more significant sources, but the roadways, in general, are not a big contributor to the modeled concentrations.
Q Okay. Well, I'm not talking about the roadways outside the mall. I'm talking about coming into the ring road. I'm talking about backing up at the ring road intersections.
A They're included in the analysis. When I say other roadways, it's other than the southern ring road.
Q Okay.
A So they're in there --
Q Okay.
A -- as in that category, and they can be reviewed from our most recent rebuttal report. You can see what the contributions are.
Q And are you aware that there's substantial testimony that cars backup from Intersection 16 south and line up there oftentimes on the weekend and have long lines of queuing delay going out and that's on the southern ring road? Are you aware of that?
A I don't recall that testimony, and again, I don't know the context for what you're saying. So I just don't know. I can't answer your question.

Q So assuming there is that kind of testimony and that there are such queues, does that have an effect on your analysis?
A You're saying if the southern ring road backs up?
Q In other words, if, coming from Intersection 16, if there are cars backing south here, past the entrance of Target, all the way down at times to the entrance, the main east-west drive aisle and beyond, are those cars backing up? They're on the southern ring road, correct, in terms of what you're defining as southern ring road?
A Where's Intersection 16 here?
Q See where this A is right here? That's basically Intersection 16.
A It depends. In other words --
Q What?
A -- you're asking me, if they back up in here, is that going to have, like, an effect?
Q Yes.
A It depends how far they back up.
Q Well, if they back up past the Target, back up all the way down to the east-west drive aisle, perhaps even further than that on occasion.
A I mean, it's a hypothetical. I have no idea if that ever happens, but if it does, if you want to look -- if you want to put it in context, look at the rebuttal report

2014 and look at the ring road and look at the contribution to ring road now and you can make some judgments based upon that, its culpability relative to the overall impacts, and what I'm saying is you could make substantial increases in that number without significantly affecting the bottom line.

Q Well, of course, we're not the experts; so we're not really the ones who can make these -- if you did a Monte Carlo analysis, that would be the sort of thing that you might put into your varying kinds of assumptions, isn't it?

A You certainly could do a Monte Carlo analysis. I'm not recommending that it be done for this matter here, but if you did, that could be put in, sure, but you also put in frequency. So you could say, well, the ring road backs up down to Target sometimes; maybe it happens twice a year, so that you could put that into the Monte Carlo, and most of the time, maybe, maybe 98 percent of the time it doesn't back up at all. So my point is, yes, you can in a Monte Carlo, but this is not the context to conduct a Monte Carlo analysis.

Q Okay. But you don't actually know how often it backs up because nobody's actually gone out there and tried to figure that out, have you?

A I'm saying I don't recall hearing testimony. I don't, I don't know the backup history on that road.

Q Okay. And if I proffer to you, as an expert,

again, as a hypothetical, that there are, in fact, frequently backups on that road on the weekend, that is something that could affect your analysis, correct?

MR. GOECKE: Well, you're proffering as an expert?

MS. CORDRY: No. I am proffering --

MR. SILVERMAN: No, to an expert.

MS. CORDRY: -- as someone who put that testimony in and as those -- I am asking him, as an expert, with that -- it's not a hypothetical because the evidence is in the record -- but with that evidence in the record.

MR. GROSSMAN: The as an expert was referring to him --

MS. CORDRY: Yes.

MR. GOECKE: Okay.

MS. ADELMAN: Yes.

MR. GROSSMAN: -- not to Ms. Cordry.

MR. GOECKE: And where in the record is this?

MS. CORDRY: It's in our, my testimony. It's in pictures. There are videos showing the cars backing up past the --

MR. GROSSMAN: But I think he's already answered this question. He has said it could have some impact but it could be insignificant depending on how frequent it is and where it is.

MS. CORDRY: Right, but --

MR. GROSSMAN: So he's already answered this question. So --

MS. CORDRY: Okay. So, but I'm trying to get -- okay. It is a question as to whether or not he's looked into any of these possibilities beyond assuming that there is not delay on those roads, and that's what I'm trying to get at, is does his analysis include any consideration of delay on those roads.

THE WITNESS: I think the best, the best answer, Ms. Cordry, is that if you consider the analysis we did in full context, using a peak 639 cars all the time -- it's the intersection of adverse meteorology and peak emissions that creates high concentrations in the air -- by keeping that number high all the time, 18 hours a day, seven days a week, we're much more than compensating for some factor like you're referring to right now. There's a tremendous amount of conservatism embedded in that analysis.

BY MS. CORDRY:

Q And that applies primarily to the longer time periods, correct? When you're talking about a one-hour time period, the peak-hour and the one-hour time period, they coincide, do they not?

A It applies to all of them. The issue is, if we're linking 639 cars -- that's a lot of cars -- all the time, including 7:00 in the morning and 9:00 at night when you can

have much more adverse dilution conditions, that's going to give you more hits of the higher numbers, and in fact, they're artificial because you don't have 639 cars at 7 o'clock in the morning. That's in the analysis. You can look at the modeling files, and you'll see it's there.

So we purposely did these analysis with conservatism to address issues like this and then present a culpability so you could pull it out and see what if, what if I doubled the roads, what if I doubled the ring road, what does that do, and you can look at the analysis in the February 2014 report and see what it does.

Q Okay. And I'm trying to get at the various factors that go into this and whether or not you considered any of them and whether or not you put any of them into your report in terms of uncertainty, range of figures, and so forth.

A Well, my response is, we, by the approach that was taken, including what I just mentioned, we have allowed a sufficient degree of conservatism to anticipate issues like this: what if sometimes the cars are going slower in the parking lot; you know, what if it backs up at Intersection 16? We can't address all those in a practical modeling analysis, just impractical, but by having the conservatism, such as using the peak hour all the time inside the mall, we have anticipated that line of question and have tried to do

our best to make it conservative.
Q By using the peak hour for non-peak hours, does that change the level of emissions for the peak hour itself? When we're looking at one-hour issues, does that somehow change the level of emissions at the peak hour if you were assuming that it may be higher some other, completely other different hour?
A Well, there's two, there's two factors here. You have emissions and you have modeled concentrations. It very much changes the model concentration distribution to assume peak emissions happen all the time when they don't. So that the bottom line here is air concentration, not emissions --
Q And that's --
A -- you have to put the whole package together to answer your question.
Q So in terms of, for instance, if people are -- if cars are moving, you were assuming at least seven-and-a-half miles through the parking lot and that it would take no more than two minutes or so, two-and-a-half minutes to get in and get a parking space. If in fact people have to drive slower than that because cars are, pedestrians are in the path, because they have to wait for them, because there's backups, all of that is taken in by your conservatism, you're saying?
A Well, did you say seven-and-a-half miles an hour?
Q Yes.

A My recollection is five.
Q I think you said seven-and-a-half, I believe, in your --
A The modeling shows five. So the issue is -- well, I've made this point before -- go into a parking lot and try to drive five miles an hour; you're not going to do it unless, if for some reason that queue you're going down, the lane you're going down in the parking lot is, people are stopped. If you're driving your car -- and try to drive a car five miles an hour some time; it's really hard to do. We're being conservative by doing that. Could it be that some time near Target people slow down? Sure. We're modeling a whole parking lot. What are the odds that everybody in the parking lot typically are going three miles an hour, which is walking speed? It's remote.
Q Well, how about if, in fact, people are walking up and down the drive aisle all the time so that most of the time you are going at the same speed as the pedestrians because they're in your way?
A I don't accept that premise. An average person driving his car, leaving the ring road, and his transit back and forth in the parking lots, I would be -- if you would measure that, which Mr. Guckert has, it's on the order of five miles an hour and less. So looking at the big picture, the whole parking lot, I'll stand behind five miles an hour

as being a, is a very conservative treatment and to be, to model less than that would be unrealistic.
Q Okay. So if you previously testified you were looking at seven-and-a-half miles an hour, that's -- you're not saying seven-and-a-half; you're saying your modeling actually uses five?
A We used, my recollection is, used five. I don't recall. I won't say -- if it's in the record, I'll correct it, but the modeling files show what we used in the modeling assumptions and reports, and my recollection, it was five miles an hour in the parking lots --
Q Okay. Because I pretty --
A -- 15 miles an hour on the ring road.
Q Okay. Because I remember this discussion. What I remember, seven-and-a-half miles you couldn't stay down to. In terms of the garage, you indicated you thought you were being, again, you were being conservative when you had, like, five minutes for people to come in and exit from the garage?
A That's correct.
Q That was on the assumption, was it not, that at the time, that Mr. Guckert was and the studies were showing that the garage was not very heavily used at that point?
A The, I don't -- that didn't enter into our evaluation of the timing, going in and out of that garage.

We made a, what we felt and still feel, is a conservative estimate: two-and-a-half minutes to leave the ring road, get to your parking place in the parking garage, park, then two-and-a-half minutes to egress.
Q Okay. So that if, in fact, the garage is mostly full and you have to drive up and down aisle and aisle and aisle, you're sure that's still, you can do all of that in two-and-a-half minutes?
A Repeat that question.
Q I said, if the garage these days is primarily full most of the time and people, when they come into the garage, have to drive up and down the aisles looking for a space, you're sure that they can always usually get in there within two-and-a-half minutes?
A You said always usually.
MR. GROSSMAN: Yes. I mean, you've --
MS. CORDRY: Okay.
BY MS. CORDRY:
Q That you can usually get in there within two-and-a-half minutes.
A Usually, yes. Always? I'm sure there's a time when it'll take more than two-and-a-half minutes.
Q And I think your diagram, I believe, showed people going up and down, like, one aisle or up one aisle and down one aisle as your assumed traffic distance that they were

going to travel.
A We used that as a midpoint estimate, yes.
Q Okay. So if people, in fact, have to drive up three or four aisles, that would extend the time and the amount of -- okay.
MR. GROSSMAN: Really, I mean, in terms of the pollution analysis, do you -- just, it's a very, very minor technical --
MS. CORDRY: Okay.
BY MS. CORDRY:
Q You also stated with respect to trucks that you were being conservative in your most recent analysis because you assume 72 heavy-duty trucks are going to come to the store rather than 10 that Costco states as its usual volume, is that correct?
A Correct.
Q Is it actually another way of stating this that you're assuming that there's a certain total amount of idling of these heavy-duty trucks going on, i.e., 72 trucks times 10 minutes an hour?
A To be exact, we're assuming 18 hours a day, when trucks do deliveries at Costco warehouse, that each of the four bays is always filled by a heavy-duty diesel vehicle and each of those vehicles idles for 10 minutes, which would total, 18 times four would be 72 hypothetical --

Q Times 10 trucks, so --
A -- HDDVs.
Q -- so 720 minutes', total minutes' worth of idling?
A Correct.
Q Okay. And you're assuming it only idles 10 minutes because that's Costco's policy?
A The modeling is based upon a 10-minute idle time.
Q Okay. So if a given truck idles longer than 10 minutes, if it idles 20 minutes, that's roughly the same equivalent of having two trucks idling 10 minutes each, correct, for your modeling purposes?
A Well, where is, where is, where are the two trucks located that are idling for 20 minutes?
Q Let me just start with that basic point, that if a truck sits there at the dock, let's say, and idles for 20 minutes, that would be the same as two trucks idling for 10 minutes in your modeling?
A Approximately the same.
Q Okay. Are you aware of testimony that has come in the record that trucks often idle in and about the loading docks for more than 10 minutes at a time?
A I don't recall hearing that testimony.
Q Okay. Well, I'm sure you weren't here for all of the testimony, but are you aware that that -- that there is

testimony to that effect?
A I would not be surprised at some times vehicles idle more than 10 minutes and sometimes less than 10 minutes.
Q So in terms of the modeling you were doing, if there are trucks idling overall more than 720 minutes a day, whether it's one truck or 72 trucks, then that's what your modeling says. Once it goes past 720 minutes' total idling, then you're already beyond what your modeling is assuming?
A Well, the modeling is assuming -- the modeling in the most recent report is going to change, made how we're modeling the warehouse more conservative. We understand that sometimes, infrequently, there could be a heavy-duty vehicle that's not clean diesel.
We assumed a fleet average this time. We didn't use a clean-diesel assumption only. We put a fleet mix, a standard fleet mix for this time. So, in that sense, where almost all of those vehicles will be clean diesel, we are substantially overstating the emissions that are actually going to occur there much more than if one vehicle happens to idle beyond Costco's policy. So, again, there's embedded conservatism that errs on the side of overstatement rather than understatement.
Q Okay. And last summer you were assuming 10 trucks idling 96 minutes each. So it was a total of 960 minutes?

A It's the same assumption as last time in terms of how many vehicles are in the loading docks. We still had the same number. The issue is then we did use a clean-diesel assumption for all of them, this time used the fleet mix --
Q Okay.
A -- for all of them, which included a small fraction of clean diesel, but most, most of them would be standard heavy-duty vehicles.
Q And I think you were also stating that you were assuming that only heavy-duty trucks could be idling at the loading dock, that you didn't have any light-duty trucks there because the loading dock bays were filled up?
A Which averaging time and pollutant you're referring to?
Q Well, I'm just referring to, you stated that, as I understand in your report, you said that you weren't using light-duty vehicles because the loading docks, you were assuming, were filled with heavy-duty trucks idling.
A We said that for one-hour assumptions to be conservative, because heavy-duty trucks emit more than light-duty trucks. We assumed all the bays were filled with heavy-duty vehicles for one and eight hours. For 24 and annual average, we assumed 10 of each.
Q Okay. And are you aware that at times, when the

heavy-duty trucks are at the loading docks, that light-duty vehicles come and park in front of the heavy-duty vehicles?
A I'm not aware of that.
Q Well, are you aware that they often park in the drive aisles while heavy-duty trucks are in the loading dock?
A I have no opinion on that.
Q Or in the overall parking area -- are you aware of any of that testimony that was put in the record before?
A What in the overall parking area?
Q In the parking area directly across from the loading dock, where the gas station would now be.
A Well, I'm not sure what your question is about. Please rephrase.
Q Okay. Are you aware that there's been testimony and exhibits submitted that indicate that light-duty trucks park in those areas as well, even if the loading docks are full?
A Are you referring to light-duty vehicles going to Costco, Target, the general mall --
Q Light-duty trucks, I'm sorry.
A -- where are they parking? I'm not understanding.
Q Light-duty delivery trucks, I'm sorry. Let me be clear.
A For Costco?

Q Yes.
A My understanding was light-duty delivery trucks generally go to the warehouse and go into a, into a bay. I don't --
Q I'm sorry. I'm sorry, go into? I'm sorry. I just --
A -- have information that shows anything different than that.
MR. GROSSMAN: Go into a bay.
MS. CORDRY: Go into a bay. Okay.
BY MS. CORDRY:
Q And are you aware that if the bays are full, that trucks still come there and park and make deliveries; they park in front of the heavy-duty trucks?
A I don't have any information on that.
Q Okay. So that could affect how much idling is going on if those trucks are still coming, even though they don't have a spot in the bay?
A It depends.
MS. CORDRY: Can I take just a moment?
MR. GROSSMAN: Sure.
MS. CORDRY: Actually, can we take, like, a couple-minute break, and I'll see if I'm done with this segment?
MR. GROSSMAN: Okay. Are you saying that you

think you might be done with your portion of the cross-examination?
MS. CORDRY: There's another segment of questions, but I think I'm just about done with the traffic piece here. I just want to --
MR. GROSSMAN: Okay. How long do you think your other segment will take?
MS. CORDRY: Probably about the same amount of time.
MR. GROSSMAN: All right. All right. So let's take a five-minute break until 11:20.
MS. CORDRY: And I'll also check with Ms. Rosenfeld. She said I could text her and see whether she was on her way.
MR. GROSSMAN: All right. Thank you.
(Whereupon, a brief recess was taken.)
MR. GOECKE: I handed out copies of the list. You've got one right in front of you there.
MR. GROSSMAN: Oh, okay, the revised list.
MR. GOECKE: Yes.
MR. GROSSMAN: Let's exhibitize it, and we'll call it Exhibit 563, and it's Applicant's revised objection, or let's say, revised list of objections to exhibits.
(Exhibit No. 563 was marked for identification.)

MR. GOECKE: And we added a column to this chart, Mr. Grossman, of Exhibit Description in the middle, just so everyone knows what exactly we're talking about, just to --
MR. GROSSMAN: Right.
MR. GOECKE: -- help facilitate the discussion.
MR. GROSSMAN: Okay. All right. And as time permits, then we'll, and after the opposition has had an opportunity to go over it, we'll then deal with them --
MR. GOECKE: Whenever you want.
MR. GROSSMAN: -- one at a time.
MS. CORDRY: All right. Are we on the record?
MR. GROSSMAN: We're on the record, yes. We have been.
MS. CORDRY: Okay. All right. I think we're done with the traffic questions. I'm going to move on to some questions about background levels.
MR. GROSSMAN: Okay.
MS. CORDRY: And let me go ahead, we might as well go ahead and mark these new exhibits that we talked about that were the charts.
MR. GROSSMAN: Okay. Mr. Goecke, do you happen to have an extra copy of your exhibit --
MR. GOECKE: Yes.
MR. GROSSMAN: -- objection list? And would you also make sure to e-mail me a copy --

MR. GOECKE: Sure.
MR. GROSSMAN: -- so I have it in my electronic record?
MS. ADELMAN: Have they been e-mailed out, Mr. Goecke?
MR. GOECKE: They have not.
MS. ADELMAN: No.
MR. GROSSMAN: Thank you.
MS. ADELMAN: Are you --
MR. GOECKE: Would you like a copy? Did you get one?
MS. ADELMAN: Yes, I'd like to -- if you have an extra, that would be great.
MR. GOECKE: Yes, of course.
MS. ADELMAN: Okay. Thank you.
MR. GOECKE: Sorry.
MS. ADELMAN: Thank you.
MR. GROSSMAN: Thank you. Okay. All right.
MS. CORDRY: All right. So go ahead and just describe these so we can mark them or whatever. The first --
MR. GROSSMAN: So do you have an order in which you want to mark these?
MS. CORDRY: Yes. The first one would be the PM2.5 air monitor readings.

MR. GROSSMAN: Okay. So we'll make that -- do you want this all as a, like, 564(a), (b), (c), (d), or do you want them as separate numbers, or do you have a preference?
MS. CORDRY: They can be (a), (b), (c), I guess.
MR. GROSSMAN: Okay. All right. So 564(a) --
MS. HARRIS: That's the PM2.5?
MS. CORDRY: Right.
MS. ADELMAN: This is what, Mr. Grossman, please?
MR. GROSSMAN: This is 564(a) --
MS. CORDRY: And it's the one-page PM --
MR. GROSSMAN: -- and that's PM2.5 Air Monitor Readings.
(Exhibit No. 564(a) was marked for identification.)
MS. CORDRY: And the second one, which would be 564(b), would be the NO2 pieces. There's a one-page, labeled NO2 Values-Yearly and Running Averages, and then a three-page, I think it's three pages, yes, three-page backup of that, which is the yearly values. So that would all be --
MR. GROSSMAN: Okay. So the first one is NO2 Values-Yearly and Running Averages and Micrograms Per Cubic Meter, and then the second one is entitled NO2 Values from Nearby Monitors, 2009 to 2012 --
MS. CORDRY: Yes.

MR. GROSSMAN: -- is that what you're talking about?
MS. CORDRY: Right.
MR. GROSSMAN: Okay. So (b) would be, 564(b) would be NO2 Values-Yearly Running Averages, or Yearly and Running Averages --
MS. HARRIS: Is this the one that says, NO2 Values from Nearby Monitors --
MS. CORDRY: Yes. Yes.
MS. HARRIS: -- 2009 to --
MR. GOECKE: That's (c).
MS. HARRIS: -- 2012?
MS. CORDRY: Well, that would all be part of (b). These are all of the NO2 values. So --
MR. GROSSMAN: No. Wait a minute. Just so we --
MS. CORDRY: There should be a separate single page for the --
MR. GROSSMAN: Yes. The single page labeled NO2 Values-Yearly and Running Averages, parens, Micrograms Per Cubic Meter, that is 564(b).
(Exhibit No. 564(b) was marked for identification.)
THE WITNESS: (D), like in David?
MR. GROSSMAN: (B), as in boy.
THE WITNESS: Thank you.

MS. HARRIS: I don't think we have that one.
MS. CORDRY: There were two tabs on what was sent over.
MS. HARRIS: Do you have an extra copy by chance?
MS. CORDRY: Let me see what we got here. I can make some more copies at the next break, but here is the one page --
MR. GOECKE: Thank you.
MS. CORDRY: -- that goes with the two-page.
MR. GROSSMAN: And the next one you want is --
MS. CORDRY: Is the CO monitor values.
MR. GROSSMAN: Oh, no. Wait a minute. Wait a minute. I thought you wanted me to do the NO2 Values from Nearby Monitors, 2009 to 2012.
MS. CORDRY: Well, I want that all -- that would all be part of 564(b).
MR. GROSSMAN: Yes. Oh, well, no. That's separately stapled.
MS. CORDRY: Okay. It's fine. I just didn't have -- I ran out of staples at home to staple all of those together.
MR. GROSSMAN: Okay.
MS. ADELMAN: Is it going to be (c) or (b)?
MR. GROSSMAN: This will be (c) --
MS. CORDRY: Okay.

MR. GROSSMAN: -- is NO2 Values from Nearby --
MS. CORDRY: And to correct the title on that, it actually, it now runs through 2013. I didn't update the title on that. I'm sorry.
MR. GROSSMAN: -- Monitors, 2009 to 2013, and I'll make the correction on the title.
(Exhibit No. 564(c) was marked for identification.)
MS. CORDRY: Okay. The final one, which, I guess, would be 564(d) --
MR. GROSSMAN: Hold it. Hold it. Hold it.
MS. CORDRY: Oh, I'm sorry. I'm sorry.
MR. GROSSMAN: Got to write these things down in a number of different places. All right. Then we have CO Monitor Values?
MS. CORDRY: Right.
MR. GROSSMAN: And that's 564(d)?
MS. CORDRY: Yes.
MR. GROSSMAN: That's (d), as in David --
MS. CORDRY: And the --
MR. GROSSMAN: -- CO Monitor Values. All right. Then I have one more, a single page here.
(Exhibit No. 564(d) was marked for identification.)
MS. CORDRY: Right, and this is an excerpt from a

previous exhibit, which I have not been able to determine which exhibit this was. Let me -- if I can borrow from Mr. Goecke a moment. It's a very big, long exhibit that we submitted last summer by Mr. Sullivan. It has several tabs on it. I'm going to try to figure out between now, at some point, what this exhibit was, but I've only copied just basically one page from it. I'm going to ask one question from it, but I just wanted to let you see it.
MR. GROSSMAN: All right. I don't recognize it off the top of my head --
MS. CORDRY: Right.
MR. GROSSMAN: -- so let's just give this a new exhibit number.
MS. CORDRY: All right. All right.
MR. GROSSMAN: And we'll call it 564(e), as in Edward.
MS. CORDRY: Okay.
MR. GROSSMAN: And this is Daily Mean PM2.5 Concentration. Okay. All right. Ready to proceed.
(Exhibit No. 564(e) was marked for identification.)
BY MS. CORDRY:
Q And this is just an excerpt from the document that's already in. So -- all right. Last week you indicated you had some disagreements with some of the things

that were in the memo that I prepared about background levels. So I wanted to go over the background issues and see where we're actually in dispute and where we are on the same page with everything. If we start with the document I just handed you, which is some excerpts from your January report, do you recognize those pages there?
A Do you have the whole report? I rather not -- I rather have the whole report to answer questions.
Q Well, do you have your whole report? I do have it. I didn't make a, you know, I didn't make a number of copies of your entire report.
A I don't know if I do or not.
MR. GROSSMAN: If you don't, I'm sure we can dig it out of our files here.
THE WITNESS: I don't have that report with me.
MR. GOECKE: Which report?
MR. GROSSMAN: The January 2012 supplemental --
MS. CORDRY: And it's labeled 2012. It's actually the 2013 report when you look at the front page and you -- yes.
MR. GROSSMAN: Oh, yes, it's labeled 2012 but 2013.
MS. HARRIS: What exhibit is it, and I can try to take it out?
MS. CORDRY: It's 56(a).

MR. GROSSMAN: (A) or (e).
MS. CORDRY: It has (a), I believe, written on the front.
MR. GROSSMAN: Okay.
MR. GOECKE: I've got it, Pat.
MR. GROSSMAN: Yes.
MS. CORDRY: Yes.
MR. GROSSMAN: (A). By the way, Ms. Cordry, you actually gave me two copies of that.
MS. CORDRY: Ah, okay. That's where my other copy is. All right. Is that -- okay. That's actually, I believe, another page to that.
MR. GROSSMAN: Is it a different page?
MS. CORDRY: I believe so. I have to check and see.
MR. GROSSMAN: I know there's a page 2 in here.
MS. CORDRY: No? All right.
MR. GROSSMAN: No. It looks like the same one.
MS. CORDRY: Right. Right. There is another page needed. I will make sure you have it.
MR. GROSSMAN: All right. You also gave me pages 20 and 21 too.
MS. CORDRY: Okay. So that's, those are the other two pages I was talking about.
MR. GROSSMAN: Okay.

MS. CORDRY: All right.
BY MS. CORDRY:
Q So, again, do you recognize those pages I gave you, the excerpt pages?
A I, yeah, I have the report open.
Q Okay. All right. You would agree that in this report -- let me back up. This was the final version of your report that you gave to Park and Planning before they made their recommendations on the application?
A I believe that's correct.
Q Okay. And in that report you agree that you, do you not, that you stated that in terms of concentrations, that you were using, quote, the highest measured concentration measured in Montgomery County and surrounding areas, as necessary, for the most recent available three years, i.e., 2009 to 2011? Is that correct?
A Sounds correct.
Q Okay. And you also stated at that time, your initial analysis that you did, that you stated that you did that -- and this is on page 17 -- that, quote, EPA and MDE and all other regulatory agencies in the United States rely on conservative background methods to maintain a tractable analysis when evaluating new or modified facilities?
A That's on page 17?
Q Yes. And do you agree with that statement? You

wrote it, and you agree with it, I assume?
A That certainly is generally true, but of course, MDE and EPA allow for less conservative treatments on model applications --
Q Well, I understand. I'm just asking you --
A -- on a case-by-case basis.
Q -- at the moment, Mr. Sullivan, did you make that statement?
A I'm saying -- I've answered your question.
Q Did you make the statement?
A I'm trying to find the exact quote in the document. I'm not seeing it.
Q Okay. It is the end of the paragraph at the top of the page there.
A Adding the conservative background concentration of values, as described above, to the total modeled concentrations produce airborne concentrations that would be expected to be significantly higher than what would be computed if all sources were explicitly modeled. So --
Q And then go on and read the next sentence.
A This is why EPA and MDE and all other regulatory agencies in the U.S. rely on conservative background methods to maintain a tractable analysis when evaluating new or modified facilities. I just clarified --
Q Okay. And --

A -- but let me clarify what I --
Q Mr. Sullivan, please.
MR. GROSSMAN: Well, hold on a second. Let him finish his --
MS. CORDRY: Can he just answer the question once in a while? When I ask him if he said something --
MR. GROSSMAN: He's trying. Let him finish his --
MS. CORDRY: Okay. All right.
MR. GROSSMAN: Go ahead.
THE WITNESS: I was concerned the record would be confused if I just answered that question yes or no, because the issue is, yes, I wrote that --
BY MS. CORDRY:
Q Okay.
A -- however, EPA and MDE allow for modifications of the most conservative method because many times, if you do an analysis that way, you're showing an on-paper violation; it's not real, and they allow various ways to reevaluate background in less conservative ways for air quality permits.
Q I understand that, Mr. Sullivan, and we might just get to that when I get to ask you that question, but if you'd let me ask the question and just answer --
MR. GROSSMAN: Go ahead --
MR. GOECKE: Objection.

MR. GROSSMAN: -- you don't have to make a speech.
BY MS. CORDRY:
Q Okay. When you were reading that, you skipped over a sentence, didn't you there, the one that starts with of course?
A Well, I went to where, I think the sentence you asked me about. I went right -- once I realized where it was, I went to that statement.
Q Okay. So you made that statement, and you said the reason why they do this is because, of course, it is not feasible to model all sources that significantly contribute to the air quality in the Wheaton area, either singly or on a collective basis, correct?
A That's correct.
Q That's why they use this conservative background method?
A Well, you're implying it's one method. It's not one method.
Q Well, I'm just reading your sentence: This is why they use the conservative background method to maintain a tractable analysis. That's what you said, correct, Mr. Sullivan?
MR. GROSSMAN: That's what he said. It's --
MS. CORDRY: Okay.
MR. GROSSMAN: -- whatever he said is in the

writing. You don't have to --
MS. CORDRY: Okay. Well, I'm just --
THE WITNESS: But, Ms. Cordry, it's different than what you just quoted. What it says is: This is why EPA and MDE and all other regulatory agencies in the U.S. rely on conservative background methods, plural, to maintain a tractable analysis when evaluating new or modified facilities. What we modeled here was the most conservative that could possibly be done.
BY MS. CORDRY:
Q You're absolutely sure that it's the most conservative method that EPA uses?
A It is the most conservative method they use.
Q Okay. Well, we'll come back to that in a bit, but okay. When you stated there -- in fact, when you state that you used the highest measured concentration, you don't actually mean the highest measured concentration at any hour of any day of the year, correct?
A Where is that statement?
Q I'm just saying, you said the highest measured concentration. I'm asking you that you don't actually mean the highest number that is ever measured over the course of the year, do you?
A In what context? I mean, which site, which location are you talking about? I mean, I'm not --

Q Any of these. Are there any of these --
MR. GROSSMAN: I think he's asking, where are the words highest measured concentration.
BY MS. CORDRY:
Q Okay. On the front page, where we just asked the question --
MR. GOECKE: Page 16?
MS. CORDRY: Yes.
BY MS. CORDRY:
Q The second sentence there: Background concentrations in the Costco analyses were based on the, quote, highest measured concentration measured in Montgomery County and surrounding areas, as necessary. So my question to you is, when you use those words, quote, highest measured concentration, you don't actually mean the highest hour measured any hour of any day of the year, do you?
A We do not.
Q Okay. Good. Okay. You're in fact referring to these measures like the 98th percentile for NO2 measurements?
A Whatever, whatever is appropriate for the standard being evaluated, yes.
Q Okay. So an actual, literal highest measured concentration could be a fluke on one day, some extraordinary event. So that's why they use the 98th

percentile, to eliminate these unusual events?
A Could be a system malfunction, unusual events, various, various factors that have EPA rely upon a set percentile or a set basis of doing it, but it's all specified --
Q Right. Right. And they often say this gives you a more stable kind of determination, as to whether you're going over the maximum or not, by coming back a little bit from the absolute highest concentration?
A I mean, it's different -- yeah, that's correct in principle but different for each pollutant and averaging time.
Q Okay. And in terms of the statement about the highest measured concentration in Montgomery County and surrounding areas, would you agree you made essentially the same statement in both your November and December reports as well?
A I don't recall.
Q Okay. I'll show you what you said in November, and this is actually two pages here. One is a page from the November report, and the other is the page from the December report.
MR. GROSSMAN: If I recall -- and it's been probably a year -- the December report was superseded by the January 2013 report, is that correct?

MS. CORDRY: Right, but I want to show the evolution of this particular --
MR. GROSSMAN: Okay.
BY MS. CORDRY:
Q And in --
MR. GROSSMAN: I mean, it wasn't just a supplement. It was superseding the December report.
MS. CORDRY: Well, I think we'll see there wasn't a change in this particular regard.
BY MS. CORDRY:
Q In November -- first off, do you recognize this discussion from your November report?
A Those pages from my -- I confirm, it's from my November 2012 report.
Q Okay. And at the bottom of the second paragraph there, the last sentence starts off: For the evaluation of the National Ambient Air Quality Standards. See that sentence?
A Which paragraph are you on?
Q The second paragraph.
A Okay. I see that sentence.
Q Okay. It says: The cumulative impacts from all of these sources is then added to the maximum concentrations for each pollutant and applicable averaging time that was measured in Montgomery County over the past three years.

Okay.
A That's what it says.
Q So, again, we say the maximum concentration. Okay. And then in your December report, which is the second page there, this one now uses, I think, pretty much exactly the same language you used in January. There's the sentence at the end of the first paragraph there, and then there are the other sentences at the end of the third paragraph.
A Well, just to clarify, when I say maximum, I'm referring to, if it's the 98th percentile, we use the 98th percentile; if it's annual, it would be the annual. I'm not saying -- I'm not implying here that we'll take the highest one hour of the entire year --
Q Okay. No. I --
A -- and add that on to the modeled value.
Q And I'm not asking you that, in particular. We clarified that, that that's not the way people do, but you are saying you use the highest number in Montgomery --
MR. GROSSMAN: All right. So let's just --
MS. CORDRY: Okay. But what I'm asking him --
MR. GROSSMAN: -- he said, used similar language.
MS. CORDRY: Okay.
BY MS. CORDRY:
Q So I'm asking you, again, you have stated here that you used -- in this case, you've now moved to say the

highest number in Montgomery County or the surrounding areas, with that caveat about the 98th percentile, as the way you measure the, quote, highest number, correct?
A That's what it says.
Q Okay. And you moved beyond Montgomery County because Montgomery County does not in fact have NO2 monitors, is that correct?
A Or CO --
Q Or CO.
A -- I mean, at that time. Basically, we're saying that -- we're trying to represent Montgomery County and Wheaton --
Q Right.
A -- and if we don't have a monitor there, we'll use another location.
Q Okay. So you're now outside of Montgomery County. You're talking about the surrounding areas?
A Well, I'm talking about areas that can be reasonably expected to be representative of suburban Montgomery County.
Q And in terms of, going back to your January report, in terms of talking about the, using this maximum number and so forth -- I'm sorry. One second here. If you move down to page 20 there of what I gave you for the January report --

A All right.
Q -- when you're talking about why this, one of the reasons why this is conservative, you're pointing out at this point that the maximum background level is not necessarily the level that would be applicable at the same time as the maximum modeled concentration?
A Which sentence are you referring to?
Q Well, it starts on the second paragraph there on page 20: In order to provide perspective on the degree of conservatism in the background term, more realistic representation of background concentrations are shown in Tables 4-5 through 4-9. Do you see that?
A That's correct. That's what it says.
Q So this is one where you were showing the conservative background, which was this highest number you were picking, and then you were also showing the actual background for that particular time period?
A Correct. They coincided in time.
Q So is this the same kind of concurrent background matching that you are now using in your analysis?
A We certainly -- we showed in this for perspective what the concentration actually was when the peak occurred.
Q Okay. So you knew, obviously, back in November of 2012 that using the high background would obviously give you a higher number than if you used these matched concurrent

backgrounds, correct?
A Sure.
Q Okay. I mean, this wasn't something that came up new or that you were unaware of from anything that Dr. Cole presented in his testimony or anybody else from the opposition?
A I don't recall if Dr. Cole mentioned this or not, but clearly I showed in this report the background in two different ways.
Q Okay. So this was like a year before Dr. Cole ever got on the stand to testify, you knew about this idea that you could have used concurrent backgrounds?
A Well, sure.
Q Okay. But at that time, you weren't really -- you were just showing this as perspective on how conservative you were?
A That's what I stated.
Q But now you do want us to rely specifically on the matching backgrounds?
A You can rely upon matching background or you can look at the culpability analysis and rely upon whatever number you want. In other words --
Q Well, I'm asking you --
A Just let me explain. We showed, we showed a more accurate assessment in February, reducing conservatism,

modeling NO2 specifically. If you, anyone that feels that, you know, that that paired background approach, they don't like it, they can go to the culpability analysis and look at what that background was versus what the background would be if you used 83, as you showed -- it's like for NO2, one-hour -- and you can assess it either way.

Q Okay.

A Your conclusion will be the same --

Q Well --

A -- but there's clearly two ways you can go, and I provide the data in a way you can interpret it either way.

Q Okay. We'll get to that later on if we don't jump ahead, but for right now I am just asking you, right now, in your Stage II and Stage III analysis, which you're asking the Hearing Examiner to rely upon, you're now using only these matched backgrounds, correct?

A I am using -- I showed the results three ways --

Q I asked you about --

A Well, let me --

Q -- Stage II and Stage III, Mr. Sullivan.

MR. GOECKE: If he could finish.

THE WITNESS: I'm just clarifying. I showed it three ways. In Stage I, I showed it the way with using a conservative background. In Stages II and III, I showed a more realistic approach.

BY MS. CORDRY:

Q So now answer my questions. In Stage II and Stage III, you're now asking that the Hearing Examiner only use the concurrent background?

A No, I'm not, because as I just indicated -- for example, if you look at Stage III and you look at the background contribution, the maximum around the queue, I believe it's a number like around 73 micrograms or some number in that order. If you want to rely upon the data you just provided, so it's 83, add 10 micrograms to that 121 that I showed for the total. You'd go from 121 to 131.

So I'm not asking the Hearing Examiner to just rely upon what we did. If he chooses to, he could take your number of 83 and subtract out the 73 or whatever it is I used and add the 10, add the difference. So I provided the opportunity for either Mr. Grossman or anyone to look at it both ways.

Q Mr. Sullivan, just, this seemed to come up a lot. When did I tell you you should use 83?

A Your data that you just showed --

Q No.

A Let me finish the statement. You provided data that I got last night at 8 o'clock at night. I was out yesterday. I looked over it as much as I could. You're showing a background, based upon EPA's updated analysis

through 2013, of 83 micrograms per cubic meter as NO2, one-hour, 98th percentile. That's what you showed. Now, if, if -- and I don't disagree. So my point is, if Mr. Grossman felt that our analysis using paired background was not conservative enough, all he has to do is add 10 micrograms to our results and he can look at it the other way.

Q Mr. Sullivan, I cited that figure for Arlington. When did I say that you should use the Arlington number?

A I didn't ask your opinion on that. You provided --

Q Well --

A Let me finish. You provided data that's updated since our February report --

Q I agree.

A -- that showed 83. I accept that. I didn't confirm that last night, but I accept that. With that number -- that would be the 98th percentile -- if you want to use a straight background number all the time rather than paired, Mr. Grossman can do so.

Q But, Mr. Sullivan, what I'm asking you is, and this seems to come up a lot in your testimony, I gave you, I put that number in, yes, but where did I tell you -- and you just said, the number you said I should use; you testified that right now, that I said you should use that 83 number --

where did I say at any point in these proceedings that you should use that background number from Arlington?

A I'll rephrase. The data that you provided that I received last night, showing EPA's updated data for 2013, shows an average of 83 micrograms. That would be for 2011, '12, and '13 for the Arlington site. I'll accept that as being correct. I can confirm it later. If that is correct, in my judgment that provides another way that Mr. Grossman or anyone could interpret our culpability analysis, and if he wants to be more conservative -- I don't recommend doing it because what I have done, in my judgment, is very appropriate for modeling NO2 in a refined way -- but if you're not comfortable, add the 10 micrograms --

Q Okay.

A -- and you'll find it goes from 121 to 131.

Q Okay. So that is your approach as to what you think should be done in terms of which monitor should be used, not what I said, correct?

MR. GROSSMAN: He's answered now three times.

MS. CORDRY: Okay. Well -- all right.

MR. GROSSMAN: He has said, when he used the term that you said should be used, he was referring to the fact that you provided him data --

MS. CORDRY: Right.

MR. GROSSMAN: -- last night. That's --

MS. CORDRY: And I think --
MR. GROSSMAN: -- what he was meaning.
MS. CORDRY: I understand.
MR. GROSSMAN: He said that now three times, Ms. Cordry.
MS. CORDRY: Okay. And that's why we want to clarify, because that's what keeps coming up in these hearings.
MR. GROSSMAN: You don't have to clarify it anymore. He has answered it three times.
MS. CORDRY: All right. So I -- okay.
BY MS. CORDRY:
Q And when you testified back in June last year, did you again testify that you were using this highest concentration in Montgomery County and surrounding areas as a way to show conservatism?
A I don't recall what I testified last June. Do you have the transcript?
Q Yes. If you'd turn back to page 224 in the transcript, pages 224 and 225, are you again expressing here that you could have used this matched background method but you're not because you're being conservative?
MR. GOECKE: What lines are you citing to?
MS. CORDRY: Starts at line 11 on page 224 and continues down into page 225.

THE WITNESS: I mean, it says what it says. I'm not sure what you're asking me.
BY MS. CORDRY:
Q Well, I'm asking you, were you at this point again testifying that you could have used that method but you didn't because you were being conservative?
A Could I have used this method, and at that point in time, I didn't think -- at that point in time, we were not -- this is June of 2013?
Q Yes.
A We weren't modeling the inside of a source, the gas queue, looking at what the concentrations would be in that extreme situation, and I didn't feel it was necessary at that point in time. We're not modeling NO2 specifically, as I am in 2014. In my judgment, it was very appropriate to use paired analysis as well as OLM and other factors, and I did so.
Q And that was also the point where you still had the NO2 values with the incorrect conversion ratios?
A That's all in the record.
Q Okay. So, at that point, you thought you had a lot of room, spare concentration levels that you wouldn't be going over?
A Well, certainly, with the previous background values, there's a lot more margin; that is, that is correct.

And at that point in time, we also weren't focused on what are the impacts inside a transient gas queue or loading dock.
Q And looking at the bottom of 225, you again state that the EPA says to use these kind of conservative methods because you can't model everything? The last paragraph there on 225.
A I'm referring to EPA's standard, Tier 1 type, conservative approach.
Q Well --
A I was using the, assuming that the 98th percentile or the maximum CO, one-hour, whatever it is, occurs at the same time as every receptor every hour --
Q Right.
A -- and that statement is correct.
Q And that's because the EPA recognizes that you can't go out and monitor for every gas station and every factory that's built; that's why they have you use this conservative methodology?
A As I testified earlier, they don't require you to always use that most conservative methodology. You can.
Q And that's what you were doing at this point when you thought you were well below the standard?
A That's correct.
Q Okay. And on the first page of that document, you

again -- this is page 206 -- in terms of, again, the measurements that you were using, you again say that using available regional-measured data, you add the highest values on to what you're modeling. That's the standard procedure.
A That is the standard, most conservative procedure, but I keep on saying that EPA guideline allows for alternative background treatments, which I've used in other applications. You would tend to start with the most conservative, and if you need to, you certainly have the right to go to less conservative treatments.
Q I understand, but --
MR. GROSSMAN: No, let's not go over this --
MS. CORDRY: Okay.
MR. GROSSMAN: -- over and over and over again. He already said so many times. You don't have to go over the same thing --
MS. CORDRY: Right, and I --
MR. GROSSMAN: -- over and over again, Ms. Cordry.
MS. CORDRY: I understand, but I just -- every time he testifies --
MR. GROSSMAN: I know you understand. If you understand, then move on to the next thing. You don't have to go over the same point over --
MS. CORDRY: Okay.
MR. GROSSMAN: -- and over and over again.

MS. CORDRY: I'm just, I would like -- I was just trying to point out how many different times he has used this in his own testimony --
MR. GROSSMAN: I understand --
MS. CORDRY: -- that --
MR. GROSSMAN: -- but you've already pointed that out. Move on to something else.
MS. CORDRY: Okay.
BY MS. CORDRY:
Q All right. What I was trying to actually get at was that you again were saying --
MS. CORDRY: Let me just ask the question.
MR. GROSSMAN: No. No. Move on to something else. You've already covered this point.
MS. CORDRY: I am trying to move on, which was --
BY MS. CORDRY:
Q The question was, in your testimony you had stated you used the highest value in Montgomery County and the surrounding areas, correct? You testified to that on numerous occasions?
MR. GOECKE: As necessary, it said.
BY MS. CORDRY:
Q As necessary, because Montgomery County doesn't have several of the monitors, correct?
MR. GROSSMAN: And you've covered that too. He's

answered that already.
BY MS. CORDRY:
Q It's a matter of geography, obviously. The surrounding areas for Montgomery County include the District of Columbia as well as Prince George's County and Arlington, Virginia?
A I wasn't using that term in that context at all. I was, as I mentioned previously, I was using the context of being representative of suburban Montgomery County, such as Wheaton. I would have -- I would not clearly used, nor did we ever discuss using, D.C. monitors to do that.
Q But you didn't ever say all that. You said, Montgomery County and the surrounding areas. So my question was simply, the surrounding areas do include the District of Columbia, do they not?
A Certainly in a geographic sense, they do, but for the objective stated here, that would not be appropriate, to use the District of Columbia's central business district to represent suburban air quality.
Q Can you define what you mean by the central business district?
A I'm referring to the District of Columbia and the heart of where the city is located. Plus the District, in general, has much more traffic, in general, and would be expected to have higher concentrations, in general, than the

suburban areas would be. This is all covered in the protocol.
Q Okay. So you now moved from the central business district to all of the District of Columbia, is considered -- you couldn't look at any monitor in the District of Columbia because all of the District of Columbia is inapplicable?
A I'm just saying -- I'm confused, because this discussion was part of the protocol that was discussed previously. My rebuttal report did not change any of the sites. So we can go back to, you know, why we did the protocol the way we did, but I'm not sure it pertains to what we're talking about today.
Q Well, you've -- okay.
MR. GROSSMAN: Yes. I have to ask that same question. Why is this a cross-examination regarding the rebuttal direct? It seems to be going back to the original, beyond the original testimony. I mean, that's what I don't understand. Why are we going backwards, beyond the direct on rebuttal?
MS. CORDRY: Because he's changing the -- he's changing the model, the version of the background that he's using and --
MR. GROSSMAN: But he said he didn't change that protocol --

MS. CORDRY: Well, but he's not abiding --
MR. GROSSMAN: -- and that didn't come up in --
MS. CORDRY: Okay. But he's not abiding by --
MR. GROSSMAN: -- that didn't --
MS. CORDRY: -- the protocol anymore. So that's one of the questions we want to do, is when did you move away from the protocol and on what basis did you move away.
MR. GROSSMAN: I'm just saying that your cross-examination should be directed towards the direct on rebuttal, not to his, all of his testimony at all times --
MS. CORDRY: Okay. I am trying to get to there because --
MR. GROSSMAN: -- because we'll never get done if we're going back over the cross-examination of everything he ever said.
MS. CORDRY: On rebuttal he directly testified about the background memo we did, about why he was not using the other monitors, why they were in the central business --
MR. GROSSMAN: I understand, and I've given you a lot of leeway, but you know, let's --
MS. CORDRY: Well, this is testimony he put in directly on rebuttal. I am asking him about that direct testimony --
MR. GROSSMAN: Well, no, that's not what you asked.

MS. CORDRY: -- that direct rebuttal testimony.
MR. GROSSMAN: No. I think you went beyond that, but go ahead.
BY MS. CORDRY:
Q Okay. Well, that's what I'm trying to find now. When you first off started saying Washington, you couldn't use monitors in the central business district, and I asked you to define that, and now you're saying that everywhere in D.C. is not potentially usable for any comparative monitor, correct?
A I'm not saying that directly. I'm saying that perhaps there's a location somewhere on the outskirts of D.C. that may have similar concentrations as Wheaton. What I've testified to is that we had a protocol meeting; we discussed using Beltsville, Rockville, and Arlington; and the judgment of the folks involved at that meeting, that was a reasonable set.
Now, we can disagree upon what monitors to use in Beltsville, and Dr. Cole did have a disagreement with us there. That's fine, but we never talked about District of Columbia in those discussions, nor since. And so our objective was not to find the highest measured concentration in the metropolitan area. Our objective was to be representative of Wheaton.
Q But your testimony actually said numerous times

that you were picking the highest measured concentration in Montgomery County and the surrounding areas, did it not?
A I've answered that question.
Q I know.
MR. GROSSMAN: He has answer that question.
MS. CORDRY: And he had answered that that was what his testimony was: the highest in the surrounding areas.
MR. GROSSMAN: He's answered the question.
MS. CORDRY: Okay.
BY MS. CORDRY:
Q Can you actually tell us anything about the monitors in D.C.? Do you know where they are located?
A I have looked on a map where they're located.
Q Okay.
A I can't, off the top of my head, tell you each one, but yes, I've analyzed that.
Q Is it fair to say that there's only one that you would consider in the central business district?
A I'm referring to the metropolitan area. The center of that core is Washington, D.C., and we can quibble about where is the central part of that. My point is, if you're looking for suburban locations to be representative of that, it wouldn't make sense to go into the District of Columbia, in general, because it's not -- it's not a

suburban location, in general. I might be able to find one, but in the judgment of the people involved in our protocol meetings, including Dr. Cole, we talked about Beltsville, Rockville, and Arlington.
Q So you are testifying that Dr. Cole affirmatively stated that he agreed with the use of Arlington?
A I don't recall anything in our protocol discussions or any in writing documentation with Dr. Cole that he suggested using any stations in the District of Columbia. I don't recall him saying he wanted to use a different monitor for NO2 than Arlington. What I do recall is there were three monitors with PM2.5 at Beltsville and Dr. Cole wanted us to average all three, which at one point we did. Looking more closely at the data, we don't agree with that approach anymore; we don't.
Q I'm sorry. You're saying he asked you to average the three?
A That's my recollection --
Q As opposed to --
A -- or maybe to use the highest one. I'll rephrase that.
Q In fact, is that not correct that he asked you to use the high monitor at --
A I believe that he did.
Q Yes. Okay.

A We didn't, we didn't -- we never did that. We didn't agree with that, and reasons I'm sure we'll get into later.
Q I'm sure we will because I don't think you're correct on that either. In any case, can you -- my question, I think, was, did Dr. Cole ever affirmatively say to you that he agreed with the use of Arlington?
A I don't -- I don't recall the verbal. What I do recall is we had written communication back and forth --
Q And is there any --
A -- and he didn't agree with everything, and he laid out what he didn't agree with. I don't recall in his response, written response or verbal, Dr. Cole saying that he thinks Arlington was a bad choice and we should use something in the District of Columbia or some other place.
Q And, in fact, at that point, the only thing that he really referred to was the Beltsville monitor, correct; he was discussing that one?
A For NO2?
Q No, for PM2.5.
A I recall Dr. Cole wanting to use the highest of the three PM2.5 monitors as the basis for background.
Q And, in fact, at that point, again, in your protocol you were showing the incorrect conversion factors for NO2; so it would have looked extremely low at that point

in terms of --
A You're talking about PM2.5.
Q I'm talking about Arlington.
A All right.
Q In fact, at Arlington, in your protocol you were using the incorrect conversion factors, correct?
A I'd acknowledged that, yes.
Q So if anybody was looking at NO2, it would have looked like that wasn't much of a place to find out if there was a problem, wouldn't it have?
A I'm not sure where you're going. I'm not sure how to answer that question.
Q Well --
MR. GROSSMAN: And I would agree, if-anybody-were-looking-at questions --
MS. CORDRY: Okay.
MR. GROSSMAN: -- it's very difficult --
MS. CORDRY: Okay.
MR. GROSSMAN: -- for anybody to answer.
MS. CORDRY: All right.
BY MS. CORDRY:
Q If someone is looking at where are the places where you're closest to the standard when you looked at the PM2.5 numbers versus the NO2 numbers that you were showing in your protocol, the NO2 number for your background looked

very far below the standard, did it not?
A Well, if you use an incorrect conversion, it'd all be relatively the same. That wouldn't affect the site selection in any way.
Q I understand, but my question to you, if you would answer it, was that looking at that, it would look like the number was very low compared to the standard?
A We have discussed that, yes.
Q And that was probably not then something that someone would concentrate on if they were looking at where is there going to be violations? That would not be their primary focus of investigation?
A Well, you're asking what I concentrated on or who? I mean, I'm not -- I can't follow your questions.
Q In general, if someone was looking to investigate where the station might violate the standards, would NO2 at that point, looking at your protocol number, have been the place that they would concentrate on?
MR. GOECKE: Objection. Speculative.
MR. GROSSMAN: I'm going to sustain that. I think --
MS. CORDRY: All right.
MR. GROSSMAN: -- once again, what's the point, in general, if somebody would look at -- what is the point in that?

MS. CORDRY: The point is that we are looking at what the NO2 numbers are and whether Arlington is an appropriate choice then or now and whether, if someone is going to measure the highest concentration, as it's been stated, whether we should be using Arlington, because it's going to make some major differences in terms of where the overall --
MR. GROSSMAN: But he's already, he's testified about his opinion about it. What's the point in asking about what other people would think?
MS. CORDRY: Well, he's --
MR. GROSSMAN: Let's just -- please try to hone your questions in.
BY MS. CORDRY:
Q Looking at Exhibit 564(b) and (c), you would certainly agree that Arlington is not by any means the highest concentration in this general area, correct?
A And you're limiting this discussion to NO2?
Q Yes.
A And the area refers to what?
Q The monitors in the, this is labeled something like the Washington/Maryland/Virginia -- I forget how this area is located, but when you go on the EPA website and you pull up that combination of monitors in this area -- statistical area, it's called, a CBSA. I forget what the

initials stand for, but --
A It's not the highest in the metropolitan area.
Q Right. In fact, it's pretty much middle-of-the-road?
A It is what it is. Depends what year you're talking about but it's pretty typical.
Q And the D.C. sites are higher?
A Yes, they are.
Q Okay. And I understand you discussed why you didn't think the Colvin Street site was a reasonable comparison -- because it was too industrialized?
MR. GOECKE: Objection. Asked and answered. Beyond the scope of --
MR. GROSSMAN: Yes.
MR. GOECKE: -- direct rebuttal and irrelevant.
MR. GROSSMAN: I sustain that.
MS. CORDRY: Well, it was discussed on --
MR. GROSSMAN: I sustained it. Move on to another thing.
MS. CORDRY: Okay. All right. It was discussed on rebuttal.
MR. GROSSMAN: Yes, but you've asked and answered. If you're trying to establish a contrast between his use of the highest concentrations and the highest representative concentration, which is what he said he used, you've

established that. He didn't take the very highest.
MS. CORDRY: Right.
MR. GROSSMAN: So you've established that --
MS. CORDRY: Okay.
MR. GROSSMAN: -- and he said what he meant was representative, highest representative. So why keep on beating that horse over and over again? I heard it.
BY MS. CORDRY:
Q Now, turning to the CO monitors, again, you didn't pick the highest monitor in the surrounding area, did you?
A That wasn't, that was not my objective. I did not.
Q In this case, Beltsville, the monitor there, it's actually located in -- would you call that monitor there a suburban location, or is that really a pretty rural location in terms of the amount of surrounding vegetation and forest land and so forth?
A I suppose, depending what scale or review you're referring to and how far you looked, what scope you're looking at for that site. It was the most representative location to the Wheaton area.
Q And what was most representative about it?
A Generally, it's proximity from the major metropolitan center, the major metropolitan area. We're already modeling the nearby roadways. This was a general

contribution, and in our collective judgment -- I don't recall any disagreement on the selection of Beltsville for CO.
Q And, again, if you look at Chart 564(d), is it fair to say that Beltsville is, in general, among the very lowest sites?
MR. GROSSMAN: This is for CO, right?
MS. CORDRY: Yes, for CO.
MR. GROSSMAN: Okay.
THE WITNESS: It's certainly significantly lower than the Washington, D.C., sites. There's no question about that.
BY MS. CORDRY:
Q Well, it's also lower than almost any other site on there, isn't it?
A Well, I mean, it is what it is. In our judgment -- I mean, there were three meteorologists involved in that meeting -- it was the most representative location. The numbers show how it relates to other sites.
Q Well --
A It is lower. There's no, there's no question. It's relatively low. It's not --
Q In fact --
A -- I mean, Arlington is closer to a more heavily concentrated area, as is the District of Columbia. It's not

that different than, say, St. Asaph Street in Alexandria. So it depends where you're located how high that number is going to be.
Q And again, just, you will agree that it's basically, mostly, it's the lowest number on the chart?
MR. GOECKE: Objection. Asked and answered.
MR. GROSSMAN: He doesn't have to -- first of all, you don't have to -- and every time you say again, it means you're repeating a question he's already answered --
MS. CORDRY: Well --
MR. GROSSMAN: -- and the numbers speak for themselves. You've submitted -- it's an exhibit, Exhibit 564(d). It shows all the numbers and you've highlighted it. I can see what the numbers are. What's the point in asking him whether one number is higher than another number arithmetically?
BY MS. CORDRY:
Q If you use the highest value listed here for CO in 2013, the actual highest, which is at the 34th Street site in Washington, which is not in the -- you would agree, that's not in the central business district core, is it?
A Which one are you referring to?
Q The 34th Street Northeast site.
A Without looking at a map and the site, I can't answer that question.

Q It's the River Terrace school.
A I don't recall where that's located, directly.
Q It's on the far side of the Anacostia River.
MR. GOECKE: Okay. Asked and answered.
MS. CORDRY: Well, I'm trying to give him a little help to know where it is.
MR. GROSSMAN: Well --
MS. CORDRY: Well, I'm trying to figure out where his definition of central business district stops, for one thing.
MR. GROSSMAN: All right.
THE WITNESS: I don't believe any of the stations that I've looked at located in the District of Columbia are going to be representative of the Wheaton area, and I could reassess that in the future, but that's my recollection from what I've done in the past.
BY MS. CORDRY:
Q So, again, my question is, that's not in the central business district, is it?
MR. GROSSMAN: Well --
MS. CORDRY: I don't get an answer to my questions.
MR. GROSSMAN: Once again, he's answered the question. He doesn't -- without seeing a map, he can't say, and he says he considers the metropolitan area. You keep on

going over the same thing over and over again. I understand the point you're making, Ms. Cordry --
MS. CORDRY: Okay.
MR. GROSSMAN: -- I understand the difference in the readings. I see it, but asking the witness over and over again the same question does not, is not appropriate.
MS. CORDRY: Okay, but I still have not gotten an answer as to what he considers the central business district, for instance.
MR. GROSSMAN: He's answered that. He said -- he was talking about the District of Columbia. He's answered that.
MS. CORDRY: Okay, because that is a different question than the central business district. We've been using those two terms --
MR. GROSSMAN: I know, but he's answered what he was talking about when he used that term. Asking him five times is not allowable.
BY MS. CORDRY:
Q And at this point, you have moved away from using the rural analysis totally. If you, though, continue to use the rural analysis --
MR. GROSSMAN: When you say at this point, what are you talking about?
MS. CORDRY: This point in time, here in the

hearing, in his current analysis.
MR. GROSSMAN: In his rebuttal analysis?
MS. CORDRY: Yes.
MR. GROSSMAN: Okay.
BY MS. CORDRY:
Q If you continued to use the rural analysis, as Dr. Cole has argued for, or at least some average of the two and you added on the actual highest value in the surrounding metropolitan area, have you done any analysis as to how close that would bring you to the NAAQS standard?
A Well, first, I'll clarify. You said I've abandoned the rural approach. I haven't abandoned that at all. What I, what I was -- initially our modeling was larger scale. We went, you know, way beyond the ring road. That was when we were focusing on and the discussion was focused on the pool, the school, and the closest home, and for that scale of analysis, rural was appropriate. After that, we started talking about the gas queue and the loading dock, and inside the ring road was the focus, and inside the ring road is urban.
So, you know, I'm not abandoning or changing my mind. What I'm saying is the focus now is on there, which is where we're at. I'm going to use the most applicable dispersion coefficients, which I've shown in my rebuttal report why I believe it's urban, and you know, it speaks for

itself.
Q And I understand you say we've moved away. Have we ever said that we don't want to still consider the entire area?
A I didn't say we've moved away. I said we did not move away. Oh, what I said was the focus now was on inside the mall, but I have not changed my position. If we're modeling out, way past Georgia Avenue, I'm going to use the rural --
Q Okay.
A -- that's EPA's guidance.
Q And you're not providing us with any of that data anymore. When you started doing the updated reports, you focused in just on the mall and you've never given us the broader data anymore, correct?
A Well, there's no reason to do so. It was under the -- we showed it was under the standard with the very conservative assumptions previously. So, I mean, I would then try to limit this -- I mean, there's 181 receptors. We're trying to make this more manageable. We're focusing on the mall, which is where the discussion has been for the past year.
Q Well, you showed it was below the standard when you were using the incorrect conversion ratios, for instance.

A No. I showed it both ways. Back on the August 16th report, I show what it would be in the neighborhood using the corrected NO2 conversion. It was under the standard --
Q Okay. But you didn't go out --
A -- 100 percent, and assuming 100 percent NO2 --
Q Yes. And you have not --
A -- and NOx.
Q -- you no longer go out even as far as the, like, for instance, the Georgia Avenue/University Boulevard intersection so we could see what the NO2 is on those roadways anymore?
A I think I've answered that question.
Q Well, I don't think so because I think I just asked it.
A I have said the focus has been on the southern ring road, where the gas station is going to be located and the loading dock is. You can look at those concentrations and see what impacts the gas station and loading dock have to the north, southeast, and west, and you find they go down quite quickly. There was no reason for us to model a large area anymore now that we're focusing on the mall area itself.
Q You're focusing on the mall area itself.
A No. I mean --

MR. GROSSMAN: Well, all right, he's answered that --
MS. CORDRY: Well, okay, because I --
MR. GROSSMAN: -- just move along to something else. He's explained why he did what he did.
MS. CORDRY: Right, because I think we have asked to have the broader --
MR. GROSSMAN: Well --
MS. CORDRY: -- things still done, but --
MR. GROSSMAN: -- you have your own expert. You can have anything done that you want, but you can't ask him to do modeling or analysis that's beyond what he's doing. That's -- you can ask him questions about it, and you have.
MS. CORDRY: I think it's reasonable to say that our own expert cannot afford to do the modeling that he's doing. I --
MR. GROSSMAN: Well, I --
MS. CORDRY: -- think that's unrealistic there.
BY MS. CORDRY:
Q All right. You had originally been using for your monitors choices the single year highest value, correct?
A We did early on use -- that was an extremely conservative approach -- yes, we did.
Q And you continued to use that through your January report, correct?

A I believe we did.
Q Okay. And that didn't change until your August report?
A I believe that's correct, yes.
Q Okay. Which, again, after you had to change the conversion ratios?
A Well, Ms. Cordry, as I've mentioned before, in doing modeling -- we offered to do the modeling using the highest value, which isn't EPA's policy, to be very conservative and try to achieve consensus. In August you started talking about what's going on in the gas queue. We could not afford that level of conservatism. We follow what EPA guidance allows, is to refine the analysis if you need to, and once you change the focus and standards change, we're going to change -- we're going to refine the modeling, as appropriate, to respond to those changes.
Q We, in July, brought up the fact that the conversion ratios were incorrect, and we also talked about what's happened on the mall. Did we ever tell you that we wanted you to stop looking at the broader picture?
MR. GROSSMAN: When you say did we ever tell you, you mean --
MS. CORDRY: Did we in the opposition, anyone at this table here, tell Mr. Sullivan that we wanted him to stop looking at the broader picture?

MR. GOECKE: Mr. Grossman --
MR. GROSSMAN: I'll let you answer the question, but I don't see where it gets any. Did anybody in the opposition tell you that?
THE WITNESS: I don't remember them directly telling us that, no.
BY MS. CORDRY:
Q Okay. So that you could still have looked at the same approach to using the background numbers of using, in the broader picture, of using the single highest year average?
A I just gave the reason why we did not do that. It would not be appropriate at that point in time.
Q And that has nothing to do with the fact that because the conversion ratio had to change, your numbers were much higher -- anywhere where you were modeling them, not just on the mall?
A Well, that's one factor, but you know, as I mentioned, I'll mention it one more time, is that the standards changed, the PM2.5 standard changed; the issue with the conversion factor happened; the background values changed; Dr. Cole mentioned that if we're going to use less than 100 percent conversion for NOx, that we should use a method like OLM. Well, these -- all these factors result in a response. We're not locked into a protocol as everything

else evolves and changes around it. We did our best to maintain that protocol, but the -- you know, it's a four-year process. This started in 2010, and so as things evolve, we're going to respond to those changes.
Q Mr. Sullivan, you've now stated again that Dr. Cole said you should use the OLM method.
A It's in the record what he said. I mean, I don't have the exact quote. If you just read --
MR. GROSSMAN: I remember the testimony of Dr. Cole.
BY MS. CORDRY:
Q And it does not include that he's telling you you should use it. Did he not in fact --
MR. GROSSMAN: No. He's -- I understand. He said that's one of the methods that's allowed to be used by the EPA but, in his own personal opinion, he wouldn't have --
MS. CORDRY: Used it.
MR. GROSSMAN: -- he wouldn't have gone beyond the Tier 1 thing. I understand.
MS. CORDRY: But --
MR. GROSSMAN: I remember Dr. Cole's testimony.
MS. CORDRY: Right.
MR. GROSSMAN: What's the point in asking this witness about it?
MS. CORDRY: Well, the point is, this witness

continually suggests that he's doing things because people ask him to do that, tell him to do that --
MR. GROSSMAN: It doesn't matter. It doesn't matter to what I have to consider.
MS. CORDRY: Okay, as long as we understand that these are not --
MR. GROSSMAN: I remember Dr. Cole's testimony. I --
MS. CORDRY: Okay.
MR. GROSSMAN: -- recall it. I've read it also. So --
MS. CORDRY: All right.
BY MS. CORDRY:
Q If you use the highest value from the 2010 to 2012 period for NO2 for any of these monitors, as you've been stating, you would agree with what I said in my memo, that the highest single year value for 2010 to 2012 was in fact 111, was it not?
A I don't recall.
Q Can you look at the chart and see?
A Which one is it?
Q 564(b).
A And you're referring to which years again?
Q 2010 to 2012, because you moved the years up.
A If I went to 34th Street in D.C.?

Q Yes. Yes.
A It has a 111. I didn't, haven't done an analysis of that relative to our previous modeling.
Q Okay.
A It's certainly a higher number than I would use.
Q And even the Alexandria health place, which is not in D.C., had 107?
A I'm not going to use an unrepresentative location to add to Wheaton.
Q Okay. I'm just --
MR. GROSSMAN: The chart speaks for itself, doesn't it?
MS. CORDRY: Okay.
MR. GROSSMAN: You don't have to go through each number with the witness and say, what does it say on the chart? The chart is, assuming you're accurate in putting together the chart --
MS. CORDRY: Okay.
MR. GROSSMAN: -- and I haven't personally checked your numbers --
MS. CORDRY: Right.
MR. GROSSMAN: -- but I assume that you're going to authenticate this when you testify in your surrebuttal, but assuming you're correct, the chart speaks for itself. Why is, what's the point in having --

MS. CORDRY: Well, one of the questions is -- one of the reasons why I was asking is because Mr. Sullivan stated he disagreed with much of what was in my memo, and what I'm trying to do is trying to figure out are you actually disagreeing with the numbers that are in the memo and what I'm saying alternative values were or are you simply saying you just don't think those should be used.
THE WITNESS: I don't recall saying I disagree with most of the things in your memo. What memo?
BY MS. CORDRY:
Q The background memo that we did, the legal analysis memo that was turned in.
A You mean maybe five or six months ago, where you show different sites?
Q Well, it was actually turned in, I think, in February, and you testified to it in your testimony on direct, that you disagreed with --
A Oh, I do disagree with that.
Q Yes. And are you disagreeing with the numbers that are in there, or are you simply disagreeing that you think whether they should be used or not?
A I disagreed with, as I recall, I disagreed with a number of things, but the central theme was you kept on saying I said I was going to use the highest value in the area and I didn't --

Q Yes.
A -- and my clarification was I used the most -- highest, most representative location in the region, but there were other issues I disagreed with.
Q Okay. But in terms of whether or not the memo accurately set out what would be, for instance, the highest value in the area, you're not disputing that I was, in fact, correctly setting down what were the highest values under the various scenarios that I laid out there, were you?
A Because I didn't feel it was relevant. I didn't confirm your numbers, and just for the record, I didn't confirm your numbers. I glanced at it and found a few issues with the, this package that came in today.
Q Do you want to tell us what those are?
A I don't know what the -- it's 564, I'm sorry --
MR. GROSSMAN: Yes.
THE WITNESS: -- Exhibit 564. I didn't have the opportunity to confirm and validate all these numbers. So I don't know if they're right.
BY MS. CORDRY:
Q Well, I mean, I did not wait until 8 o'clock to send it over. So if you didn't get it until then, that wasn't because of when I sent it, but --
A Well, I mean, just to clarify, I, I was, I was off on Tuesday --

Q Okay.
A -- on Wednesday rather. So whatever I didn't get Tuesday, I was gone during the day, I got it last night. So I did what I could in about an hour and a half --
MR. GROSSMAN: So we're making assumptions at this point that the numbers are correct. I don't have any independent thing --
MS. CORDRY: And --
MR. GROSSMAN: -- but there's no point in asking him about it because he didn't have an opportunity to check it.
MS. CORDRY: And I did want to go ahead and put these in. This is the -- I sent this around yesterday, as well, which are the actual monitor value printouts from the EPA website for 2013 for the different, different pollutants.
MR. GROSSMAN: Thank you.
MS. CORDRY: And these are just a direct download. So it's not a question of my typing or anything else. These are, there should be -- this, I guess, would be 565. Whoop, let me -- and actually, let me give you one because I gave you one that had -- I'll give you one I didn't print on the back of. Let me swap with you. That has print -- I save paper by printing on the back of things. So let me take that one back.

MR. GROSSMAN: That's very green.
MS. CORDRY: I try to be green. All right. So there should be two pages. The first two pages should be labeled PM2.5, 2013.
MR. GROSSMAN: Yes.
MS. CORDRY: And these are for the Washington/Arlington/Alexandria/D.C./Virginia/Maryland/West Virginia geographic area label, although I've never seen anything from West Virginia in here. So -- but that's the name of this area. Then the next page would be NO2 for 2013.
MR. GROSSMAN: All right. Let's -- you want these exhibitized?
MS. CORDRY: Yes, please. It could all just be one exhibit, I believe.
MR. GROSSMAN: Pardon me?
MS. CORDRY: It could just be one exhibit, I think.
MR. GROSSMAN: Yes. Okay. So this will be 565. (A) will be the -- where is this from again? This is from --
MS. CORDRY: This is downloaded from the EPA monitor website.
MR. GROSSMAN: Okay. EPA monitor readings for PM2.5. This is 24-hour, right?

MS. CORDRY: Yes. Well --
MR. GROSSMAN: That's what it says on here.
MS. CORDRY: Yes.
MR. GROSSMAN: Twenty-four-hour, and then -- so that's 565(a), and then 565(b) --
(Exhibit No. 565(a) was marked for identification.)
MS. CORDRY: For NO2 for 2013.
MR. GROSSMAN: Oh, no. The one I have is -- well, I have CO.
MS. CORDRY: Oh, well, they may just be in a different order.
MR. GROSSMAN: Okay. So since I've already written that, it'll be EPA monitor readings for CO and that's one-hour and eight-hour.
(Exhibit No. 565(b) was marked for identification.)
MS. CORDRY: Right. That would be (c) then?
MR. GROSSMAN: No. That's (b).
MS. CORDRY: Oh, that's (b)? Okay. I'll change our numbers. Okay.
MR. GROSSMAN: One-hour and eight-hour, and then --
MS. CORDRY: That actually works because the very last sheet is, it's the only one that's from a different

area. This is Virginia as a whole, because I wanted to pick up the site in Richmond that Mr. Sullivan referred to last week.
MR. GROSSMAN: All right. So 565(c) is EPA monitor readings for NO2, one-hour. Okay.
(Exhibit No. 565(c) was marked for identification.)
MR. GOECKE: That's for Virginia or Washington/Arlington/Alexandria?
MS. CORDRY: There's two different NO2 -- the first one is the Washington --
MR. GROSSMAN: I only have one NO2.
MR. GOECKE: I have two.
MR. GROSSMAN: It says, Page 1 of 1.
MS. CORDRY: Well, there should also be one there with it labeled Virginia NO2. You don't have that?
MR. GROSSMAN: Not on mine.
MS. CORDRY: Here, if you don't have it, let me give it to you. This goes with it as well.
MR. GROSSMAN: Yes. All of mine are --
MS. CORDRY: Okay. Here you go.
MR. GROSSMAN: -- Washington metropolitan area.
MS. CORDRY: That would be (d), I guess, then.
MR. GROSSMAN: Well, I'll make it part of (c), if you, or do you want --

MS. CORDRY: Well, it is separate from (c) --
MR. GROSSMAN: All right.
MS. CORDRY: -- in that (c) is dealing with the Washington metropolitan area.
MR. GROSSMAN: All right. So (d), 565 (d) --
MR. GOECKE: Is Virginia?
MS. CORDRY: Yes, Virginia as a whole.
MR. GROSSMAN: -- is EPA monitor readings for NO2, one-hour, in Virginia. Okay.
(Exhibit No. 565(d) was marked for identification.)
MS. CORDRY: Okay.
MS. ADELMAN: And excuse me. Could I ask what 565(a) was again, Mr. Grossman?
MR. GROSSMAN: That was the EPA monitor readings for PM2.5, 24-hour.
MS. ADELMAN: Thank you.
MR. GROSSMAN: Okay.
BY MS. CORDRY:
Q Okay. So, in fact -- and, again, these are primarily there so that you can just, these can be checked against the 2013 numbers on the compilation sheet, which are what -- the only thing that's changed from when these kind of exhibits went in as 364, hard to believe, or 346, can't remember what it, which one it was, but -- hold on. It went

in originally as, yes, it went in originally as 364, and we are now at 564 with the updated version through 2013.
MR. GROSSMAN: Okay. So?
BY MS. CORDRY:
Q Okay. So just looking at the ones that are labeled 565 --
MR. GROSSMAN: 5, yes.
BY MS. CORDRY:
Q -- do you recognize this kind of printout, Mr. Sullivan?
A I do.
Q This is taken when you do a direct download from the EPA website?
A Looks like air data.
Q Okay. So this does not involve any manipulation; this is just a direct printout of the website numbers?
A Appears to be.
Q Okay. All right. So if the numbers on these charts match the numbers on 565, then we have the correct --
MR. GOECKE: The numbers on what charts?
MS. CORDRY: 564 --
THE WITNESS: 564.
MS. CORDRY: -- the ones we just put in, the compilation charts.
MR. GROSSMAN: So you're trying to authenticate --

MS. CORDRY: Yes.
MR. GROSSMAN: -- 564 by referring to the numbers from 565?
MS. CORDRY: Yes.
MR. GROSSMAN: I see.
MR. GOECKE: Again, I think this would be better served by Ms. Cordry's testimony. Mr. Sullivan doesn't know what she has or has not done.
MR. GROSSMAN: And just in fairness to him, I understand that, conceptually, you're saying that the readouts in 565 confirm or are reflected in your summary in 564 exhibits, and he may be able to answer that, although, in fairness, he hasn't had much time to look at it. So --
MS. CORDRY: All right. I --
MR. GROSSMAN: Can you answer that now, conceptually, or is that something you'd need more time to --
THE WITNESS: Conceptually, to say that's -- to confirm that 564 is correct relative to 565?
MR. GROSSMAN: No, not that necessarily it's correct -- I realize you haven't done a side-by-side -- but that the idea that she's getting across is that the EPA monitor readings in 565 are then reflected or would be reflected in the data that she's provided in 564, not necessarily that the numbers are correct.

THE WITNESS: If I understand correctly, 565 would be an appropriate basis for 564.
MR. GROSSMAN: Yes, I think that's what she's saying.
THE WITNESS: Right, agree.
MR. GROSSMAN: Okay.
BY MS. CORDRY:
Q I mean, if we want, just to do a very quick part, the last three numbers, if you go to page 2 --
MR. GROSSMAN: No, let's not do the -- we're not going to do the math while he's on the stand. I just --
MS. CORDRY: All right. No, it's not the math. I'm just -- there are three numbers on the second page here and three numbers at the bottom that you could confirm if you want.
MR. GROSSMAN: Well, when you do your --
MS. CORDRY: Well, I --
MR. GROSSMAN: -- direct -- what's the point?
MS. CORDRY: Okay.
MR. GROSSMAN: You can't testify as a witness now. You're just examining the witness. So --
BY MS. CORDRY:
Q If you look at the last page in 565, which is the sheet that has the Virginia NO2 numbers.
A Okay.

Q And that does have that Richmond site that you mentioned?
A It does.
Q Okay. And that's showing that the 98th percentile is 46 parts per billion?
A You mean it shows it on the chart.
Q Yes. That's what it shows, correct, for Richmond?
A Yes.
Q Okay. And if you --
MR. GROSSMAN: I'm sorry. Where is this?
MS. CORDRY: That's the very last line on there.
MR. GROSSMAN: Bryant Park?
MS. CORDRY: Yes.
MR. GROSSMAN: Okay. And that's -- well, I see different numbers, but I see 58, 46, 46, zero. What --
MS. CORDRY: Right. So the --
MR. GROSSMAN: -- what are you asking there?
MS. CORDRY: -- it's the column that's labeled --
MR. GROSSMAN: 98th Percentile?
MS. CORDRY: -- 98th Percentile.
MR. GROSSMAN: Forty-six, okay.
MS. CORDRY: Right. Okay.
BY MS. CORDRY:
Q And that's the number that you multiplied by the 1.88 to get the micrograms per meter cubed we used?

A That's the correct conversion.
Q And that's the number you multiplied to get the 86 micrograms per meter cubed that you said last time was the value at Richmond?
A Yes. Forty-six times 1.88 equals 86.
Q Okay. All right. And last week was the first time you've ever mentioned Richmond as a monitoring site, correct?
A I believe so.
Q Okay. Is one reason for that because Richmond, the site was only set up in the middle of October last year?
A It was a new -- it's a new site.
Q Okay.
A It's one of those sites that, as I understand it, is responding to EPA's need for near-road monitors.
Q So that site only has about 10 weeks of data on this chart, is that correct?
A Well, it has more data than that now, but --
Q Well, I'm not asking that. I'm asking, on this chart and from that number, that's based on about 10 weeks' of data?
A This is based upon 2174 hours, which is approximately one-quarter of a year.
Q Okay. As opposed to all the rest, which have 8500, 8600 readings, correct?

A It's a quarter of a year.
Q Okay. In fact, if you go to the website, isn't it, it didn't actually get put up until the middle of October; so it's not even quite a quarter of a year?
A It's 2174 hours out of 8760 hours a year. We can do the math, but it's approximately a quarter of a year, and it's still running as of today. So there's more data as of now.
Q Right. In EPA guidance, do they normally tell you to rely on monitors that have less than a year of data?
A They do not for modeling purposes. I provided that number as a reference point, along with a couple of others. There's very limited data available right now in near-road monitors. It's a new program, and from talking to Mr. Krask, he mentioned to me that Richmond did have a monitor and it's one of the, one of the only ones nearby that has data at this point that's available.
Q Right.
A So, you know, I didn't try to mislead. I wasn't trying to say it was a full year. It's not. It certainly appears to be reasonably representative based upon comparing what's available here with the data from 2014. If you look at this average relative to other sites, it's really, most likely would be in line, is my judgment.
Q Okay. And you haven't provided us any data with

2014; you're just saying that right now. Okay.
A I did it last night before I went to bed.
Q Okay. Because last week, when you came up with this new site, you only told us about 2013.
A Correct. I just, I just looked last night at 2014 in response to getting your package.
Q And doesn't the EPA normally require that you have at least three years of data from a site to use it in modeling?
A Well, they do, but I wasn't using that in modeling. I was using it as an example.
Q Okay. And if I understood your testimony last week, you said several times that you can't really expect the site here at Wheaton to be higher than this site, which is right by the expressway, correct?
A I gave that as one -- I gave three examples. That was one of the three.
Q I'm asking you about those three. Didn't you say several times --
A I put it in context --
Q -- that because this was near an expressway, you couldn't expect the Wheaton site to be higher than that? Correct?
MR. GOECKE: Objection. Asked and answered.
MS. CORDRY: Well, I'm trying to just --

MR. GROSSMAN: I'm going to overrule it. Go ahead.
THE WITNESS: In my judgment, a monitor located in close proximity to I-95 or the other two locations I mentioned, including Los Angeles, Port of Los Angeles, I-710, the concentrations at Wheaton are going to be lower than the concentrations next to those major roadways. That's my judgment.
BY MS. CORDRY:
Q Okay. Would you also expect concentrations in the residential area in D.C. to be lower than next to a highway?
A It depends.
Q In an area, say the Takoma area of Washington?
A I'd have to look at a map and put it in context. It depends what the nearby roadways are, what the orientation of those roads are to those locations, what are the power plants nearby. I mean, you're asking a hypothetical -- needs a lot more information to answer.
Q That's right. So you can't really judge too much just from the fact that this happens to be next to the road in Richmond, correct?
A No. I mean, certainly, if we're talking about automobile impacts from I-95 or the roadway in Los Angeles, there's 190,000 vehicles, 32,000 of which are heavy-duty trucks; if they're 153 in LA there, it would, my expert

judgment, it would be a lot lower than that in Wheaton from the ring road, University, and the gas queue.
Q But, as we've also noticed, that you can have values in D.C. that are higher than that value next to I-95, correct?
A I don't recall -- I haven't looked at that. I mean --
Q Well --
A -- it's certainly possible.
Q -- when you look at 564(b) --
MR. GROSSMAN: Let's, you know --
MS. CORDRY: Well --
MR. GROSSMAN: -- you're going over the same territory, really, again.
MS. CORDRY: Well, I'm asking now to --
MR. GROSSMAN: We understand there can be differences.
MS. CORDRY: Okay. And that's --
MR. GROSSMAN: You've covered this area. Just move along to something else.
MS. CORDRY: Well, that is the point, that you can't assume that I-95 is somehow dispositive, that these are very fact-specific kind of issues.
MR. GROSSMAN: He's already answered that. He said --

MS. CORDRY: All right.
MR. GROSSMAN: -- exactly that, but he said that it's a significant factor if you're right next to I-95.
BY MS. CORDRY:
Q I want to be sure if I understood one point. Did you say last time that you couldn't find any studies that actually showed emission levels on, on or very near the roadway that were at or above the NAAQS limits?
A You said emission. Do you mean air quality concentrations, NO2.
Q Yes. Yes. Yes.
A I didn't -- when I looked at it, I didn't see any.
Q Okay. All right. And I would now like to look a little bit at the PM2.5 monitors and what, where you're at with those and what you did. You did say Dr. Cole wanted you to use the highest monitor at Beltsville, correct?
A That's my recollection, yes.
Q Okay. And if we look at 564(a), that's the one that I have labeled at the bottom HU. The Beltsville is on the Howard University campus, is that correct?
A That's correct.
Q Okay.
MR. GROSSMAN: I'm sorry. Am I looking at 564 or 565? What am I looking in here?
MS. CORDRY: 564(a).

MR. GROSSMAN: 564(a). Hold on.
BY MS. CORDRY:
Q And when you did the protocol, you came up with a value of 12.1 originally, was the number you used for the background for PM2.5?
A I believe that's correct.
Q And if you look at that chart, that is the number for the Beltsville monitor there, that last Beltsville monitor on the page for 2010?
A Correct, but I'd like to clarify, I didn't have much time to look at this, but this chart is wrong.
Q Okay. What's wrong about it?
A You're using this terminology of full-time and part-time sites. The, when you say -- I think what you mean when you say full-time, you mean reference method site, and part-time means a TEOM site, which says, Hourly Analysis. You seem to have mixed those up --
Q Okay. Well, in the first place --
A Let me finish. The --
Q -- I'm using my --
MR. GROSSMAN: Well, hold on. Let him finish his --
MS. CORDRY: Okay. Okay. Well, he's --
MR. GROSSMAN: Let him finish what he's saying.
BY MS. CORDRY:

Q Okay. Go ahead.
A What is significant, the -- when you say full for the 12.1, that's a TEOM; that's not a full-time site. And the TEOM at that location was biased time.
Q Mr. Sullivan, who told you that's a TEOM monitor?
A Look at the records. Look at your own --
Q I'm sorry?
A -- look at your 565.
Q I'm looking at 565.
A And turn to, turn to where it talks about Block-Averaged Values on the second page --
Q Yes.
A -- of 560 --
Q Yes.
A -- I think it's 565 --
Q Yes.
A -- and look at Site 3 --
Q Yes.
A -- Howard University.
Q Where does it say that's a TEOM model?
A See where it says, Block-Averaged?
Q I see it says, Block-Averaged. Where does that say it's a TEOM monitor?
A I'm telling you that block-averaged refers to TEOMs because --

Q Are there not other kinds of monitors --
A -- because --
Q -- that fall under that?
A -- if you, if you refer to --
MR. GROSSMAN: Hold on. Hold on.
MR. GOECKE: Objection.
MR. GROSSMAN: Let him finish before you --
MS. CORDRY: Okay.
THE WITNESS: If you refer to the number of observations there, do you see where it says, 350, 346, 323?
BY MS. CORDRY:
Q Yes. Yes.
A That means pretty much every day they have a data point.
Q Right.
A If you turn to the previous page, you see numbers like 110, 120. Those are every three-day, every six-day reference method samples.
Q Okay.
A When they have 365 or so numbers, that's -- they're taking hourly data points for each day and coming up with a daily average on that basis. So it's not a full -- this Site 3 is a reference method, is a, is a TEOM, and it's high.
Q Okay. Now, Mr. Sullivan, if you could stop for

just a moment and let me ask the questions in a fashion --
MR. GROSSMAN: Well, he's -- hold on a second. He has, he can answer the questions.
MS. CORDRY: But he --
MR. GROSSMAN: He's trying to answer your question. He thought, he feels there's an error, and he's explaining it. You don't have to lecture him. Just ask your -- if you think he's wrong --
MS. CORDRY: Okay.
MR. GROSSMAN: -- ask a question that will elicit that.
BY MS. CORDRY:
Q Okay. First off, my use of terminology here is simply my use of terminology, that I'm referring to certain things. So it's not wrong or right. It's just a description of things, okay? So when I said here, which I was going to say before you said all, when I say full, it means a monitor read essentially on a daily basis. That is in fact what you have just said about these ones that are labeled BLK monitors, that they are read on a daily --
A No. You're --
Q Okay.
A Let me clarify. In the past, when you said full-time, you meant a monitor that was always operating, you had hourly data every day of the year; and, when you

said part-time, you're referring to reference methods, which is basically taking a filter and putting a filter on like a vacuum cleaner, kind of, that sucks air through that filter for a day and you do pre- and post-weights to that filter. That's the reference method, but that's one data point every three or six days. So --
Q I --
A -- that's the terminology they've used, just to be clear, and I made it clear that when you say full-time, you're referring to a TEOM, which is a secondary method; when you say part-time, that is the gold-standard reference method.
Q Okay. That's very true. I understand what you want to say about that, but my statement here was part-time means a monitor that's read on a periodic schedule, anywhere from once per three days to as little as once every 10 or 11 days. Is there something untrue about that statement?
A Correct, there is.
Q And what is that?
A The EPA on the reference method does sampling every three days or every six days. If it was once every 11 days, there'd be a malfunction of the equipment. That's not standard.
Q Well, if you look at the PM2.5 chart here, 565 --
MR. GOECKE: Which 565?

MS. CORDRY: 565(a).
BY MS. CORDRY:
Q And if you look at the second column there labeled OBS -- that's observations, correct?
A Correct.
Q That's the number of days that you have readings from?
A Correct.
Q Okay. If you go about halfway down there, you see one that's labeled 32.
A Correct.
Q Well, isn't 32 about once every 10 or 11 or maybe even 12 days out of 360?
A What I'm saying, in my experience, collecting samples like this, it's always done on a three- or six-day basis. If it's this low, it is a partial year they had it operating or there's been a lot of malfunctions, but that's not the policy that I've ever seen, take a sample every 11 days.
Q Well, and two more down below that there's one labeled 50. So, again, that's --
A Same answer.
Q Okay. But you don't know that; you're just assuming that that's the problem?
A I'm just stating how you could have less than the

normal number of days.
Q Okay.
A I'm not, I'm not -- I don't know why it was low, but those are the kind of reasons that generally occur.
Q Okay. But you don't know that for a fact; you're just assuming that, as a generality, that may happen?
A I've answered that.
MR. GROSSMAN: Ms. Cordry, when you use the term full, let's say in that first line -- and I think that the witness --
MS. CORDRY: Yes.
MR. GROSSMAN: -- said that that refers to a TEOM -- are you saying it does not refer to a TEOM monitor?
MS. CORDRY: Okay. There's a couple of things. Number one, when I was using this, I was simply using full as a way to refer to a monitor that was read on, generally, every day, because if you'll notice, I use full on the first line there, where the 420 34th Street Northeast one.
MR. GROSSMAN: Right.
MS. CORDRY: And if you look at 565, there are 355 observations listed there.
MR. GROSSMAN: No, but I'm asking you, is that -- do you disagree with Mr. Sullivan that that first line where you said full represents a TEOM monitor?
MS. CORDRY: What I am saying is, when I said

full, all I was saying for my own purposes in labeling this chart was to distinguish between monitors where there were readings virtually every day versus readings where there were not. Now, there's a different question that we get to about what kind of monitors were used for certain other aspects, and the three at the bottom there that I have broken off with a line there, they are listed separately on this chart, on page 2 of 565(a), as 24-hour BLK average. So, yes, there is something different about those three.
MR. GROSSMAN: But you don't think that the first one listed, the 420 34th Street Northeast, where you said full, you don't think that that's a TEOM monitor?
MS. CORDRY: I don't believe so, no. I mean, there are a number of monitors. There's another monitor there, also, at Telegraph Road that is also listed as 352 observations a year. Actually, there's three of them actually on this chart at 565. There is the 420 34th Street, which has 355 observations; there is the 2500 1st Street Northwest, which has 358 --
MR. GROSSMAN: Right, and Telegraph Road.
MS. CORDRY: -- and Telegraph Road.
MR. GROSSMAN: And you don't think that any of those are TEOM monitors that you're referencing?
MS. CORDRY: I'm not really sure because I didn't try to go into there and deal with what each particular

monitor is. I can actually probably find out because I have some information from those, but what I will --
THE WITNESS: Well, to clarify --
MR. GROSSMAN: All right. Well, you seem to have taken umbrage when --
MS. CORDRY: Well, I'm --
MR. GROSSMAN: -- Mr. Sullivan said it was a TEOM.
MS. CORDRY: Well, I am because I'm going to get to the question. I don't know about all of them. What I do know about is at Beltsville.
BY MS. CORDRY:
Q Who told you this was a TEOM monitor, in particular?
A EPA's web page.
Q And does a Maryland site say that?
A What I'm saying, Ms. Cordry -- you can check yourself -- that Site, Monitor Site 3 in Beltsville is a TEOM --
Q Okay.
A -- monitoring Sites 1 and 2, a reference method --
Q Let me ask you --
A -- and one of the sites, Site No. 2, I believe it is, is a duplicate site where they don't appear to do every six days, as you mentioned.
Q Let me ask it a different way. Are TEOM monitors

the only kind of monitors that are read on a daily basis?
A No. I mean, to clarify, I have seen cases where they will take daily reference methods. In a special case, they will do that: somebody goes out every day and changes that filter. It's unusual, but I've seen it done.
Q Are there other kind of monitors, besides TEOM monitors and daily reference methods, that are read on a daily basis?
A That are read on a daily basis?
MR. GROSSMAN: You mean other EPA background monitors or other --
MS. CORDRY: Yes.
MR. GROSSMAN: -- anybody?
MS. CORDRY: Yes. Yes.
MR. GROSSMAN: Other EPA background monitors?
MS. CORDRY: Reading these NO2.
THE WITNESS: You're referring to composite, 24-hour, like a filter? I'm not following your question exactly.
BY MS. CORDRY:
Q Well, I'm saying, TEOM is a particular kind of a monitor, is it not?
A It is.
Q There are other kind of monitors that read on a 24-hour basis, continuous basis?

A Sure.
Q And who told you that this monitor was a TEOM monitor?
MR. GOECKE: Asked and answered.
MR. GROSSMAN: Right. I --
THE WITNESS: Yeah, I've answered that question.
MS. CORDRY: No, it hasn't because he's -- he has not yet told me this because he's -- okay.
THE WITNESS: Well, refer to --
MR. GROSSMAN: I thought he just said he got it from the EPA --
MR. GOECKE: He said the EPA website.
MS. CORDRY: Okay.
BY MS. CORDRY:
Q Well, what I'm saying is, are you sure there are no other kind of monitors -- let me -- okay.
A For particulates?
Q All right. Let me ask you a different way. The State of Maryland does not use TEOM monitors. Do you know that?
A I didn't -- I don't know. I didn't check that.
Q Okay. That was really my question. If you had asked Mr. Krask what kind of monitor was used there, what would he have told you?
MR. GOECKE: Objection. Speculative.

MR. GROSSMAN: Yes. I'm going to sustain that.
MS. CORDRY: Okay. Then I'll put it a different way. Let me just to do this rather than try to go at it the other way.
MR. GROSSMAN: Thank you. Is this to be marked as an exhibit?
MS. CORDRY: Sure.
MS. ADELMAN: Do you have extras, Karen?
MS. CORDRY: Yes.
MR. GOECKE: Karen, is this a new document or is this something we've gotten before?
MS. CORDRY: This is a new one because I didn't realize we were going to have this problem, but I thought I'd have it in case.
MR. GROSSMAN: I don't know what that means.
MR. GOECKE: I don't know what that means either, but --
MS. CORDRY: What it means is I thought that --
MR. GOECKE: -- what I do know it means is it, once again, violates the 10-day rule.
MS. CORDRY: Well --
MR. SILVERMAN: It's cross-examination.
MS. CORDRY: This is --
THE WITNESS: What I clarified, EPA's web page, my understanding was it was a TEOM --

BY MS. CORDRY:
Q And what web page --
A -- but this I haven't seen before. So, I mean --
Q What web page is that?
A -- I can't evaluate it on the stand, but -- I don't recall. I remember looking at EPA's web page, and our conclusion was it was TEOM.
Q Well, you said your conclusion was because it said it was a BLK monitor, and you deduced from that that it was a TEOM monitor, correct?
A Because BLK typically means you're taking hourly values and, if you have less than 24 in a day, for example, you divide by how many days you had. If you have a, if you have a 24-hour sample, it's not typical that I've seen to refer to it that way.
Q Well, there are other kind of monitors besides TEOM monitors, are there not, that take those kind of daily readings?
A I'm sure there are. I haven't, I haven't had experience in the field with them. My main point, Ms. Cordry, there's three monitors in Beltsville -- we can go a long time about this -- there's three monitors, two of which are in agreement with each other and one that is way higher than the other two, and standard monitoring practice is you don't rely on outliers. And that one location, that

one sample, Site 3 at Beltsville, is an outlier --
Q Okay.
A -- whether it be a TEOM or whatever it is, it's clearly an outlier.
Q So according to Mr. Krask, who I did ask yesterday and which is --
MR. GROSSMAN: Well, no, no, no.
MS. CORDRY: Well, wait a minute. You let him do hearsay. I'm going to do hearsay as well.
MR. GROSSMAN: Wait, wait, wait, wait. He's a witness here, and when you're testifying under oath, you can testify to the extent that it is permissible --
MS. CORDRY: All right.
MR. GROSSMAN: -- we'll see --
MS. CORDRY: All right. Well, then let me ask the question that way.
MR. GROSSMAN: -- and then subject to objection, but you can't just testify --
MS. CORDRY: All right. Then let me ask --
MR. GROSSMAN: -- from the, as an attorney questioning a witness.
MS. CORDRY: Let me ask the question that way.
BY MS. CORDRY:
Q If Mr. Krask would state that this is not a TEOM monitor, it is a BAM Monitor A -- beta-attenuation mass

monitor I think that stands for -- would that surprise you?
A It wouldn't. It's also an hourly value that would be block averaged, and it's not the gold standard. In other words, if you have a BAM -- you can ask Mr. Krask this question yourself -- if you have a BAM or a TEOM side by side with two reference monitors and the two reference, reference method monitors match and that BAM is out in left field, you're not going to rely upon that data set. And to give you an example, I mean, if you want to bring that point up, if we look at 2012 as an example, we have two gold-standard methods that show an annual average of 8.5 and 8.3, but if you look at what I call the TEOM, may be a BAM, that's showing 11.3 compared to 8.5 and 8.3. What are you going to believe?
Q Well, before you go asking about all of this, how about staying with my question, which is, you now agree, apparently, I think, that this is perhaps not actually a TEOM monitor, it's actually a different kind of monitor, correct?
A I will confirm with Mr. Krask. I'll take your word for it for now, but my point was the BAM and the TEOM are two equivalent methods; they're not a reference method. And so my point I made, if it's the TEOM or BAM doesn't matter; they're not reference gold-standard methods.
Q Do you know if this monitor has been certified as

a federal equivalent monitor?
A Well, it could be. I know that TEOMs are, but the equivalent is not, is not the same as a reference method. If there's a disagreement, you rely upon what EPA calls the gold standard, which is the reference method itself.
Q And in terms of, if you were trying to get a single yearly value from this site for the annual number -- you did some averaging here of sites -- is there a way that you were supposed to put these different monitors together to get the yearly average?
A We, we initially -- and it was a compromise to Dr. Cole's position -- we used that, that hourly monitor. We did average all three. In the more recent analysis, we used the two monitors together as a basis to show the differences.
Q I'm sorry. When did --
MR. GROSSMAN: You mean the two reference monitors?
THE WITNESS: Right.
BY MS. CORDRY:
Q When did you average all three?
A My recollection, the 2012 report we did.
Q The November 2012 report?
A Correct.
Q Doesn't that report use the 12.1 number only?

A Well, you probably are correct. When we showed the trends before, we used all three. I recall that, but yeah, previously used the highest value.
Q And when you did those trends, you were just doing that as a point of comparison, just to show how conservative you were?
A We were showing the trends. I don't, I don't recall off the top of my head -- the 12.1, was that -- which of the Beltsville sites we used. I don't know. I don't recall.
Q Well, the chart is there.
A I'm saying I don't recall.
Q Well, the 12.1 is the number shown for 2010 for Beltsville and that's --
A If it's based upon the hourly monitor --
Q Yes.
A -- it's extremely conservative.
Q Okay. And that's what you agreed to use in the protocol?
A Well, that's what's in the protocol.
Q Right. And that was after Dr. Cole asked you to do that and you agreed to that?
A Well, I mean, for context, obviously the standard changed in what, January of 2013, and the approach of using an extremely conservative value was not, was not appropriate

at that point in time. And in response to Parks and Planning staff and our judgment, we provided an EPA methodology, averages appropriate for that point in time. It changed.

Q But you didn't discuss that or get any agreement with Dr. Cole about changing that, correct?

A We did not seek to have another protocol discussion.

Q Okay. And if you kept the same number from that single monitor, even with the three-year averages, you still stay above -- you stay as high as 11.73 out through 2012, is that correct?

A The math will be relevant because what I've testified to is, after that report in November 2012, I evaluated those, looked at those three monitoring sites and realized that that one site was not a reference method site and I plotted over a function of time and that site drifted. Initially it was reasonable, and that site drifted way high, as the example I gave you in 2012. That occurred in 2011 as well. It just drifted high. I don't know why, what kind of malfunction it had --

MR. GROSSMAN: When you say that site, you mean that particular, single, non-reference monitor?

THE WITNESS: Correct, that that one drifted relative to the other two. At that point in time, my

conclusion was it was inappropriate to use that one. When I have two reference method there that are in agreement, I'm not going to use that one that's way out there and not representative.

BY MS. CORDRY:

Q Those sites are checked and reviewed and quality assurance by the state, are they not?

A They are, I'm sure, to some extent.

Q All the monitors are, are they not?

A I'm sure that they are, but I'm telling you, in my judgment -- you're asking my opinion -- in my judgment, from doing monitoring programs --

Q Actually, I didn't ask your opinion.

A Well, all right, I'll stop.

Q I asked you --

MR. GROSSMAN: Yes.

MS. CORDRY: I asked him a fact: Are those sites quality assured and reviewed and monitored by the state?

THE WITNESS: Well, but the -- I wanted to give you an answer that wouldn't be misleading. My point was that yes, they do go through a quality control procedure but sometimes a state that does that will have a monitor that's not working correctly, whether it be an air quality or a meteorological sensor. So does that mean they're all right? It doesn't, and if they have two reference methods there,

they're going to rely upon those reference methods much more than the, the BAM, if that's what it is.

BY MS. CORDRY:

Q Okay. Not the TEOM, which you've now told us repeatedly you thought it was but it turns out it's not?

MR. GROSSMAN: All right. No, you don't --

MS. CORDRY: Okay.

MR. GROSSMAN: -- need to run over that again. We understand.

MS. CORDRY: Okay.

BY MS. CORDRY:

Q And in all this quality assurance, they never changed these numbers, correct, for that monitor?

A My recollection is they're closer now than they were back in that period of time when I said there's a tremendous amount of drift. It's still higher, but if you look at the data you provided earlier, they're more in the same ballpark, where the BAM is showing 9.5 in 2013 and the reference method monitors are showing -- let me find them again here -- Beltsville, 7.8 versus 8.2. So it's still high but not as high as it was before.

Q Okay. But they've never changed the data that was there before?

MR. GROSSMAN: Let me ask you this, Ms. Cordry: I mean --

MS. CORDRY: Okay.

MR. GROSSMAN: -- I guess the angle you're headed to is that somehow the BAM readings, if that's what it is, should be considered in or at least averaged together with the other two readings --

MS. CORDRY: Right.

MR. GROSSMAN: -- to get, to get, to plug into the model. Is that what you're suggesting?

MS. CORDRY: I'm getting there, because the next question was going to be --

MR. GROSSMAN: Well, I'm getting there before you. So --

MS. CORDRY: Okay. Okay.

MR. GROSSMAN: -- answer my question.

MS. CORDRY: Okay. Yes, I -- well, actually, no. My point is that the protocol had been that we were going to use the highest single monitor there and that that, again, part of the point is that -- I mean, I think it agrees, in a sense. If the conservatism keeps changing, his model gets less and less and less conservative all the way --

MR. GROSSMAN: I understand. I've --

MS. CORDRY: Okay.

MR. GROSSMAN: -- seen that happen, but --

MS. CORDRY: All right.

MR. GROSSMAN: -- and you can attribute whatever

motives you want to that -- but I've watched that occur as we've gone along --
MS. CORDRY: Okay.
MR. GROSSMAN: -- and I'm not all that concerned about the protocol issue because he's not required to follow the protocol that was, you know, was originally discussed and he can change as he wants and then I can evaluate whether that change makes sense. So --
MS. CORDRY: Okay.
MR. GROSSMAN: -- that's not my -- I'm trying to find out --
MS. CORDRY: Okay.
MR. GROSSMAN: -- from you, is it your contention that the BAM monitor, if that's what it is, should have been averaged in or should be averaged in with the other two reference monitors to get the appropriate modeling?
MS. CORDRY: At the very least, it needs to be averaged in. I don't concede that we should use the average, and my next question to him was going to be, how was he doing these averages that he is starting to use.
MR. GROSSMAN: All right. You say at the very least. So you would have the highest -- well, you would have the BAM measurement used in lieu of the reference monitors; is that what you're suggesting?
MS. CORDRY: Well, I would note that, again, going

back to the chart, that this number is not necessarily, when you look at other models that were using this 24-hour block method, it's not necessarily particularly out of line with those; that, again, this goes back to this question of should you be looking at anything else.
If you look at the chart, for instance, for 2012, those three monitors were 11.6, First Street Northeast in D.C., 10.3 in Rockville, and 11.3 in Beltsville -- so that monitor is right in line with those other three monitors -- that for 2013, the 2500 First Street monitor is still at 11.6. So it's not at all clear to me that this is necessarily completely out of line, but if we talk about using the highest monitor -- and we will come back to the EPA rule in just a moment, you know, what you should be doing this --
MR. GROSSMAN: Excuse me, but you complained about the witness not answering your question directly.
MS. CORDRY: Okay.
MR. GROSSMAN: I asked you whether or not it's your contention that the modeling should use only the BAM figure, if that's what it is, and you've now gone on to a --
MS. CORDRY: Okay. All right.
MR. GROSSMAN: -- whole justification. I'm asking you if that's your -- is that your contention?
MS. CORDRY: I think our contention is that yes,

it is a reasonable approach to continue using the same monitor you used before and that that monitor is not necessarily out of line when looking at the other data, yes.
MR. GROSSMAN: All right. So you believe that the highest reading should be used as opposed to an average or excluding that BAM monitor because it disagrees with the reference monitors?
MS. CORDRY: I think that that is a reasonable approach and that certainly that's one approach we should use, and part of this is also going back to -- that is something that I said in the background memo, which Mr. Sullivan said he disagreed with. So part of this was to just kind of clarify that in fact what I was laying out in the background memo was a series of alternative approaches and what the effect would be if you used those alternative approaches.
MR. GROSSMAN: Mr. Sullivan testified that the gold standard, EPA's gold standard is the reference monitors. Do you or your witnesses disagree with that?
MS. CORDRY: I think that's probably, that is the reference model. I think the point of labeling something as a federal equivalent monitor is also intending to show that it has been certified to also read appropriately.
MR. GROSSMAN: Well, is Dr. Cole going to testify that if you have a reading from a BAM monitor that's

considerably different from the reference monitors, that you should nevertheless take that reading in lieu of the reference monitors in view of what appears to be conceded, that that's the EPA -- the reference monitors are the EPA gold standard?
MS. CORDRY: Well, I'm going to have to wait and find out exactly what he wants to testify, but --
MR. GROSSMAN: All right. Well, you might have him address that point because I am a little concerned. I mean, you pressed the witness significantly on this point and I understand your point, but his testimony is that there appears perhaps to be a problem with that BAM monitor but, in any event, the EPA standard is the reference monitors and there are two of them there and in modeling you would eliminate the outlier, which in this case is that BAM monitor. So I'd like to know from Dr. Cole, when he testifies, if he disagrees with that as a matter of following EPA guidelines.
MS. CORDRY: Okay. Well, in the first --
MR. GROSSMAN: I'm not as concerned --
MS. CORDRY: Okay.
MR. GROSSMAN: -- with what you think about it.
MS. CORDRY: Right. Well, I'm actually going to ask him a question, based on my discussions with Mr. Krask yesterday, about how you do this. Part of the reason why I

asked him the question about the state monitors, reviews the data, has not thrown the data out, so that -- and that it's been labeled as a federal equivalent monitor -- so I don't think we necessarily assume that there's something wrong with this other than the fact that it's reading high. That does not necessarily mean it's wrong, and I'm going to ask him a question in just a minute as to some other reasons about --

MR. GROSSMAN: Well, when you put on Dr. Cole, you can ask him that. I mean, I don't know how much time you need to waste on --

MS. CORDRY: Okay.

MR. GROSSMAN: -- going over the same territory with Mr. Sullivan. He's already made his position on this very clear --

MS. CORDRY: Okay.

MR. GROSSMAN: -- and I think I've restated it correctly. Have I not, Mr. Sullivan?

THE WITNESS: You have.

MR. GROSSMAN: Okay.

MS. CORDRY: Okay.

BY MS. CORDRY:

Q When you did the averaging that you did in the charts in January where you were showing that trend line, how did you do the average? What did you --

A My --

Q -- what exactly did you average?

A My recollection is we averaged Sites 1 and 2 --

Q Okay. So --

A -- which are the two reference method sites.

Q You don't think at that point you had any input from the, from the other site at all?

MR. GROSSMAN: What's the other site? The BAM monitor?

BY MS. CORDRY:

Q I mean, the other monitor, the BAM monitor.

A No. As I testified, I mean, these three -- I haven't seen this site, but the way they were almost always set up, the three monitors are side by side. They're in the same spot. We're not comparing it to Washington, D.C., or any place else. They're right there next to each other. We have two that agree and one that's nowhere near agreeing. The standard practice is to use the ones that are reference methods that agree.

Q And on those sites we, again, we agree that looking at -- and I don't have all the observations for all of them, but I think the numbers on the other ones are relatively similar -- looking at 2013, one of those, as we agreed, read every third day and the other one read only 32 times in the course of a year, correct?

A Yeah, and just to clarify, I confirm that 2012 was similar. It appears that that monitor, one of which is a duplicate, which would be Site No. 2 in Beltsville, they're not running that every six or 12 days. They're running it less frequently.

Q Okay.

A Correct.

Q Okay. And the one page that I printed out from that much bigger chart that you had -- this one like this, and I gave you the one page that was just the first part of that. I'm trying to find it. My only question there is, it does show that the monitor values differ quite substantially, often, from day to day, correct?

A I don't recall. I mean --

Q Well -- all right.

A -- is it somewhere? Where do I find that document?

Q Okay. Well, that, just look at the front page of that and just --

MR. GOECKE: And this is 564(e)?

MS. CORDRY: Yes, for Beltsville.

BY MS. CORDRY:

Q Look at the sheet for Beltsville.

MR. GOECKE: Which page are we on? 564(e)?

MS. CORDRY: Yes. Actually, what we want is, what

we want is the page for Beltsville in regard --

THE WITNESS: Well, my experience in monitoring, especially after an annual average, is certainly there's some uncertainty in each measurement and you'll get variation day by day between two duplicates. That's not unusual, but over the course of a year, you know, they're going to give you fairly similar results, which they did.

BY MS. CORDRY:

Q Okay. So my question to you again was that the numbers do, yes, they do vary quite a bit from day to day; it may be very high one day and then drop off quite a bit the next day?

A I haven't analyzed this, I mean, Ms. Cordry. I haven't had a chance to really review this in detail, but what I'm saying, in principle, that -- that certainly is what usually happens: you'll get variability from day to day for various reasons.

Q So that if you have a monitor that reads every third day, it's not taking readings two out of these three days, obviously; you're only get a third of the readings for the whole year, correct?

A That's correct.

Q Okay. And just as a matter of general statistics and general practice, if you have a set of values that can vary quite widely and one of your readings takes every day

and one takes a third of the day, there's possibility for the two reason readings not to match up, correct?
A Well, sure, on a day-by-day basis, they may not match up.
Q Well, no, I'm talking about overall, on the average.
A Well, then it depends. It depends how big your sample size is. If you had 30, 40, 50 samples over the course of a year, that's probably pretty representative of the year; if you had 10 samples, probably not.
Q On something like this where it varies over a wide range of values, it can never get lower than zero but the top number can go quite high, correct?
A It can't go lower than zero. The top number can go whatever it's going to go to.
Q So if you're averaging something and you were missing some values, there may be an equal chance of missing a low value or a high value but the high value can be much higher than the average than the low value can be --
MR. GROSSMAN: Really, Ms. Cordry, I think I know where you're going with this --
MS. CORDRY: Yes.
MR. GROSSMAN: -- but really, you're asking -- you're really not going to ask me to enter an opinion based on a speculation about whether or not statistically these

monitors, the reference monitors, are representative, are you? I mean --
MS. CORDRY: Well, what I am going to --
MR. GROSSMAN: -- is that, is that where you're going with this?
MS. CORDRY: Well, what I am going to say is that one, at least one explanation of part of the difference here is that one is reading every day and one is not. So one is getting two-thirds of the values --
MR. GROSSMAN: And you're saying that --
MS. CORDRY: -- or missing two-thirds of the values and the other one isn't.
MR. GROSSMAN: -- that the BAM is reading every day --
MS. CORDRY: Yes.
MR. GROSSMAN: -- but the representative one is -- but the reference one, or one of the reference ones at least --
MS. CORDRY: Is reading, at most, every third day, and the other one is reading, as we said, every 10th day or 11th day or 12th day or so. So that it's clearly, you're missing a lot of values for the reference monitors.
MR. GROSSMAN: But let's say, let's say you're right in that there's some potential issue with that statistically, there could be some more aberration. If the

EPA says that the reference monitors are the gold standard to be used, how could I not follow that?
MS. CORDRY: Well, we don't actually have anything from the EPA at this point saying that. So --
MR. GROSSMAN: No, I know, but I'm saying, you're going to ask Dr. Cole that and, if he confirms that, how could I not follow that? How could I just assume I'm using the BAM reference point as opposed to the gold standard if this expert witness says that's what the EPA says?
BY MS. CORDRY:
Q Well, then if Mr. -- let me ask it this way: If Mr. Krask says that the way they get to their yearly number is that they take the number from the reference monitor -- that No. 1, that federal reference monitor -- for the days that it reads and they take the numbers from the BAM monitor for the days that it reads, where the federal reference monitor is not being used, and that's what they combine, would that surprise you?
A It would, because that would, to me, wouldn't make -- wouldn't be appropriate, especially in a situation here where two issues. One is the EPA does call it the gold standard, and I can put this into evidence if you want to see that, the reference about it is the gold standard; and, if you have a situation where we have 120 observations per year, 120 days per year to represent a year --

statistically, that's a very large data set -- that that would certainly trump the fact, if you average in the days, the extra days from the BAM, the BAM is going to provide bias, and so to me, that, I would, I would not, I would not do that.
Q Well, assuming --
MR. GROSSMAN: Mr. Sullivan, what is the reference to the gold standard? What page are you reading from what?
THE WITNESS: I'm reading from EPA's web page, and --
MS. CORDRY: Which we haven't been furnished with either. Okay.
THE WITNESS: Well, it's, you brought up the point. So --
MR. GROSSMAN: Well, it came up in his testimony. So --
MS. CORDRY: Okay.
THE WITNESS: You can do a search for EPA reference method gold standard. It takes you to web page wwwepa.gov/heasd/research/frm_fem.html, and EPA states that National Ambient Air Quality Standards, FRMs are the gold standard of air pollution monitoring systems and ensure air quality data collected at different sites are accurate and can be used for purposes of intercomparison.
BY MS. CORDRY:

Q Okay. And what does that say about FEM monitors?
A Well, they're not the gold standard; so it would say they weren't as reliable or accurate.
Q Does it say that?
A I read what -- I read what it said.
Q Okay. So we'll find out later what EPA says about FEMs, but in any case, regardless of whether you think that's the way to do it or not, if Mr. Krask says that that is in fact what they do, then they are counting that BAM monitor, are they not?
MR. GOECKE: Objection. Speculative.
MS. CORDRY: Well, it's not speculative. I'm asking him that question.
MR. GROSSMAN: No, I understand. He has said he doesn't think it's an appropriate method, and you have said this is -- if they are doing it, they are doing it. I mean, isn't that tautological? You're saying --
MS. CORDRY: Well --
MR. GROSSMAN: -- you're saying, this is what Mr. Krask told you; so --
MS. CORDRY: Yes.
MR. GROSSMAN: -- isn't that what they're doing?
MS. CORDRY: Right.
MR. GROSSMAN: It's tautological, isn't it? It's --

MS. CORDRY: Well --
MR. GROSSMAN: -- the same thing. If you're saying that's what he said and if he's accurately saying it and if it's admissible, then that's what they're doing. Why ask him?
MS. CORDRY: Okay. Well, then --
BY MS. CORDRY:
Q So whether or not -- okay, then I'll just put it that way -- whether or not Mr. Krask agrees with you, that may be what they're doing?
A I'll talk to Mr. Krask and confirm.
Q Okay.
A I don't know what -- I haven't asked him that question.
Q And so when you then got to -- okay. Let me just ask it a different way. So when you averaged these -- hold on. Monitor 1 has 120 readings, roughly; Monitor 2 had roughly 50 readings; and Monitor 3 has 350. When you averaged the monitors for the report you did in January, where you were showing that trend, did you average each -- did you do an average for each monitor separately and then average the two of them together or did you just add all the numbers together and take a total average?
A Well, I mean, and our position was they each had enough samples to be reasonably reliable of an annual

period. We averaged the two, and we can, I know we -- I mean, frankly, you're going to say why didn't we just use the one that had more samples. The answer is, either way you did it, you'd arrive probably within a 10th of a microgram of the same answer, and frankly -- we spent a lot of time talking about particulates in this project; gas stations emit a minuscule amount of particulates -- it's sort of academic, in my judgment.
Generally, for roadway studies in the past, we haven't even monitored particulates, and look at the gas station impacts, such as your rebuttal report. I mean, the annual average gas station contribution right in the middle of the gas queue is less than a microgram. So whatever differences there are in background and the rest relative to the standard, in my, in my opinion, is academic.
Q Well, before you were coming up with the maximum contribution being in the point zero zero, I don't remember how many zeroes you had in there, kind of range. So .92 is actually dramatically higher than the numbers you've used before for the effect of the gas station, isn't it?
A Well, for good reason. The .92 is in the middle of a gas queue. How many people live in the middle of a gas queue compared to what is the number at the closest residence? The .005 was at the homes, and as I showed in the rebuttal report, I scaled up the particulate emissions

by a factor of 10 per MOVES versus MOBILE6 and the concentration at the homes certainly went up but they're way under 10; so -- or I'm sorry, they're much lower than -- they're under .1 microgram. So that didn't -- that changed very marginally, but the point remains, where people can get exposed on an annual basis these concentrations are minuscule, and discussing background treatments and how much difference it would make how we average it, in my opinion, is not, you know, it's not going to make much difference. It's going to be low either way.
Q Well, I understand what you're saying. If you had stayed with the three-year average, for instance, of that monitor that you were using before, you would have a number that could very easily, with an .92 micrograms per meter cubed, go over the 12, couldn't you?
A I haven't run the math, and I'd be very surprised if that was the case. And, secondly, I've already stated in the record that that would be inappropriate to average three monitors, one of which had markedly different results and it wasn't a reference method.
Q So when you --
MR. GROSSMAN: No. Let's, let's move on to something else.
MS. CORDRY: Okay. Okay. Well, I just --
MR. GROSSMAN: You've beaten this into the ground,

Ms. Cordry.
MS. CORDRY: Can I ask exactly one question?
MR. GROSSMAN: Exactly one.
MS. CORDRY: Okay.
BY MS. CORDRY:
Q When you averaged the three monitors together, which you did in your rebuttal report, can you tell me how you did the averaging? Again, did you average each one separately and average that average, or did you add all the values together and do one average of all of it?
MR. GOECKE: That was two questions.
MS. CORDRY: No. That's an either/or question. I have --
MR. GROSSMAN: I'll give her that flexibility.
THE WITNESS: We assumed that each location had a sufficient number of monitoring data points to reasonably represent the annual average, and we averaged those three.
BY MS. CORDRY:
Q Okay. Some --
MR. GROSSMAN: No, no, no.
THE WITNESS: That was your one question.
MR. GROSSMAN: That was the one question.
MS. CORDRY: I just want to make sure I understand this. Please?
MR. GROSSMAN: Why is it necessary?

MS. CORDRY: Because there is --
MR. GROSSMAN: Why is it --
MS. CORDRY: -- a very big difference between averaging -- averaging averages versus putting all the observations together, and I just want to be sure I understand that.
BY MS. CORDRY:
Q You averaged the averages, right?
MR. GROSSMAN: Do you really think it's going to make a difference, that, that kind of a difference in the result?
MS. CORDRY: I think it'll make a huge difference. When one has three times as many as the other one combined --
MR. GROSSMAN: All right.
MS. CORDRY: -- it makes a huge difference in what an average could be.
MR. GROSSMAN: Go ahead. Ask your clarification question --
BY MS. CORDRY:
Q Again, just --
MR. GROSSMAN: -- I don't want to frustrate you too much.
BY MS. CORDRY:
Q -- assume, yes -- and I don't have the numbers

right here -- but let's assume one was like eight and a half and eight and a half and the other was --
A Eleven.
Q Eleven, okay. You averaged eight and a half and eight and a half and 11, correct?
A That's my recollection.
Q Okay. As opposed to 500, you know, different values and getting a single average of all of those?
A What does 500 mean?
Q Well, 365 values from one monitor and 120 from another and 50 from the other. You didn't add up all 500 numbers and then take an average?
A That'd be statistically incorrect.
Q Well, there's many questions about what's statistically incorrect, but --
A But I -- again, my point is, this is all, this is all moot. We're talking about tiny, tiny numbers, to start with, from the gas station. It really is, and it's way under the standard, and my contention is, it's inappropriate what you're asking me. But if you -- you show 2011, 2013; we can look at what the average is. Putting aside the fact that that BAM is way out there, I doubt it's going to affect anything.
So, I mean, I'll answer any question you have, but it doesn't seem to be productive to me to talk about

something that's so small. And we're talking about the middle of a gas queue. EPA doesn't put annual average receptors in the middle of a gas queue or in the middle of a road to figure out if a project is okay or not. That's not their policy. We did it as just a point of perspective of what --
MR. GROSSMAN: All right. All right, but you don't have to go on either. That's --
BY MS. CORDRY:
Q All right. In terms of the -- you would agree, would you not, now that under the current PM2.5 standard, the question of whether the region is in compliance, you can't average all of the different monitors together anymore, is that correct?
A EPA does not go for spatial averaging.
Q Okay. And, in fact, do they say that the, that you should use the monitoring site that represents area-wide air quality recording the highest PM2.5 concentrations?
A What are you, what are you reading from?
Q From the EPA rule.
A I don't have it in front of me. I can tell you that the standard practice for modeling is to use representative values for the location at hand. That's what we've done.
MR. GROSSMAN: How much longer?

MS. CORDRY: About five minutes, maybe --
MR. GROSSMAN: Okay.
MS. CORDRY: -- max.
MR. GROSSMAN: Because Mr. Silverman is getting to look very hungry.
MR. SILVERMAN: Very hungry.
MS. CORDRY: Oh, sorry.
MS. ADELMAN: He's going to have a sign soon that says lunch.
UNIDENTIFIED SPEAKER: Right.
MR. SILVERMAN: A flash.
MS. CORDRY: Actually, I may be just about done. Let me just double-check something here.
MR. GROSSMAN: I don't think the warning penetrated in time. Are you okay -- are you okay, Dr. --
UNIDENTIFIED SPEAKER: Is the computer okay?
MS. CORDRY: Yes, I think the computer seems to be okay as well. All right. I think that will do, and we'll take up anything else in our own testimony. Thank you.
MR. GROSSMAN: All right. I thank you very much, but I think that there's additional cross-examination from Ms. Rosenfeld --
MS. CORDRY: Yes. Yes. I'm sorry, yes.
MR. GROSSMAN: -- and a little bit, five minutes from Mr. Silverman.

MR. SILVERMAN: I'll talk fast.
MR. GROSSMAN: So we will see you -- we'll break for lunch until --
(Whereupon, at 1:29 p.m., a luncheon recess was taken.)
MR. GROSSMAN: And we're back on the record. Ms. Rosenfeld.
MS. ROSENFELD: Good afternoon, Mr. Grossman.
MR. GROSSMAN: How are you?
MS. ROSENFELD: Fine, thank you. How are you?
MR. GROSSMAN: I'm doing well, thank you. You may proceed.
MS. ROSENFELD: Okay. Thank you.
BY MS. ROSENFELD:
Q Hello, Mr. Sullivan.
A Good afternoon.
Q Before we get into specific details about the new methodology that you used in your rebuttal report, I'd like to talk to you just generally about -- an overview about how you developed it for use. This is the first time in this case that you've relied on the ozone limiting method, is that correct?
A Yes.
Q And it's also the first time in this case that you've used the matched backgrounds methodology, is that

correct?
A That's correct.
Q And in his testimony Dr. Cole did explain somewhat about the three tiers of analysis for NO2 emissions that the EPA has established, is that correct?
A I believe he did.
Q And a Tier 1 is a model that assumes that all NOx is converted to NO2, is that correct?
A Yes.
Q And did you show a Tier 1 analysis in your rebuttal report?
A I did not. Well, let me rephrase that. Stage II and Stage III clearly were not, were not. So in that context, no, we did not. Stage -- I did show Stage I in my report, which was drawing from the August report, which, you know, did assume 100 percent NOx was NO2.
Q So the results in Figure 1 on page 11 reflect --
MR. GROSSMAN: No, let's make sure we know which one you're referencing. You're referencing the rebuttal report now?
MS. ROSENFELD: Yes, I am.
MR. GROSSMAN: And page which?
MS. ROSENFELD: I have the redlined version. On mine it's page 11. It's Figure 1, Stage I.
MR. GROSSMAN: Ah. Well, you have the redlined

version. I have the actual exhibit, 466. So let's --
MS. ROSENFELD: Okay. I don't have a copy of the signed report.
MR. GROSSMAN: Mr. Goecke will supply you with a copy.
MS. ROSENFELD: Okay.
MR. GOECKE: I'm going to try. I gave those out before, I think.
MS. ROSENFELD: I didn't get one. Dr. Cole has one.
MR. GROSSMAN: Okay.
MS. ROSENFELD: I'll share his.
BY MS. ROSENFELD:
Q On mine it is page 11. Is it page 11 on yours, Mr. Sullivan?
A It is.
Q Okay. And would that reflect a Tier 1 analysis, 100 percent conversion?
A It's 100 percent -- 100 percent of the NOx is assumed to be NO2.
Q Okay. And Is the EPA required to approve a Tier 1 analysis? Does it require approval?
A Well, not in this case, it does not.
Q Okay. And does a Tier 2 analysis assume that 80 percent of the NOx is converted to NO2?

A It does.
Q And do you require, or is the EPA required to approve a Tier 2 analysis or is it a preferred model?
A In what context?
Q In the context, for example, of your modeling in this case.
A EPA doesn't have to approve anything in this case.
Q And the EPA regulations allow for a Tier 3 analysis as well, is that correct?
A The guidelines have three tiers, and they do allow for a Tier 3 analysis.
Q And when you talk about the guidelines, are you referencing what's known as Appendix W, which is Exhibit 285?
A That's, that's one guideline. They have other guidelines, for example, specific to NO2, but their, EPA's guidelines, in general, do allow for multitier analysis, and generally, three tiers is common.
Q Okay. And a Tier 3 analysis is reviewed and approved by the EPA on a case-by-case basis, isn't that correct?
A It depends.
Q And it depends on what?
A Depends, is it a PSD, Prevention of Significant Deterioration permit, a permit to instruct? In this case,

it's the -- it's not a permit. In this case, we're doing modeling for, for the special exception process. EPA has no requirement for any review for that type of analysis.
Q And it has been your position, though, that you have followed EPA guidance with respect to the modeling approaches that you've taken in this case, is that correct?
A We followed their guidance, but that doesn't include submitting the data, the reports, and the protocols to EPA for review because they're not involved in the process.
Q And if you were in an EPA regulatory process, the Tier 3 approach that you used would require EPA review and approval, is that correct?
A If we were, but of course, we aren't.
Q I understand that. I'm trying to clarify. If you were, you would need EPA --
A If we were, the entire process would go before the state. EPA would then review in the end what was done by the state, in this case, the Maryland Department of the Environment. They would have primacy.
Q Would they be considered the regional office --
A No.
Q -- Maryland? Okay.
A No. Maryland would be considered the designated state that's overseeing the Clean Air Act issues for the

State of Maryland.
Q As I recall, when I was asking you questions the last time I was here, I asked you, for the ozone limiting method, whether or not it qualified as a preferred method under EPA guidelines, and you told me, if I understood you correctly, that it did qualify as a preferred method. Is that your testimony?
A I think what I said was the EPA has what's called regulatory options. Neither, neither ozone limiting method nor the PVMRM, the alternative method, are considered regulatory defaults. EPA defines standardized, here's what you do. It's not in there on that basis, but they clearly are options that EPA allows to be considered on a case-by-case basis.
Q So in Exhibit 391(a), which is an EPA guidance memo dated June 29th, 2010 -- actually, the attachment is June 28th, 2010 -- from Tyler Fox, it characterizes the OLM and the PVRM method, which you just mentioned, are both available as non-regulatory default options within the EPA-preferred AERMOD dispersion method. Is that, is that correct?
A And which page are you on in that document?
Q I'm on page 16.
A You said June?
Q This would be the 2010, June 28th, 2010, memo.

A What's the title of that document?
Q Applicability of Appendix W Modeling Guidance for the One-Hour NO2 National Ambient Air Quality Standard from Tyler Fox.
A Mr. Fox issued an updated version of that dated March 1st, 2011, that further clarified Appendix W Modeling Guidance to the One-Hour NO2. I don't -- I have that in front of me. I don't have the earlier version you're referring to.
Q Okay. Hang on one second. I have an extra copy.
MR. GOECKE: Thank you.
MS. ROSENFELD: This is already in the record.
MR. GROSSMAN: Okay. And this is exhibit what again? 391(a).
MS. ROSENFELD: 391, and it's marked on --
MR. GROSSMAN: I see it.
MS. ROSENFELD: -- on the other pages.
THE WITNESS: Which page were you referring to, Ms. Rosenfeld?
BY MS. ROSENFELD:
Q I'm looking at page 16.
A Okay.
Q And in the second full paragraph, I'm reading from the first sentence: The OLM and PVRM methods are both available as non-regulatory default options --

A Correct.
Q -- within the EPA-preferred AERMOD dispersion method, correct?
A That's what it says.
MR. GROSSMAN: It says, dispersion model.
MS. ROSENFELD: Dispersion model, you're correct.
BY MS. ROSENFELD:
Q Are you -- first of all, there are references throughout Appendix W and, I believe, both of the EPA memos, Exhibit 391 and 485, that talk about the PVRM method. Do you agree that that has nothing to do with the case that we're, we're involved with? You didn't use any PVRM analysis, did you?
A We tested it. We --
Q Okay.
A -- gave essentially for this application the same values, very similar to OLM.
Q Okay. And is that testing reflected in your rebuttal report?
A No. We -- no, it is not. We just did some testing before we ran either one of them and concluded that OLM -- neither one would give comparable results. We used OLM.
Q Okay. And so when I, when I ask you about the EPA regulations and guidance as it reflects -- as it relates to

OLM, we can disregard the PVRM reference as well?
A I mean, we can. I'm saying that's -- if we use OLM or PVMRM, it would lead to the same answer. This is a ground-level source. They tend to produce similar results for that type of application.
Q Okay. The ozone limiting method itself is not a preferred method, is it?
A It's not a guideline -- it's not a regulatory default guideline method. It's certainly an allowable method that can be used. When you say preferred, what's the context for preferred?
Q Well, in the next sentence on page 16 of Exhibit 391, the EPA memo says: As a result of their non-regulatory default status, pursuant to Sections 3.1.2c, 3.2.2a, and A.1a(2) of Appendix W, application of AERMOD with the OLM or PVRM option is no longer considered a, quote, preferred model, end quote, and therefore requires justification and approval by the regional office on a case-by-case basis, correct?
A That would be -- that's what it says, and that would be applicable if you were doing a modeling analysis for a permit under the Clean Air Act. You would be required to have that approach most likely included in a protocol and approved and then reviewed after you finish your analysis, before the permit was granted.

Q Further along in that same paragraph, it says that as long as the PVRM and OLM options are considered to be non-regulatory default options, their use as an alternative modeling -- their use as alternative modeling techniques under Appendix W should be justified in accordance with Section 3.2.2, paragraph (e), as follows, is that correct?
A That sounds correct.
Q Do you have a copy of Exhibit 391? I'm looking at page 16.
A I'm on page 16 --
Q Okay.
A -- of Exhibit 391.
Q That's the last sentence before we get to subparagraph (c).
A Yes, I see that.
Q And do you have a copy of Exhibit 285, which is Appendix W?
A I do not.
Q All right.
MR. GROSSMAN: You handed out a fair portion of it the last time. If you're going to use that same portion, then I have, I have what you handed out from the last time.
MS. ROSENFELD: I believe I actually handed out the entire --
MR. GROSSMAN: Oh, okay.

MS. ROSENFELD: -- Appendix W.
MR. GROSSMAN: That may be. Let's see. It might be the whole one. It's a significant size, in any event.
MS. ROSENFELD: Well, I thought I had an extra copy.
MR. GROSSMAN: The witness can look at my copy --
MS. ROSENFELD: Do you have extra copies?
MR. GROSSMAN: -- if you want, or we can get it from the file, but that takes more digging.
MS. ROSENFELD: You don't have an extra copy, do you? Appendix W.
MS. HARRIS: I don't. Do you?
MR. GOECKE: No.
MS. ROSENFELD: Okay. That's okay. This won't be long.
BY MS. ROSENFELD:
Q When you take a look at Exhibit 391(a) on page 16, there are, there's a subparagraph (c) that says that alternative modeling techniques should be justified in accordance with Section 3.2.2, paragraph (c), as follows. If you would take a look at what --
MR. GROSSMAN: I think it says, paragraph (e), as follows.
THE WITNESS: It is (e).
MS. ROSENFELD: It is (e). It just didn't copy

very clearly here.
BY MS. ROSENFELD:
Q If you would just take a look and let me know if the standards in --
A I have the same -- is this in the same thing, 391(a)? Yeah --
Q Yes.
A -- I have a copy here.
Q If you could take a look and tell me if they're the same as the standards that were included in Appendix W.
A Well, Appendix W is a huge document. Which portion is it you're referring to?
Q Section 3.2.2e and the subsections below.
A Well --
Q Do they correspond with the standards that are set out in Exhibit 391(a)?
A They appear to be comparable.
Q So it wouldn't appear that the standards have changed between those two documents?
A It doesn't appear that way, but I did point out earlier that this version, 391(a), is, certainly has a newer version of this document that's been issued by Mr. Fox. So some of the things on 391(a) could be superseded.
Q And do you have that superseded document?
A I do, but it's in one of my references that I

provided in my rebuttal report.
Q Okay. And do you have any opinion as to whether or not that has been superseded by the newer, newer standards?
A I haven't compared them side by side, but my opinion, just to be clear, is that Appendix W and this statement here is very applicable to regulatory modeling and these steps would be met. We don't have a regulatory authority, an air program authority reviewing this. So we cannot, you know, get the, even though I tried --
Q And --
A -- to have Maryland Department of the Environment be involved in the process and be involved in the protocol. They aren't. So we can't, we can't do all these steps, but we tried to follow, to the best of our ability, the more recent version of the Fox memo and the guidelines to do this, this task.
Q But you have no reason to think that these criteria have been revised or updated in any way?
A I don't -- I'd have to do a comparison. Off the top of my head, I don't know if the version you showed me, where it differs from the March 11th, March 1st, 2011, version that Mr. Fox issued to the Regional Air Division directors.
Q Okay. Well, assuming for the moment that those

standards haven't changed, my -- I appreciate what you're saying, that you're not in a permit review posture before the EPA, but you have put forward the EPA guidance as the ruler that you're using to measure compliance with the NAAQS, is that correct?
A Well, to put it in its full context, what I have said, yes, we're following EPA's guidance, but part of EPA's guidance also says that the most accurate modeling methodology to the case at hand should be applied. That's the overarching direction in EPA's --
MR. SILVERMAN: I didn't hear that.
THE WITNESS: That's the overarching guidance on air quality modeling from EPA, and so when you say following EPA procedures and guidance, yes, we are, with the understanding that for this site-specific matter here, we're using judgment to apply them in an accurate and appropriate way.
BY MS. ROSENFELD:
Q Well, you've made that very clear, and we'll go through your report in more detail, but my underlying question for you was, it has been your position that in this case the Hearing Examiner and ultimately the Board of Appeals needs to look to the EPA guidance and the EPA standards to determine whether or not the NAAQS have been satisfied, is that correct?

A With the caveat I just said, that's correct.
Q And it's been your position that you have tried to follow and apply EPA guidance in your modeling, is that correct?
A I certainly have done my best to take EPA's guidance and apply it to this matter, which in many ways is very atypical, but I've done the best I could to follow methodology to, to address the application at hand.
Q Going back to Appendix W, and I'm now looking at subsection (e). I'm on page 68232 under Recommendations, and this applies to, determination of acceptability of a model is a regional office responsibility. And I understand your position that we're not in that process, but nonetheless, under the Tyler Fox memo, it says that non-regulatory default options should be justified in accordance with Section 3.2.2, paragraph (e), as follows.
So my questions for you start with the first of those subsections, little i, and the first factor requires that the model has received a scientific peer review. Has your rebuttal report received a scientific peer review?
A That's not the same question being raised. Point i says: The model has received a scientific peer review. AERMOD has received a scientific validation, scientific peer review --
Q Actually, I --

A -- we're using AERMOD in this option without any modification.
Q Actually, I think what it says is, an alternative refined model may be used provided that the model has received a scientific peer review, and your application of the OLM, the ozone limiting method, is an alternative refined method within AERMOD.
A It is not, and you're reading something different than I am. I'm looking at 391(a), little i, that says: The model has received a scientific peer review. Does Appendix W say something different?
Q Appendix W says: An alternative refined model may be used provided that the model has received a scientific peer review.
A That's -- we are using AERMOD, which has been fully validated, and we're using, again, OLM, without modification. We don't have to, we don't have to justify the use of that model for this application.
MR. GROSSMAN: Ms. Rosenfeld, are you suggesting that the word model there refers not to the AERMOD model but to the work he has done in applying the model? Is that the implication of your question?
MS. ROSENFELD: That is -- it's not the implication. I thought I had asked that question, because when you look at the preceding paragraph, the EPA

specifically says: As a result of their non-regulatory default status, pursuant to Sections -- and it goes through the three sections, including this 3.2.2a -- application of AERMOD, application of AERMOD with the OLM or PVRM option is no longer considered a preferred model and, therefore, requires justification and approval by the regional office on a case-by-case basis. And then it goes on to say as long as, and I'm paraphrasing here for a moment -- frankly, I'll just read it into the record:
While EPA is continuing to evaluate the PVRM and OLM options within AERMOD for use in compliance demonstrations for the one-hour NO2 standard, as long as they are considered to be non-regulatory default options, their use as alternative modeling techniques under Appendix W should be justified in accordance with Section 3.2.2, paragraph (e), as follows.
And I'm simply asking Mr. Sullivan whether or not he has conducted the analysis, whether his rebuttal report has been justified under these five points --
MR. GROSSMAN: I think I understand.
MS. ROSENFELD: -- under subsection (e).
MR. GROSSMAN: Yes. I just want to make sure that -- well, I guess there are three levels here. One is AERMOD itself --
MS. ROSENFELD: Right.

MR. GROSSMAN: -- and Mr. Sullivan is suggesting that AERMOD itself is the model they're referencing there. Am I correct, Mr. Sullivan?
THE WITNESS: That's correct.
MR. GROSSMAN: Okay.
MS. ROSENFELD: And we concur with that point. We --
MR. GROSSMAN: Okay.
MS. ROSENFELD: -- are not questioning AERMOD.
MR. GROSSMAN: Then there's the question of the application of the OLM method to AERMOD --
MS. ROSENFELD: Yes.
MR. GROSSMAN: -- and you're suggesting that that's an alternative model under the EPA guidance and that therefore that model in and of itself, that is, that alternative model, must be justified under these sections. Is that what you're suggesting?
MS. ROSENFELD: Oh, that's not what I'm --
MR. GROSSMAN: And then the third level is, is the work itself, that is, his application of this modified model to these, to the data, and are you suggesting that has to be reviewed? So I'm trying to find out which level of this you're suggesting.
MS. ROSENFELD: Your question is very well put. AERMOD, we agree, is the appropriate modeling package to

use. Then there's a threshold question, and that threshold question is set out in the Section 3.2.2, paragraph (e), which says that because OLM and PVRM are non-regulatory default options, they are no longer considered a preferred model and they require justification and approval by the regional office on a case-by-case basis. And then the last clause of the last sentence --
MR. GROSSMAN: By the way, if I remember correctly, that language you said about the preferred model, that didn't come from the EPA Appendix W; that comes from the Fox memo, is that correct?
MS. ROSENFELD: The Fox memo --
MR. GROSSMAN: Is there something in the EPA Appendix W that uses the term preferred, or is that -- or that language you just read me, that came from the --
MS. ROSENFELD: The designation of the OLM and the PVRM as non-preferred models comes from the EPA guidance memo in Exhibit 391(a).
MR. GROSSMAN: 391, and that comes -- that's not in Appendix W; that's, that's the memo from Tyler Fox?
MS. ROSENFELD: That's the memo from Tyler Fox.
MR. GROSSMAN: Okay. I just wanted to make sure we're not talking about different things. Okay.
MS. ROSENFELD: And then in that memo from Tyler Fox, it says that as long as the OLM or PVRM options are not

considered preferred models, as long as they are considered to be non-regulatory default options --
MR. GROSSMAN: Right.
MS. ROSENFELD: -- their use as alternative modeling techniques under Appendix W should be justified in accordance with Section 3.2.2, paragraph (e). That 3.2.2, paragraph (e), is on page 68232 of Appendix W, which is Exhibit 285. So the threshold question is, has use of OLM been justified in accordance with the standards in Appendix W?
MR. GROSSMAN: All right. I understand your question. I just wanted to make sure I knew whether you were applying that to AERMOD itself, whether you considered then AERMOD as being a modified --
MS. ROSENFELD: Yes.
MR. GROSSMAN: -- model, which I think is what you're saying, that that's what you're saying, that --
MS. ROSENFELD: Right.
MR. GROSSMAN: -- because the term model is used here, and so you're saying, in effect, that AERMOD is now modified by the OLM method, and I think Mr. Sullivan is saying he disagrees with that, but we can hear him out. And then the third thing is you're not saying that the actual data application to this modified model has to be reviewed; it's just that the model itself, as modified, has to be

reviewed, in your interpretation.
MS. ROSENFELD: Well, yes, I'm not quite there yet. I think the threshold question is whether or not use of the OLM within the AERMOD model is justified under this section. I think part of that analysis includes whether or not EPA guidance was followed in more specific detail as the model was developed, but the very first threshold question is, has it been justified under these, under this five-prong review criteria?
MR. GROSSMAN: Right. Yes, I understand that's your question, but I'll let you continue to question the witness on the stand.
MS. ROSENFELD: Okay.
MR. GROSSMAN: By the way, you said that that, the Fox memorandum had been superseded --
MR. SILVERMAN: Been supplemented, sir.
MR. GROSSMAN: -- what's the, what's the date of the superseded, the superseding memo?
THE WITNESS: It's --
MR. SILVERMAN: I want to object, Mr. Grossman, to the word superseded.
MR. GROSSMAN: Well, he, I think he used that term.
MR. SILVERMAN: It's a term of art.
THE WITNESS: It's March 1st, 2011. The title is

Additional Clarification Regarding Application of Appendix W Modeling Guidance for the One-Hour NO2 National Ambient Air Quality Standard.
MR. GROSSMAN: Okay. So we won't, we won't -- we'll call it clarification, not superseded.
MR. SILVERMAN: Thank you. Thank you.
MS. ROSENFELD: Right. And, Mr. Grossman, it is in the record already as Exhibit 407, and I have --
MR. GROSSMAN: Okay.
MS. ROSENFELD: -- an additional copy for you as well.
MR. GROSSMAN: Okay. Thank you.
BY MS. ROSENFELD:
Q Do you have one?
A Do I have which one?
Q The 2011.
A I have it.
Q Okay.
MR. GROSSMAN: All right.
BY MS. ROSENFELD:
Q So going back now to Appendix W, Section 3.2.2e under subsection (i), and just to sort of recap, this subsection (e) says: An alternative refined model may be used provided that the model has received a scientific peer review. Has your alternative refined model, reflected in

your rebuttal report, received a scientific peer review?
A To clarify -- no, of course it has not. We don't have a scientific peer review committee here, but the answer to your question is, I disagree with the premise. EPA is talking about a model. Models go through peer review. They go through validation and evaluation based on measured data and so forth. These points that you're showing here relate to that. There's no way an applied model is going to have scientific peer review. I could be getting a permit for Bethlehem Steel Company. There won't be a scientific peer review. They won't be comparing our modeling results to measured values at that application. That's for model validation of a model like AERMOD.
So what I'm saying is, what you're saying doesn't apply to what we did here, and again, the work we did here is not to get a permit. I'm trying to follow EPA guidance, but I can't do these steps. It's not applicable to this kind of an application.
MR. GROSSMAN: I understand.
BY MS. ROSENFELD:
Q And so if I look at page 68236 of Exhibit 285, which is Appendix W, there's a chart on the top of that page. It says, Tier 1, Assume Total Conversion of NO to NO2; Tier 2, it talks about the conversion factor of .75, which has been updated to .80, and we'll cover that later;

and then Tier 3, Detailed Analysis on Case-By-Case Basis.
So is it your position that you could never have a permit analysis under, under an alternative modeling technique unless that model had been scientifically peer reviewed and accepted in its entirety for application of any permit application?
A Correct. If you're using an alternative model --
Q Yes.
A -- one that's not an EPA-approved model in Appendix W -- Appendix A, I think it is, or Appendix W -- if you don't use one of those models that's been through peer-review process, you'd have to have the scientific peer review, validation, documentation, which is a big deal, but that's not what we're doing here. We're using an existing model with an existing option, and we're applying it to the matter at hand. So it's kind of apples and oranges that you're comparing here. Well, it is apples and oranges.
Q So you're not using Tier 1, you're not using Tier 2, and you're not using Tier 3. You're using something entirely different. Is that what I --
A I didn't say that.
Q Well, what did you say, because I've heard you say what it's not?
A We're doing site-specific, which would be consistent with Tier 3. What I said was that the

constraints that you're referring to on model validation and so forth and, frankly, to have a regulatory agency review the work is not an option here. Maryland does not, will not be involved in this review process. So that step cannot occur.
MR. GROSSMAN: Perhaps I can shorten some of this by saying, on the one hand, I want to hear about whether the OLM method has been scientifically accepted, because I think that's a part of what you objected to. So that to me is an issue that needs to be addressed here, but on the other hand, the question of whether or not all of these processes through EPA have been gone through is irrelevant here. It doesn't apply to this situation, and I can save you a lot of time perhaps by saying, I'm not going to throw out the use of the OLM method because he hasn't gone to the EPA to get it approved, because I don't think that's appropriate under these circumstances for all of the reasons the witness said. Now, that's different from saying that he can apply the OLM method if it's not scientifically acceptable.
So that's more the direct question that I would like to see addressed. I don't expect the EPA to be directly involved in the review of this special exception. It's not part of its governmental role.
MS. ROSENFELD: And I'm not --
MR. GROSSMAN: I do look to EPA guidance and

regulations to better understand the process, the thought process I would go through in analyzing this, but that's not the same as to say that he has to get everything reviewed by EPA.
MS. ROSENFELD: I'm not suggesting in any way that this should go to the EPA for review and approval, but I do suggest that Exhibit 391, in my view, is perfectly clear that using the OLM method within AERMOD is a non-regulatory default application and it's no longer considered a preferred model and, as long as the OLM method is considered a non-regulatory default option, its use as an alternative modeling technique under Appendix W should be justified in accordance with Section 3.2.2.
MR. GROSSMAN: Yes, but then you wanted to justify it by doing things that involve the EPA, as a practical matter, which is not --
MS. ROSENFELD: Well, no. A scientific peer review is not --
MR. GROSSMAN: Well --
MS. ROSENFELD: -- is not EPA.
BY MS. ROSENFELD:
Q Let me ask you this: You --
MR. GROSSMAN: I just, I have to tell you, I just don't think --
MS. ROSENFELD: Okay. Well --

MR. GROSSMAN: -- I understand your point, but I don't agree with it. I also looked to the actual Appendix W itself --
MS. ROSENFELD: Yes.
MR. GROSSMAN: -- where it says on page 68236 -- and they say my reports are too long -- (d) on that first column: For --
MS. ROSENFELD: Yes.
MR. GROSSMAN: -- Tier 3, third level, analysis, a detailed screening method may be selected on a case-by-case basis. For point source modeling, detailed screening techniques such as ozone limiting method may also be considered. Now, you've raised this -- to me, that's, that is saying that you can consider using the OLM method. The question is that you have raised is whether or not that's a scientifically acceptable method.
So let's hear evidence on that point, and I will ask Mr. Sullivan, if you don't, what is the scientific basis for using the OLM method and how is it approved, you know, in terms, has it been used by others, has it been accepted by the EPA. So those are the questions that really bear on your underlying evidentiary challenge --
MS. ROSENFELD: Well --
MR. GROSSMAN: -- to his rebuttal.
MS. ROSENFELD: -- I certainly will get to those

questions, but I think the threshold question that bears on whether or not this can be accepted in this case by the fact finder in this case is whether or not these threshold questions have been met. And for --

MR. GROSSMAN: I don't agree with you. I've heard you, and I don't agree with you.

MS. ROSENFELD: Well, I understand, but if I could, please, make my record.

MR. GROSSMAN: Yes.

MS. ROSENFELD: Okay.

BY MS. ROSENFELD:

Q The model has received a scientific peer review. You testified that you had discussed your OLM approach with Mr. Hlinka from your firm, is that correct?

A Well, but I just, I just want to clarify. There's one word you left out that's very important. What EPA actually says is -- there's no preferred model for the OLM method. In all these -- paragraph (e), then it says, an alternative, key word, refined model may be used --

Q Yes.

A -- if these conditions are met. Well --

Q Right.

A -- that's a different model. It's not a different application. It's a different model. And so all these conditions have nothing to do with what we've done here.

Q That's not what that says. EPA is continuing to evaluate the PVRM and OLM options within AERMOD -- nobody has challenged the use of AERMOD -- within AERMOD for use and compliance demonstrations for the one-hour NO2 standard. As long as they are considered to be non-regulatory default options, their use as alternative modeling techniques under Appendix W should be justified in accordance with Section 3.2.2, as follows. That's what --

A Well, the alternative -- an alternative refined model is a different model than AERMOD.

Q That's not how, that's not what EPA --

MR. GROSSMAN: I understand. You two disagree on --

MS. ROSENFELD: We disagree.

MR. GROSSMAN: -- what that means.

MS. ROSENFELD: Okay. We disagree.

MR. GROSSMAN: I understand. Now we've gone over that three times.

MS. ROSENFELD: Now, if I, okay, I'm not -- if I could ask my questions --

MR. GROSSMAN: Fair enough.

MS. ROSENFELD: -- based on my reading of this case, I would appreciate it.

MR. GROSSMAN: You may, but I'm just saying, you two disagree. Let's not go over that again.

MS. ROSENFELD: Okay.

BY MS. ROSENFELD:

Q Number one, the model has received a scientific peer review -- I understood you to testify that you did discuss your modeling approach with Mr. Hlinka, is that correct?

A I did.

Q Did you discuss it with Dr. Cole, who you initially discussed protocol issues with?

A I did not.

Q Okay. Did you discuss it with anybody else in the scientific community?

A I did not.

Q And did you discuss it with Mr. Krask from the EPA, the approach?

A No. Mr. Krask is a monitoring person. No, I did not.

Q Okay. So even in the non-regulatory setting, you made no attempt to provide a scientific peer review for your modeling approach, is that correct?

A Again, there's not an --

Q It's a simple question.

A -- opportunity or time or necessary to do a scientific peer review for this model application.

Q And no peer consultation outside of your own firm?

A I'm running, I'm running an EPA model using an available option that's described in this, in the memo that's more recent than the one you showed, the Fox, March 11, March 1st, 2011, and certainly it's an option mentioned in there for consideration, which we've used.

Q Well, I did ask you if the 2011 Fox memo modified any of these factors under 3.2.2e.

A I just scanned it right now. I don't see those constraints being put into this document.

Q Right. The second point, the model can be demonstrated to be applicable to the problem on a theoretical basis -- do you have anywhere in your rebuttal report where you show that the model can be demonstrated to be applicable to the problem on a theoretical basis?

A I certainly talked about the applicability of OLM. I provided probably 10 references, peer-reviewed references on the topic. So I'd say you can construe my report to addressing those issues, yes.

Q Okay. So your analysis on that point is contained in your references section, is that --

A In my -- and I think it's Appendix B of my rebuttal report.

Q Okay. And the data bases which are necessary to perform the analysis are available and adequate -- where is that outlined in your report?

A Well, I'm not sure which databases this is referring to, but the, if you want to call our emissions assessment a database; this is based upon EPA emission factors. The meteorological database is based upon a first-order meteorological station. These things are pretty standard inputs, databases, if you wish, to a model of this nature.

Q And when you say meteorological station, I don't think we've really talked about that in this case. What do you mean by that?

A The source of meteorological data, National Airport meteorological records, hour-by-hour data; these -- we have databases that are generated by authoritative bodies and reviewed.

Q The one that you used was National Airport?

A Correct.

Q Okay. Appropriate performance evaluations of the model have shown that the model is not biased toward underestimates.

A Again, model performance evaluation required measured data, which is usually done by tracer studies for model development. For this matter here, there would be no possible way, or any application that hasn't been built yet, to show for that specific site what the model performance would be. This is a model validation procedure.

Q And a protocol on methods and procedures to be followed has been established -- did you establish a protocol?

A We established a report to document what we did.

Q So the report is the protocol, is that --

A The report documents that we -- we don't have a protocol step with a reviewing agency involved. We don't. We have the report that describes the references and the foundation for what we've done and the results.

Q For purposes of this case, the Hearing Examiner and ultimately the Board of Appeals essentially have to stand in the shoes of the EPA's regional office and determine whether the alternative model that you have come up with is acceptable under these factors, is that correct?

A No.

Q Do they --

A You say -- I have not developed an alternative model, and so I don't agree with your premise.

Q Okay. They ultimately do have to determine whether or not the model that you've provided is acceptable?

A They have to determine if the modeling results that I've generated are acceptable.

Q And the modeling results depend on the methods that you use, is that correct?

A That is correct.

Q And the modeling results depend on the data that you enter, is that correct?

A They do.

Q And the modeling results depend on whether or not the OLM, the ozone limiting method itself, is applicable to this particular source of emissions, is that correct?

A Not completely, no.

Q Excuse me?

A That's not completely correct. We have modeled this location, this facility a number of different ways. For example, we showed, we showed Stage I in the rebuttal report based upon NOx modeling; it's very conservative modeling. We showed Stages II and III, NO2, one-hour, based upon the application of OLM. So we have done it several different ways.

Q On page 28 of your rebuttal report, you state that the OLM method was developed for stack sources, primarily power plant stacks. This station is not a power plant or otherwise have a stack, is that correct?

A Which version of the report? Are you looking at the redlined version or the --

Q I'm looking at your rebuttal report. Let me see.

MR. GROSSMAN: Page?

BY MS. ROSENFELD:

Q Appendix B-1. It's on page 27, the second full

paragraph: The OLM method was developed for stack sources, primarily power plant stacks.

A Correct.

Q This station is not a power plant and does not otherwise have a stack, is that correct?

A It does, it does have a, it does have a stack. Some sources do not have stacks, but we have a vent that's going to stack. We treated the loading dock truck emissions as a pseudo stack. So it has a stack and it has area sources.

Q The next sentence, you say: The application for a relatively large ground-based area source is not a, is not a standard application. Is that correct?

A That is correct.

Q What makes it not standard?

A Well, two, two issues: one, the methodology is primarily used for stack sources that have substantial time for the plume to mix with the ozone and the ambient air. In this case here, the second main point is, we're modeling inside a source. We're modeling inside a gas queue source itself, which, by definition, can't have complete mixing between the outside ambient air, the ozone, and the material inside the source. So in that context, applying OLM to that kind of application, it is, it is -- it's not a typical application of the model.

Q The first question I asked you went to the first sentence, which said: The OLM method was developed for stack sources, primarily power plant stacks. And I asked you if the station was a power plant or if it otherwise had a stack, and I thought you sort of qualified that answer, but then you just said that the methodology here is different because you're not dealing with stack sources. Which is it?

A Well, I said we had both. We have stack sources, and we have, we have area sources. What I was referring to in the second part of my response was that the area sources, like the gas queue, that's not a stack, and we have receptors inside the source, and so in order to apply the OLM method, some judgment is required.

Q You said the area source was the gas queue, and what did you consider to be a stack source?

A As I mentioned, the vent from the tank, the underground tank, is a stack source, and the loading dock emissions were treated as a stack source.

Q And why did you treat the loading dock differently?

A Loading dock emissions are coming from the stack of the heavy-duty diesel vehicles or the trucks themselves. They are -- they're coming from a point. They aren't coming from an area. We, as we said in the protocol, simplified it

to having one stack in the center of the gas queue.

Q And when the OLMF -- the OLM method in the first paragraph on page 27 of your report where you say it was developed for stack sources, primarily power plant stacks, what's the typical height, or is there an average height of a power plant stack?

A I don't know off the top of my head what the average height is, but they're tall stacks, typically.

Q Have you ever studied one?

A Yes.

Q And what was the height of --

A It varies tremendously. I mean, you're asking a range?

Q And what is the range?

A The Mirant Power Plant had stacks in Alexandria just barely above the top of the building, which I don't remember exactly the height, but they weren't very high, and you have some stacks that may be 200 meters high. So it varies quite a bit.

MR. GROSSMAN: And you called the loading dock a pseudo stack. Is there a definition of stack in your business?

THE WITNESS: A stack, yeah, a stack would be where emissions are coming out of a confined point, one clearly defined point with a known area.

MR. GROSSMAN: It doesn't have to be a certain height, or it doesn't have to be above ground, or it does have to be above ground?

THE WITNESS: It'll be above ground, but --

MR. GROSSMAN: Well, is the vent from -- does the vent from the gas tank, underground gas tank, does that qualify as being above --

THE WITNESS: It has a, I don't remember the exact height, 10 or -- maybe a 10-foot or so vent that does discharge above ground level.

MR. GROSSMAN: I see. Okay.

BY MS. ROSENFELD:

Q And what is the height of the stacks on the trucks at the loading dock?

A I'd have to look in the report, but it's fairly low. I don't, I don't recall off the top of my head.

Q Do you have that identified in your report?

A I may. I'll look. I don't, I don't see it handy. I could, I could give you an approximation.

Q Sure.

A I want to say on the order of 10, eight, 10 feet, but it's in our modeling files. I'd direct you to our data disks that explains, that shows the exact height that was used.

Q And what did you estimate the height of the

vehicle emissions from the vehicles in the queues to be?

A The midpoint height was .75 meters.

Q And do you know what that is in feet? The other numbers you gave me were in feet.

A Two-and-a-half, three feet, approximately.

MR. GROSSMAN: While they're cogitating, Mr. Sullivan, have you seen other applications of the OLM method, other than this case?

THE WITNESS: I have. In the literature, it does describe them.

MR. GROSSMAN: Have you had occasion to use it yourself before?

THE WITNESS: We may have at one point a long time ago but not recently. I mean, there hasn't been a real strong need in the past, because the past is a one-hour NO2 standard; in many cases, it's quite easy to achieve the NO2 standard.

MR. GROSSMAN: Okay.

THE WITNESS: So in the study in 2010, it became a different ball game.

MR. GROSSMAN: But in the literature, you say, you've seen the OLM method applied?

THE WITNESS: I have.

MR. GROSSMAN: And in that literature did the EPA approve the application of the OLM method?

THE WITNESS: The application I'm thinking about were published. I know one of them was published. The second one may have been published as well. They're referred to by EPA in the Fox, Tyler Fox, March 1st, 2011, document, and he mentions the application in Atlanta, Georgia, applied to roadway networks and he mentioned an example in Alaska for a power plant that had fairly short stacks. So there's a couple of examples that were referenced there by EPA.

MR. GROSSMAN: Right. I see on page 7 of that document, which is Exhibit 407, the first full paragraph begins with: These preliminary model evaluation results also serve to highlight a point worth emphasizing, which is that PVMRM option in AERMOD is not inherently superior to OLM option for purposes of estimating cumulative ambient NO2 concentrations.

I mean, I point that, that out to you, too, Ms. Rosenfeld, and I just, I just ask, is that -- I want to know what the evidence is that this is not an acceptable, a scientifically acceptable method. Whether it's applied here appropriately or not, I understand and I'm giving you leeway to go into examining the witness on that point, as you are, but for the underlying question, the evidentiary question you raised, I want to hear any evidence you have on that point, because it appears to me in the literature that, that

EPA does accept the use of that methodology.

BY MS. ROSENFELD:

Q You had mentioned that -- one more question before I move on. Is there, are there different plume heights between the stack of a power plant, for example, in the standard OLM application of this modeling as opposed to the plume height for the vehicle emissions that you've modeled?

A There clearly are differences in heights.

Q Can you give me a, sort of a range?

A Well, I think I mentioned it. We modeled the motor vehicle as basically one-and-a-half-meter, five-foot heights and put a midpoint of .75 meters. Power plant stacks often are 100 meters or more.

Q Yes, but I was asking about the plume.

A Well, the, I mean, they're probably 3 or 400 meters for the plume from a power plant, but to clarify and get back to Mr. Grossman's question, the methodology has been applied to short stacks, such as the -- the power plant in Alaska had, had very low stacks that were down-washed by the building, and the application in Atlanta was for cars, roadways.

So this is not the first time it's been applied to roadways. The biggest difference is this time we're applying it with the receptors inside the source. So that requires, as I'm saying, some judgment. We can't just

blindly use a model, ignoring the fact that if we applied OLM directly and applied it to every receptor, that we would violate the conditions of OLM, which requires we have uniform mixing to the molecular level. It's theoretically impossible to have that inside a source itself or immediately near the, near the source. It takes a long travel time, as I indicated in many of my references.

Q You had identified the Alaska study, and I think you also said that there have been some OLM reports in your references. Could you identify those for me, please?

A They're in the Fox 2011 document that we had earlier. I can search for the page numbers, but they, they discuss both of them, those two examples. On page 7, for example, the bottom of page 7, they talk about the Atlanta application to mobile sources, and also in here they describe --

Q I'm sorry. I'm sorry. You're going to have to let me catch up. On the bottom of page 7 of Exhibit 407?

A I'm not sure of the exhibit number.

MR. GROSSMAN: Yes, it is, Exhibit 407. It's what I --

BY MS. ROSENFELD:

Q And where --

MR. GROSSMAN: -- it's the page I just read from. I read the first --

MS. ROSENFELD: You did read that, but I'm not sure that -- my question for him was where, where did he find the studies where OLM was used to apply to something other than a stack.

THE WITNESS: I reviewed -- these studies are available on the Internet. I did review them.

BY MS. ROSENFELD:

Q Are they listed in the Tyler Fox memos?

A I believe that they are.

Q Okay. If you could identify them for me, please.

A Well, perhaps he didn't list them as references, but I looked on --

MR. GROSSMAN: He lists references on pages 21 and 22. I don't know --

THE WITNESS: Right.

MR. GROSSMAN: -- if it's among those.

THE WITNESS: I don't, I don't see it here, but if you search online, like I have done, they're online.

BY MS. ROSENFELD:

Q I'm not looking to search online. I'm asking you -- Mr. Grossman asked you a very specific question: Have you reviewed studies or reports that apply the OLM method in other settings? And you said yes, and you generically referenced studies --

A I can give you the --

Q -- and now you're inviting me to go online and look for them. I'm --
A I'll give you the reference.
Q Thank you.
A It's, the Atlanta study is described --
Q And you're looking where?
A I'm looking at a document I pulled off the Internet. I'll give you the reference. It's httpwww.epa.gov/ttn/naaqs/standards/nox/data/20081121_no2_rea_final.pdf.
Q Final dot what?
A PDF.
MS. ADELMAN: PDF.
BY MS. ROSENFELD:
Q PDF. And the very beginning of that? I got up to .gov. Can you read up until .gov?
A Sure. It's www.epa.gov/ttn.
Q Got it. Okay. And that study reflects what in your opinion?
A That study is showing, is using the, I think they compared -- if I recall correctly, they compared it to two different options for the highway network in Atlanta, Georgia.
Q And which two options were compared?
A Well, OLM clearly was in there. I believe it was

OLM and PVMRM.
MR. GROSSMAN: If it helps, on the bottom of page 7 of Exhibit 407, this following sentence occurs: Furthermore, the OLM option with OLMGROUP ALL was used to estimate NO2 concentrations from mobile source emissions modeled as area sources for the Atlanta area as part of the EPA's Risk and Exposure Assessment, parens, REA, for the most recent NO2 NAAQS review, and that's parens, EPA comma 2008. And --
MS. ROSENFELD: Bottom of page 7 of which exhibit?
MS. ADELMAN: 407.
MR. GROSSMAN: This is 407. Then it goes on to page 408, which I continued reading, and it says: Results of model-to-monitor comparisons from the REA show generally good performance, suggesting that the use -- that use of OLM with OLMGROUP ALL is appropriate for modeling such emissions.
BY MS. ROSENFELD:
Q And, Mr. Sullivan, in your modeling did you use the OLMGROUP ALL?
A We tested it both ways.
Q Is it in your rebuttal report? Is that --
A No.
Q Are the results of that analysis in your rebuttal report?

A They are not.
Q Okay.
MR. GROSSMAN: What is OLMGROUP ALL?
THE WITNESS: The difference between the two methods, OLM will evaluate each source separately to see how much, how much ozone is available, but OLMGROUP ALL looks at all the sources together -- in the ring road, the loading dock, and the rest -- and the bottom line is the OLMGROUP ALL option produces substantially lower impacts than OLM, and it's more accurate. We used OLM in the heart of our report because it's more conservative, but it makes a large difference in the results.
BY MS. ROSENFELD:
Q And in addition to the one report that you just cited --
MS. CORDRY: While she's looking at that, Mr. Sullivan, if I'm understanding, are you referring --
MR. GROSSMAN: No, no, no, no, no.
MS. CORDRY: Could I --
MR. GROSSMAN: No. No.
MS. CORDRY: -- I'm just trying to find --
MR. GROSSMAN: No.
MS. CORDRY: -- the citation he's talking about.
MR. GROSSMAN: No. Well, you can get citations offline.

MS. CORDRY: Well, okay, I'm trying --
BY MS. ROSENFELD:
Q Do you have any other studies or reports, in addition to the one that you just gave me from Alaska, in response to Mr. Grossman's question about sources of authority for using the OLM?
A Well, I'm using the source, the primary source of authority, EPA's guidance, especially March 1st, 2011, but I did, I did provide, and they provide two examples, which I have reviewed, which, which demonstrate EPA has used that methodology in rule-making. So it's been through peer review. I also provided probably 10 references that support the use of the method for this application, including how quickly mixing occurs between the ozone and the ambient air with plumes and so forth. So I provided quite a few documents to support the use of this method in this application.
Q I'm looking on your, in your rebuttal report, Exhibit 466, starting on page 21 and going through page 22, your references. Which of these references deal with ground-level sources?
A I'd have to go through them one by one. So do you want me to go through them one by one?
Q Yes.
A Well, Fox, the Fox, March 1st, 2011, clearly does

because I just described that.
Q I'm sorry. My --
A Fox --
Q -- my question was, where, which of these sources reference ground-level application of OLM?
A Well, most of these references describe greater mixing between the ambient air and the plume itself. The references that describe the other applications of OLM are contained in Fox 2011. The rest of these documents are related to peer-reviewed documents on the fact that the change, the change in the ratio of NO2 occurs slowly, and that's what these documents do to support the application for this, use of the method for this application.
Q But that's not the question that I asked. I asked, which of these references document use of the ozone limiting method to ground-level sources?
A Fox 2011.
MR. GROSSMAN: That's the, just for clarity, that's the reference at the end of page 7, the Atlanta mobile source emissions, which is what's the -- the bottom of page 7 and onto page 8.
MS. ROSENFELD: Mr. Grossman, I'm really not trying to be obtuse here. I just don't see that --
MR. GROSSMAN: Okay.
MS. ROSENFELD: -- on page 7. I have Exhibit 407,

is that correct?
MR. GROSSMAN: Yes.
MS. ROSENFELD: And we're on -- okay.
MR. GROSSMAN: Bottom of page 7.
MS. ROSENFELD: Right.
MR. GROSSMAN: Furthermore.
MS. ROSENFELD: Yes.
MR. GROSSMAN: The last sentence on the bottom --
MS. ADELMAN: The very last sentence.
MR. GROSSMAN: -- of the page begins with furthermore. Do you see that?
MS. ROSENFELD: I got it. Okay.
MR. GROSSMAN: Okay.
MS. ROSENFELD: For the Atlanta area.
MR. GROSSMAN: Right.
MS. ROSENFELD: Okay.
BY MS. ROSENFELD:
Q And, Mr. Sullivan, to your knowledge, is that study in the record of this case?
A The Atlanta study is not in the record. I mean, it's -- the study is available.
Q Okay. And aside from that one Atlanta study, do you have any other source of EPA review or approval of a ground-level application of the ozone limiting method?
A Well, I mentioned the Alaska work done by

Dr. Steve Hanna. That was for a low stack in Alaska with very low stack heights. I believe it was referenced in Fox, but yeah, that one I have reviewed, and that used the ozone limiting method as well.
Q And would those low stack heights be more comparable to the vehicle emission heights of two-and-a-half or three feet or closer to what you called the pseudo stacks of the trucks at the loading dock and the vent?
A The stacks, if I -- I'll just give you a rough estimate, probably 30 feet high. So they're more, they're closer to the truck loading dock heights than the, the car heights.
Q So that Alaska study, in fact, was in fact higher than even the pseudo stacks that you were --
MR. GROSSMAN: I think he only characterized the loading dock as a pseudo stack. He characterized the vent as a stack. Am I correct, Mr. Sullivan?
THE WITNESS: That's true. That's correct.
BY MS. ROSENFELD:
Q You've mentioned several times that in this case the receptors are inside the source and that that makes this a unique situation. Once we get past the modeling phase, assuming the gas station is built, the receptors that you're talking about will be the people inside the queue, is that correct?

A That's correct.
Q And so, by analogy, what you're saying is, typically, you would not model the -- you wouldn't assume that a person would be inside a power plant stack, is that correct, when you say you generally don't model a receptor inside a stack?
A Well, I meant, as a general statement, in EPA's guidance, such as doing roadway analysis, and they don't, they recommend not putting receptors in the roadway or on the sidewalks. Analogous to that, we have a transient queue source. I've already made the point, which isn't shown directly in my modeling this time, that people aren't there for an hour; they're in and out --
Q That wasn't my question.
A -- but to finish my statement, basically, EPA does not require, it's not done. So in that context, putting receptors inside a source is unusual. We've done it because the question came up here and I tried to be responsive to it, but to do that, I have to apply methodology, such as OLM, consistent with its underlying assumptions. And one of those assumptions which is very important to this application, it has to have uniform mixing between the outside ozone and the plume itself.
Q I'm not asking about the science right now. I'm really --

MR. GROSSMAN: Yes, let's not go too far afield in terms of a response and --
BY MS. ROSENFELD:
Q You do agree that the receptors inside the mall need to comply with the NAAQS, just as the receptors at the home and the school and the pool, is that correct?
A I don't agree with --
MR. GROSSMAN: I don't know if I understand it, but the receptors inside the mall lead to?
MS. ROSENFELD: Need --
MS. ADELMAN: Need.
MR. GROSSMAN: Oh, need.
MS. ROSENFELD: -- to comply --
MS. ADELMAN: Need.
MR. GROSSMAN: Oh, okay.
MS. ROSENFELD: -- with the NAAQS.
BY MS. ROSENFELD:
Q It's not treated differently, correct?
MR. GROSSMAN: Okay.
THE WITNESS: What I'm saying is, in application, I've never --
BY MS. ROSENFELD:
Q That's not --
A It's important. I'm saying, when EPA -- when I've modeled for EPA for a permit, they do not require putting

receptors in the street, for example, or in the middle of a transient source.
MR. GROSSMAN: No, but let's try to answer her question. She's asking whether or not the receptors that are in the mall, I presume, are also important in terms of complying with the NAAQS standards.
THE WITNESS: Inside the mall being inside the mall building or in the parking lot?
MR. GROSSMAN: No, no, I think inside the parking.
BY MS. ROSENFELD:
Q On the mall parcel.
MR. GROSSMAN: On the parcel.
THE WITNESS: Well, I think it depends. I mean, if we're talking about, for example, annual average NAAQS, let's say PM2.5, would a location in the middle of the gas queue be reasonable? I haven't seen a modeling application I've done being reviewed by any agency that would make a judgment, saying you can't build this here because you're going to violate the ambient standard -- annual standard in a transient air like a gas queue. That would be -- some judgment is required in the plan model.
BY MS. ROSENFELD:
Q But as you've acknowledged repeatedly, this is not an EPA regulatory proceeding; this is a --
A But I think common sense applies.

Q No. No. I'm asking the questions. In this case, we're dealing with a special exception application, correct?
A That's correct.
Q And the Hearing Examiner and ultimately the Board of Appeals, in order to approve this, needs to find that there will not be an adverse health effect on the health, safety, and welfare, or the health and safety of workers, visitors, and employees in the area of the special exception application. Is that your understanding?
A That is.
Q And Costco, the applicant, has come forward and said the measure, the ruler that we will use is whether or not ambient air quality standards will meet or not meet the National Ambient Air Quality Standards, is that correct?
A That is correct.
Q And you have used that ruler to measure public health with respect to the school, the pool, the homes, and the mall parcel, am I correct?
A Well, yes, but to clarify --
Q Yes.
A Well, it's not a yes-or-no response.
Q That is a yes-or-no. Is that the measure --
A I'll leave a confused record if I answer yes or no.
Q Is that the measure that you have chosen?

A Not in every case. I mean, if you look at my protocol --
Q If that's --
A Well, let me finish.
Q Well, then I would like to hear.
MR. GOECKE: Can he finish, Mr. Grossman?
BY MS. ROSENFELD:
Q I would like to hear your answer.
MR. GROSSMAN: Yes. All right.
THE WITNESS: The November protocol makes it very clear that for 24-hour and annual averages, that, in our judgment, for this application it doesn't make sense to consider receptors inside the mall that will not be there for that entire period of time, and the process can evaluate that as they see fit. I'm saying common sense is part of the general EPA application of models relative to the standards. I can't decide how they're going to review it, but I'm saying that if it's a PM2.5 annual standard, does it make sense to assume that somebody will be in the middle of the gas queue for a year? My judgment, it does not, and I made that very clear in the report for November 2012.
BY MS. ROSENFELD:
Q But my question was different. My question was, has the applicant chosen the National Ambient Air Quality Standards as the measure against which you're going to

assess health impacts?
MR. GROSSMAN: Well, I do have a problem with that because he's not the applicant. He's a witness. He can answer what he did --
MS. ROSENFELD: Okay.
MR. GROSSMAN: -- in evaluating things, and I think he's just said that this is -- the standard that he applied is generally the NAAQS standard but there are certain areas where, he says, it doesn't make common sense to apply it. I think that's what he said, but he can't speak for the applicant.
MS. ROSENFELD: That's fair.
BY MS. ROSENFELD:
Q Has it been your goal through your modeling process to make a determination as to whether or not the emissions levels will meet or violate the National Ambient Air Quality Standards at the home, the school, the pool, and within the mall parcel?
A Yes, as I just, as I just stated, with the caveat about 24-hour averaging and annual averaging. I mean, I stand by that statement. I've --
Q I heard that.
A -- answered that question.
Q In your earlier testimony in this case, you stated several times, I think, that you thought the Hearing

Examiner was really limited to application of the EPA standards, that for him to do otherwise would be arbitrary, is that correct?
A Is it in the transcript? I don't recall using those exact words.
Q Okay.
MR. GROSSMAN: I don't recall him saying anything. It may have been argued, but it's possible.
MS. CORDRY: We'll find it for you, Your Honor.
MR. GROSSMAN: Okay. It's been a long time.
MR. SILVERMAN: And many reports.
BY MS. ROSENFELD:
Q You have testified and you've affirmed in your reports that, in your opinion, you're following EPA guidance and regulations in your modeling, is that correct?
A I've stated, I've stated that with the, with the caveat that part of the guidance does say to seek the most accurate answer, which does provide discretion to the analyst to use judgment; that the guidance is not fixed to the point you can't use judgment for a particular application.
Q So is it fair to say that you followed EPA guidance except when you decided to deviate from EPA guidance?
A No, that's not what I'm saying. Let me, let me

find the quote of what I actually did, because that's not, that's not it, because what the guidance says, I'd like to read it onto the record --
Q I'm sorry. What are you reading from?
A I'm reading from Appendix W.
Q Yes.
A And let me find the exact citation.
MR. GROSSMAN: What's the page reference?
THE WITNESS: Section 1.0, paragraph -- it's on 68230, Section D: The model that most accurately estimates concentrations in the area of interest is always sought. However, it is clear from the needs expressed by the states and EPA regional offices, by many industries and trade associations, and also by the deliberations of Congress, that consistency in the selection and application of models and data bases should also be sought, even in case-by-case analysis. And they go on to talk about consistency and the benefits of it, but what they're saying is, you don't apply consistency at the expense of accuracy.
MR. GROSSMAN: Well, you didn't get down to the, two sentences down.
BY MS. ROSENFELD:
Q And you could read, yes, would you read the last two sentences of that same subsection (d), please?
A Sure. Consistency ensures that air quality

control agencies and the general public have a common basis for estimating pollution concentration, assessing control strategies, and specifying emission limits. Such consistency, however, is not, however, promoted at the expense of model and data base accuracy. The guidelines provides a consistent basis for the selection of the most accurate models and data bases for use in air quality assessment.
Q So the touchstone really is, are the standards and the protocols that are set out in the guideline, correct?
A What do you mean by touchstone?
Q The first place that you look for your modeling assumptions is, are the protocols that are set out in the guideline, Appendix W, is that correct?
A Well, you look at EPA guidance, and you ensure that you're following the overarching goal of not sacrificing accuracy at the expense of conformity.
MR. GROSSMAN: Yes, we've been over this lots of times already. So let's, let's move along.
BY MS. ROSENFELD:
Q Okay. Let me go back to my earlier line of questioning. I'm looking at the June 17th, 2013, transcript, and I'd like to read from the transcript. This is testimony -- this question actually was posed by Mr. Goecke on line 11 of page 173:

Okay. And then, if not, would it be arbitrary or at least unfair for Mr. Grossman to hold Costco to a standard based on the expert evidence presented by the opposition?

Mr. Sullivan -- it says Silverman, but I'm pretty sure it's Sullivan. Mr. Silverman -- it was Mr. Silverman -- objection. He's not really a judge of fairness. He's a judge of standards, is all.

Mr. Grossman: Well, that's true in a sense, but I guess you could take my word on fair and say would that be an inappropriate way from an expert's standpoint to evaluate it. I think that's what I was getting at in the question. So go ahead and answer that.

The Witness -- and this is Mr. Sullivan -- they, of course, they do; they do add to some volatile organic emissions. We've quantified all of that.

Okay. Hold on. I'm sorry. I've skipped a page.

MR. GOECKE: Michele, which day is this from? June what?

MR. BRANN: June 17th.

MS. ROSENFELD: June 17.

MS. HARRIS: And the page number again?

MR. GOECKE: Can I have the page number again?

MS. ROSENFELD: Yes, page 173.

BY MS. ROSENFELD:

Q And I'm starting now, in other words, and I'm starting on 173, page, line 24:

In other words, if there's the standard, the applicant is going to try to see if they're above or below the standard. If they're above the standard, they'll install more controls to get below the standard. That's how the air emission business works, but if there's no standard, it would have to be arbitrary because there's no basis on a quantifiable benchmark for a decision.

MR. GOECKE: Is there a question on that?

MS. ROSENFELD: In just a minute.

BY MS. ROSENFELD:

Q And then to go further in that same transcript to pages 195 and 196, and this is Mr. Sullivan yet again:

We have to come up with control methods that will reduce these emissions so it's acceptable --

MR. GOECKE: I'm sorry. What line are you on?

MS. ROSENFELD: 196, I'm starting on the first line. halfway through that line.

BY MS. ROSENFELD:

Q We have to come up with control methods that will reduce these emissions, those emissions so it is acceptable, but if we don't know what the standard is, how can we approach that problem?

So if the position is, well, EPA standards aren't

acceptable enough, well, what's Costco supposed to do? What are they supposed to look at for guidance to try to further reduce their emissions? There's nothing they can do. So decisions that are made absent any kind of objective standards, as I mentioned earlier, would seem to me to be arbitrary. It could be different from one application to another because there's no standard or objective benchmark to compare the numbers to.

Going down to line 20 on that same page --

MR. GROSSMAN: Well, I think you, I think you've made your point --

MS. ROSENFELD: Okay.

MR. GROSSMAN: -- they have suggested that there is, there should be some objective benchmark.

MS. ROSENFELD: That's right.

MR. GROSSMAN: I don't consider those benchmarks necessarily binding on me in the sense that I could think that something could affect health that goes beyond it, but it's certainly a significant guideline for me in evaluating the case, and I think they've approached it the same way. So --

MS. ROSENFELD: And it's --

MR. GROSSMAN: I don't know where this is --

MS. ROSENFELD: Well, it's certainly been our position that we think that there are adverse health effects

even below the National Ambient Air Quality Standards.

MR. GROSSMAN: I understand that, and --

MS. ROSENFELD: But my --

MR. GROSSMAN: -- I'm not saying you're wrong about that. I haven't made any final decisions, but I think that we're appropriately approaching the case by looking to the EPA guidelines as a first step, at the very least, of evaluating these things. So I think that's an appropriate methodology.

BY MS. ROSENFELD:

Q And that goes back to my, my question earlier which was that in order to ensure that lack of arbitrariness, you really do need to conform to the guidance as set forth in the EPA guidelines, isn't that correct?

A Yes, that's correct, as I've stated, but it would be the guidelines in their totality. We don't just look at every single recommendation and ignore the fact that we're applying it to a specific application. The guidance says what it says. You read it. It's more than that. Your goal is to be accurate, and you conform to the sense you can but not at the expense of accuracy.

MR. GROSSMAN: Okay. So we've gone over that. Okay. Let's --

BY MS. ROSENFELD:

Q And my question for you is, how -- when you

deviate from the EPA standards, how is the Board of Appeals to know that that's a reasonable deviation?
A I haven't deviated in EPA standards. EPA standards are the National Ambient Air Quality Standards. They are what they are.
Q When you deviate from the modeling protocols, how is the Board of Appeals to know that that deviation from the modeling protocols and the guidelines is a reasonable deviation?
A From the modeling protocol or the EPA's guidelines?
Q The EPA's guidelines.
A I haven't deviated from the EPA's guidelines.
Q And so it's your testimony that application of the ozone limiting method in this case is not a deviation from EPA guidelines?
A That's correct.
Q Okay.
A At some point, Mr. Grossman, when there's good, convenient time, I'd like to have a break.
MR. GROSSMAN: I think that's fair. Let's take a break for five minutes, maybe even seven minutes.
THE WITNESS: That'd be good.
MR. GROSSMAN: Okay.
(Whereupon, a brief recess was taken.)

MR. GROSSMAN: We're back on the record. Scheduling.
MS. HARRIS: Thank you. So one question is, who else is the opposition intending to call, and also, we had previously indicated that Mr. Sullivan is not available on the 20th, and I'm a little --
MR. GROSSMAN: The next session we have is on the 12th. So --
MS. HARRIS: 12th, right, but Ms. Rosenfeld also indicated she had four more hours of cross for Mr. Sullivan.
MR. GROSSMAN: I'm sure she'll shorten it up, but that'll be -- we'll finish with him on the 12th then.
MS. HARRIS: And then we have Dr. Cole.
MS. ROSENFELD: I would expect to finish Mr. Sullivan's cross-examination on Monday.
MR. GROSSMAN: Pardon me?
MS. ROSENFELD: I would expect to finish Mr. Sullivan's --
MR. GROSSMAN: You dropped the last sound on the last word. So I didn't --
MS. ROSENFELD: Sorry. I would expect to finish Mr. Sullivan's cross on Monday and that --
MR. GROSSMAN: Yes, maybe Monday, real early.
MS. ADELMAN: Mr. Sullivan has some questions. I mean, Mr. --

MR. GROSSMAN: Mr. Silverman.
MR. COLE: Mr. Silverman.
MS. ADELMAN: -- Silverman.
MR. GROSSMAN: Did we say we're going to let him ask any questions? How long will your examination take, Mr. Silverman?
MR. SILVERMAN: Well, they're going to be really cogent, well-honed questions. So --
MR. GROSSMAN: I know better than that.
MR. SILVERMAN: -- so I think we could be -- I don't anticipate more than an hour. I really don't.
MS. HARRIS: And then Dr. Cole then. Then they're putting Dr. Cole on the stand, correct?
MR. GROSSMAN: Right.
MS. ADELMAN: Right.
MS. HARRIS: And how long do you think his testimony will take?
MS. ROSENFELD: I'll let you know Monday. I can't guarantee we're going to finish with him on Monday. I don't know. At this point, I don't know.
MR. GOECKE: That's our concern.
MS. CORDRY: Well, we could certainly go to, I think, traffic or other kind of, you know, surrebuttal at that point, I think, on the -- is that the 20th we're talking about?

THE WITNESS: 20th.
MS. ADELMAN: No. You've always said that's going to be a non-environmental day.
MR. GROSSMAN: Right.
MS. ADELMAN: Right.
MS. CORDRY: The traffic or whatever, you know, however the rebuttal comes in, we can do the other rebuttal on that day.
MS. ROSENFELD: Do you want to do traffic on Monday?
MS. CORDRY: No.
MS. ADELMAN: No.
MS. ROSENFELD: No.
MR. GOECKE: Right. So which witnesses besides Dr. Cole do you plan to call?
MS. ROSENFELD: Ms. Cordry. And Dr. Adelman?
MS. ADELMAN: No.
MS. ROSENFELD: No.
MS. CORDRY: Potentially. There are a couple of other --
MR. GOECKE: He's not going to testify?
MS. CORDRY: -- there are a couple of neighborhood people on traffic as well, very short. I'm not sure if there's much of anything else there, but --
MR. GROSSMAN: Couple of neighborhood people, did

you say?
MS. CORDRY: Yes.
MR. GROSSMAN: On rebuttal?
MS. CORDRY: Yes.
MR. GROSSMAN: All right.
MS. CORDRY: And --
MR. GOECKE: Do we know who they are?
MS. CORDRY: I'm verifying the names. I can let you know. And then potentially somebody, if we get into anything about health, you know, potentially there might be something there, but that would be, that would be it, I think. You know, we don't have a lot of surrebuttal beyond Dr. Cole.
MS. HARRIS: Mr. Grossman, how -- I'm a little confused how someone who hasn't sat through the rebuttal then is here to testify in surrebuttal for the traffic.
MR. GROSSMAN: I'm a little confused by that, too, unless they tell me that they've read the transcript and they, they're responding to something in the transcript --
MS. CORDRY: Well, they can do that. They --
MR. GROSSMAN: -- on rebuttal.
MS. CORDRY: -- you know, there could be -- you know, there's testimony there that not aware of trucks idling, and if there is, you know, continued testimony about trucks sitting in somebody's backyard right on the edge of

the ring road, idling for several hours, in the last week or two, I think that goes to the question of are there in -- is there in fact trucks idling far beyond what is being used in the modeling.
MR. GROSSMAN: If somebody says they're not aware of something, that doesn't make it subject of a surrebuttal unless you have somebody who can testify that they were aware of it. That's what the -- that would be the response that would be subject to being responded to. That is, you can -- the fact that somebody's not aware of something does not establish a right to rebut that by evidence that has nothing to do with whether that person was aware or not.
MS. CORDRY: Well, we can argue about --
MR. GROSSMAN: Anyway, you can think about it, but let's limit it to surrebuttal -- not, not the defense case, but to surrebuttal. All right.
MR. SILVERMAN: Mr. Grossman, I have a feeling that the discussion of documents may take some time. In a way, I was sort of disappointed Mr. Goecke took back his comprehensive breathtaking motion to exclude everything important, but -- because I think it would be helpful to review some of these documents, for us and for you and for the Board. And I hope you'll -- my anticipation is that there will be a little bit, that we'll take some time with that. And, also, with regard to summations, you know,

there's --
MR. GROSSMAN: Do you want to spoil my, the suspense of my having to go through all the documents later?
MR. SILVERMAN: I don't want you to do it by yourself, Mr. Grossman. I'm concerned about you.
MR. GROSSMAN: All right. In any event, well, we will, we'll take what time is needed to go through the documents that have been objected to and briefly to discuss conditions.
MR. SILVERMAN: And on the summations, you know, there's, there are not that many issues, traffic and health and property values and plans and so on. Maybe there's five or six, I'm not sure at this point --
MS. ROSENFELD: Your long-term memory must be better than that.
MR. SILVERMAN: Perhaps it is, but each of those has got its own, its own little world, and I'm wondering if it would be helpful -- I have not discussed this with anyone, and maybe it's not a good idea -- but it would be helpful to do summations, to raise the issue and make the arguments on that, on the planning issue, for example, and then move on to the next issue, the next issue, whether that would be --
MR. GROSSMAN: You mean split up the summations by topic?

MR. SILVERMAN: Yes.
MR. GROSSMAN: I think Ms. Rosenfeld doesn't agree with you. She doesn't want to do that. She wants to get rolling.
MS. CORDRY: Well, I mean, we still, we're going to have the written arguments, right, and then have the summation after all of the written arguments are --
MR. GROSSMAN: I think that's what we decided. It's been --
MS. CORDRY: Yes.
MS. HARRIS: Yes.
MR. GROSSMAN: -- a long time since we decided that. Is that --
MR. GOECKE: We did. We did.
MR. GROSSMAN: Right. So --
MR. GOECKE: But before we get there, we have to finish these hearings --
MR. GROSSMAN: Yes, let's do that.
MR. GOECKE: -- and that's why we raised these issues. So --
MR. GROSSMAN: Let's do that --
MS. HARRIS: Right, because the final day --
MR. GROSSMAN: -- before the EPA changes the standards again.
MS. HARRIS: The final day that we have scheduled

is the 22nd. Are we confident that we are going to be done on the 22nd? I certainly hope that we will be, but I'm a little concerned, given eight hours of cross-examination, that we may not be.

MR. GOECKE: And the mystery witnesses as well.

MS. HARRIS: Yes.

MS. CORDRY: Well, I mean, I think any witnesses we have I do not think are going to go beyond -- yes, I don't, I certainly don't see anything we'd have going beyond the 20th. In fact, I would expect there would be time to talk about the objections of --

MR. GROSSMAN: And that would --

MS. CORDRY: -- the documents on that day.

MR. GROSSMAN: We have the 22nd. Is that the other day?

MS. CORDRY: Right.

MS. ADELMAN: Yes.

MR. BRANN: Yes.

MR. GROSSMAN: Yes. So we'd have the 22nd to do it. All right. Let's -- I don't know about confident, but we're close enough; so maybe we can go with what we have, but let's see how it proceeds. We can always, if we have to, we can add another day on, but --

MR. GOECKE: Can we also get confirmation that any additional exhibits, we'll receive them by Monday for the

additional hearing dates?

MR. GROSSMAN: I'm sorry. Say that again.

MR. GOECKE: So we've got a hearing date on the 20th and the 22nd. So 10 days before the 22nd is the 12th, which is, which is Monday --

MR. GROSSMAN: Right.

MR. GOECKE: -- and so can we -- so can we stop this last-minute production of documents, or are they ready to -- are there more exhibits coming with the mystery witnesses? Do you know yet?

MS. CORDRY: Do we have more laws passed, more regulations put in place? Let me --

MR. GOECKE: More global warming studies coming out next week.

MS. CORDRY: Well, they're not a study. They're -- but in any case, let's put it this way: I certainly cannot guarantee that there's no salient document that will not come out in the next week that we might ask to have come in, but in terms of documents that already exist, yes, I think we can try to commit to getting everything on the record by Monday, yes.

MR. GROSSMAN: I mean, I think that all the parties have tried to do that, and I've tried -- I mean, as I've said before in this case, there is no discovery process, theoretically, in these zoning matters, nothing

specified in the statute or the rules about it, but I do think that I've tried, because for fairness reasons, to, in a case as complex as this one, to make sure that everybody had as much access to the information before a hearing day as possible so that we'd get an intelligent presentation of the facts. So --

MS. ROSENFELD: On -- go ahead, Larry.

MR. GROSSMAN: Are you going to argue with me about being an --

MR. SILVERMAN: No, no. I agree with that.

MR. GROSSMAN: -- intelligent presentation?

MR. SILVERMAN: No. I just, I just wanted to let people know there's a Federal Register notice of 2/17/2012 entitled Air Quality Designations for the 2010 Primary Nitrogen Dioxide NO2 Rule, and it's a final rule. And the citation is federalregister.gov/a/a/2012-23150, and we won't need all those pages, but I may raise --

MR. GROSSMAN: You're saying that a new set of standards is coming out?

MR. SILVERMAN: No, no. These are designations of air quality, NO2 air quality, whether they're in attainment or non-attainment.

MR. GROSSMAN: I see.

MR. GOECKE: That you may refer to in your questioning?

MR. SILVERMAN: Yes.

MS. ADELMAN: Yes.

MR. GOECKE: Would you mind just sending us that link?

MR. SILVERMAN: No. In fact, I'll give it to you.

MR. GOECKE: That would be great.

MS. ROSENFELD: You need to send it to me too.

MR. SILVERMAN: Oh, okay. I'll do that.

MR. GROSSMAN: All right.

MR. SILVERMAN: This is not the whole thing, but it's what's important.

MR. GOECKE: Thank you.

MS. ROSENFELD: We got this reference to this Alaska study and the one from the Fox memo that was discussed, and then there are the references in Mr. Sullivan's rebuttal report. I can't tell you right now if we're planning on using them. Do you want copies of all of those, as well, if we plan to reference them?

MR. GOECKE: Of the documents cited in Mr. Sullivan's report?

MS. ROSENFELD: Yes. Do you have those, or do I need to provide you with --

MR. GOECKE: I think we've got copies of those.

MS. ROSENFELD: -- copies? Okay.

MR. GROSSMAN: All right.

MR. SILVERMAN: And can we get a copy of the, or a reference to the Atlanta study and the Alaska study? I've been looking for them at the break. I can't find them.
MR. GROSSMAN: I think he gave a reference of what he had on --
MR. SILVERMAN: He gave a reference --
MR. GROSSMAN: -- to a website.
MR. SILVERMAN: -- which referenced them, but it didn't tell, didn't show the studies. So we're not quite sure under what circumstances --
MR. GROSSMAN: Yes. If somebody has them, I'd like you to share them, if you have those references.
THE WITNESS: I may have more. I have -- as Mr. Silverman said, I don't have the complete report for Atlanta. I have a summary. And for Alaska I have, I have read it. I'll check my files and see if it's there.
MR. GROSSMAN: Okay.
MS. ROSENFELD: Yes, and on, just while we're on this topic, on the Alaska report, we were able to pull it up. It's a 340-page document --
MS. CORDRY: No, that's the Atlanta report.
MS. ROSENFELD: Oh, the Atlanta report?
MS. CORDRY: Yes.
MR. GROSSMAN: Atlanta.
MS. ROSENFELD: So if you could point us to the

pages that have the sources that you were referencing, that would be helpful.
THE WITNESS: In the Alaska document?
MS. CORDRY: No.
MS. ADELMAN: The Atlanta.
MS. ROSENFELD: The Atlanta.
MR. GROSSMAN: No, the Atlanta.
MS. CORDRY: The Atlanta report, which is -- I think the site you were giving us was for the entire Risk and Exposure Assessment for the last standard, is that right?
THE WITNESS: Well, it was for that purpose, but I was referring to the modeling that was done of the roadway network for the city, to the metropolitan area. So that's the portion to look at. I don't, as I say, I don't have the full document right now. I have an excerpt from it, a summary. So, you know, I'll pull it up, but I don't have it with me.
MS. ROSENFELD: Yes, if you could just point us to where in that document we should be looking, it would help.
THE WITNESS: Well, I just don't have my guidance to look, but they should describe it in the modeling of the roadway segments. They're modeling the entire metropolitan area, and they're using OLM and, I think, maybe PVMRM as well, but look for that section; yeah, that's the part that

I'm referring to.
MR. GROSSMAN: All right. Questions? The floor is yours.
MS. ROSENFELD: Oh, I thought you were asking a generic question.
MR. GROSSMAN: No.
MS. ROSENFELD: Are you asking me if I'm ready to resume cross-examination?
MR. GROSSMAN: You may resume.
MS. ROSENFELD: Yes.
BY MS. ROSENFELD:
Q If we could turn back to Exhibit 285, which is Appendix W. This is EPA's guidance with respect to modeling for NO2, is that correct?
A It's one of their guidance documents that applies.
Q And when you say it's one of them, can you give me the full scope of documents that you have looked to or that you think govern? There's Appendix W and what else?
A Well, of course, Tyler, the Tyler Fox e-mail of March 1st, 2011 --
MR. GROSSMAN: '11.
THE WITNESS: -- and EPA has other, I'm sure, applicable guidance that could be reviewed, I mean, land use, how to just set urban/rural. There's a lot of different guidance. Well, actually, that's mostly contained

in the, in Appendix W, but I was primarily referring to Appendix W and the Tyler Fox memo for this application.
BY MS. ROSENFELD:
Q Okay. All right. Of looking at Appendix W, if, again, if we go to 28236 --
A I don't have that document, Ms. Rosenfeld. Thank you.
Q Yes. And I'm referring, again, to the flow chart at the top of the page that graphically outlines the three tiers that we've talked about. When I look at Figure 1 in your rebuttal report on page 11, page 11, Figure 1, the caption starts off: Stage I, Predicted 98th Percent Hour, Percentile, One-Hour NO2.
A That's page 11?
Q Yes.
MS. ADELMAN: Mine is the redline.
THE WITNESS: Yeah, page 11 is Figure 1.
BY MS. ROSENFELD:
Q Figure 1. And Figure 1, you call that Stage I, Predicted 98th Percentile, One-Hour, dot, dot, dot. Is this analysis the equivalent of a Tier 1 analysis?
A I would say, in the sense that it's 100 percent NO2, it would be equivalent to Tier 1.
Q Are there other deviations from Tier 1?
A No. I mean, basically, we're handling the

conversion of NOx, or NO, rather, to NO2, but it assumes 100 percent, which is consistent with Tier 1.
Q And is there a reason why you called it Stage I instead of Tier 1?
A I wasn't trying to match up to the tiers. I just had -- I had three different ways we modeled it, and I just called them stages. It's --
Q Okay.
A -- not related to the tiering system.
Q Okay. So then if I turn to page 12, where it says Figure 2 and you call that Stage II --
A Correct.
Q -- that doesn't correspond with a Tier 2 analysis; it's something different?
A It doesn't. That conversion would be a Tier 3 conversion approach.
Q You say this does use the OLM method?
A Yes, it does.
Q And you used five years of background?
A That's correct.
Q Okay.
MR. GROSSMAN: What happened to Tier 2, by the way?
THE WITNESS: We didn't, we didn't run Tier 2. I mean, we concluded that, you know, we're going to go, we're

going to go straight to Tier 3. You don't have to run each tier to be consistent with EPA methodology.
MR. GROSSMAN: Well, why did you figure that Tier 2 wasn't the appropriate tier?
THE WITNESS: I just felt, because of the fact that this application is modeling inside the source itself --
MR. GROSSMAN: Right.
THE WITNESS: -- which is unusual, because of that constraint, I chose to go straight to, to Tier 3. I mean, we could have run Tier 2 for completeness, I suppose.
MS. ROSENFELD: That took care of my next three questions.
MR. GROSSMAN: All right. Shortened it by two hours.
BY MS. ROSENFELD:
Q Where in Exhibit 285, which is Appendix W, would I find the methodology that you used for Stage II in your Figure 2?
A Appendix W refers to model selection and model options. Appendix W doesn't tell you for each application of a model how to run it. That's a case-specific issue, and applying a model in this particular case is a site-specific matter that would not be exactly contained in Appendix W or any EPA guidance.

Q So I wouldn't find it in the Tyler Fox, March 1, 2011, memo either?
A No. That kind of memo is not designed to be prescriptive of every model application. It's not possible to do that.
Q So the Stage II analysis that is summarized on page 12 is really derived from a model that you use, that you devised specifically for this report, is that correct?
A No.
Q Then what is it derived from?
A The model I'm using for this report is AERMOD, using the OLM option of AERMOD without any modifications. This is strictly applying the model for this application.
Q Does Appendix W provide any guidance on what, what default inputs you should use under the AERMOD modeling?
A Well, for a matter such as this, which is quite unusual, I will say that, I'll refer back to the fact that the guidance recommends, on a case-by-case basis, seeking the most accurate model, and to do that for an unusual application like this will require that some judgment be applied in applying the available model and options. So that's the best explanation I can give.
Q And on page 13, Figure 3, of your rebuttal report, which is described as Stage III, that doesn't correspond with Tier 3, does it?

A Well, I considered -- Tier 3 is more, is more case-specific analysis. This does not directly apply OLM, but it's applying, it's applying the methodology of -- that's consistent with OLM based upon the references that I have provided. It's an adaptation. It's not developing a new model or a new methodology. It's applying methodology that exists to an application at hand.
Q Did I hear you say that Stage III does not use OLM?
A It does, it does not. It's making judgments of extremely conservative ratios of NO2 to NOx based upon the review of the literature that's contained in Appendix B.
Q And where in EPA guidance or in any of the sources that you've referenced did you find other modeling that used this non-OLM approach?
A EPA guidance, as I just answered, doesn't get that specific in terms of detailed applications. I applied this stage, all these stages consistent with the guideline on air quality models.
Q Well, I'm confused. On the one hand, you say you apply the guidelines; on the other hand, you say you don't. So let's go to Stage III. Can you, can you tell me what you did apply from the guidelines and where you deviated from the guidelines?
A I'll say again that the guidelines promote

consistency but not at the expense of accuracy. I don't want to read the quote again, but the issue is, I am following the guidelines in applying existing models and options to a rather unusual application: inside a source itself and immediately adjacent to a source itself. So I am following the guidelines. I don't think I ever said I wasn't following the guidelines.

MR. GROSSMAN: Let me segue off that, and let's not -- let's try to avoid that question again because he's answered that many, many times, that same question already. But you did say, in terms of Stage III, that you didn't apply the OLM method but you were consistent with the OLM method. I think that's what you answered. I don't understand that. What does that mean?

THE WITNESS: What it means is OLM -- the OLM method is converting NO directly emitted from the vehicles to NO2 --

MR. GROSSMAN: Right.

THE WITNESS: -- and it's doing it on a mole-by-mole basis, one mole of ozone; NO creates NO2. To do that it needs to, as the methodology indicates for OLM, it needs to have mixing occur.

MR. GROSSMAN: Right.

THE WITNESS: My point with Stage III, you know, we're modeling the ring road, we're modeling the loading

dock and various things that have most effect on the modeling, and we have nowhere near enough travel time to meet the conditions of OLM exactly. So I'm applying ratios, as described in my report, extremely conservative ratios of how much conversion could possibly take place in these short distances, and that's based upon the literature that I cited.

So I'm capping. I'm saying, for the loading dock and the gas queue, I'm using 25 percent NO2 to NO, and I described why, and for the other sources, I'm assuming a 50 percent conversion, which, based upon my references, these scales, which are on the order of tens of meters where the most important sources are, that they get an extremely conservative application of that approach.

MR. GROSSMAN: But for the Stage II calculations, Figure 2, you did use the OLM method?

THE WITNESS: Correct.

MR. GROSSMAN: I'm still having difficulty understanding how in Stage II it can be the OLM method and Stage III can be OLM -- consistent with the OLM method but not applying the OLM method. I don't quite follow that.

THE WITNESS: Well, the issue is that for the sources such as, that are inside, where the queue is and really adjacent to the loading dock, that's inside source areas. There's not sufficient, obviously sufficient time to

have really any significant conversion.

MR. GROSSMAN: Right, but how did you treat them differently under the OLM method versus the Stage III method?

THE WITNESS: They were treated the same.

MR. GROSSMAN: Okay. What was treated differently?

THE WITNESS: The sources such as the ring road, where the ring road we assumed OLM applied and the peaks are happening right, practically on the ring road. There is not sufficient travel time for those really to be real numbers. It's overstated based on the literature. So we picked an upper bound, which really would be a very high upper bound, of 50 percent conversion, and that's basically assuming it's happening within 10 or 20 meters of where it's released.

So the application that we have done is consistent with the literature. It's exactly the same for the queue and loading dock but more realistically applies to the, primarily the ring road, which is the one affecting this the most, and nearby roadways. It's using a number that's much more consistent. I mean, OLM can go up to 90 percent conversion if there's enough ozone. So it's not --

MR. GROSSMAN: So you're saying that in Stage III you were more conservative than the OLM method?

THE WITNESS: No. I was less conservative in

Stage III, more realistic.

MR. GROSSMAN: More realistic than --

THE WITNESS: Correct.

MR. GROSSMAN: -- than the OLM method?

THE WITNESS: That's correct.

MR. GROSSMAN: All right.

THE WITNESS: Put another way, there are --

MR. GROSSMAN: And the only difference was in the ring road and the other areas around but not on the mall itself?

THE WITNESS: Not for the, not for the, not, it was for -- the loading dock and queue we treated the same. Other sources are capped at 50 percent --

MR. GROSSMAN: All right.

THE WITNESS: -- and if you look at the, look at the direct emissions from, that I have shown in my reports, a lot of times the direct emissions from these vehicles is five to 10 percent NO2. That's the common value you see. So I go up to 50 percent.

MR. GROSSMAN: Okay. Ms. Rosenfeld.

BY MS. ROSENFELD:

Q And so when you say you treated Stage II and Stage III the same for purposes of the queue, do I understand that to mean that you limited the conversion ratio within the queue area to .25 percent in Stage II and Stage III?

A That is correct, within the queue area and the 40-meter boundary around that particular area.
Q And then when you talk about the queue area, do I understand correctly that you are really talking about the queue plus the -- you had a perimeter beyond the queue. It's either 50 or 70 meters, I believe.
A It's 40 meters.
Q Forty meters?
A It's one with the plume, one with the area sources.
Q And you say that the only, if I remember your testimony correctly, you can only determine that 40-meter perimeter by looking at your, at your data, is that correct?
A I'm sorry. Can you repeat that question?
Q I believe I asked you, where is that perimeter shown in your rebuttal report, and I think you told me that you have to look at the data itself.
A The model files describe that particular zone. It's 40 meters, which is approximately -- well, it's one width of the area source around it.
Q Would that 40-meter perimeter vary hour by hour, or is it a fixed boundary?
A It doesn't vary by the hour.
Q And if you can take a look at this. It's been marked as Exhibit 230, the overall illustrative plan.

MR. GROSSMAN: Do we have the movie up there for any particular reason today or --
MS. ROSENFELD: No.
MS. CORDRY: We didn't. They put it up.
MR. GROSSMAN: Just for the fun of it?
THE WITNESS: Well, in case -- I mean, I do have references that I could, if needed, I could show.
MR. GROSSMAN: I see.
MS. HARRIS: You didn't see the feature film?
MR. GROSSMAN: I missed the feature film. All I remember is it used to be .30 when I was a kid.
UNIDENTIFIED SPEAKER: All day.
MS. ROSENFELD: Mr. Grossman, do you have your pointer with you today?
MR. GROSSMAN: Yes, but Ms. Cordry has it.
MS. CORDRY: That's what -- I'm trying to find it right now, if we still are hiding it here somewhere.
MR. COLE: Uh-oh.
MS. CORDRY: Uh-oh.
MS. ADELMAN: Are you looking for the pointer?
MR. COLE: This was an issue when I --
MR. GROSSMAN: Yes. No, but she --
MS. ADELMAN: Oh, that's trouble.
MR. GROSSMAN: -- she said she gave it back to me the last time, and she did.

THE WITNESS: I have one.
MS. ROSENFELD: That's fine. I --
MR. GROSSMAN: The important thing is to find the government property one.
MS. ADELMAN: Yes.
MR. SILVERMAN: Right.
MS. CORDRY: I don't think I said I gave it back.
MS. ADELMAN: That has an exception number, I'm sure.
MR. GROSSMAN: The last time she gave it back to me. This time you didn't.
MS. CORDRY: The last time I gave it back.
MS. ROSENFELD: We can use a highlighter.
MR. GROSSMAN: That doesn't, that highlighter will not project a laser beam.
MS. ROSENFELD: I know. That's okay. Unlike the laser beam, it'll leave a mark on this paper, which I would actually prefer.
BY MS. ROSENFELD:
Q Looking at Exhibit 230, which is the overall illustrative plan, dated 7/31/12, could you draw approximately where that 40-meter boundary would fall?
A I'd prefer to refer to my figures -- Figure 1, 2, and 3 show the exact area we modeled on the aerial photograph -- because I'm not going to be able to accurately

do what you asked me to do.
Q I can tell by looking at this figure where the 40 meters --
A Yes, you can.
Q Okay. I didn't --
A No, I didn't say that. I said you can see where the queue source is located and you could then scale from this, you know, 40 meters all around it.
Q No, I don't want to scale anything. I want you to scale it, please.
A Well, I'm not going to scale it while I'm sitting here on the stand.
Q Does the 40 meters extend into the forest buffer area on the mall parcel?
A You'd have to measure. I just, I don't recall.
Q Did you ever look at it --
A I certainly --
Q -- compare it on a map?
A I looked, I know that -- the distances are shown here, but for me to do the measurements now, I don't know exactly on the south, exactly where it would stop on here, but --
Q And the distance is shown where?
A I said it's not shown in the figure. You would have to draw lines around it, which, you know, I haven't

done for each direction to see exactly where it ends, if that's what you're asking.
MR. GROSSMAN: Which figure are you looking at?
THE WITNESS: I'm looking at Figure 2. The queue is shown as the red rectangle. That's in the southern portion of the blue area, the special exception area, and it's shown in that figure -- the 130 is inside that particular rectangle. That would be the gas queue itself.
BY MS. ROSENFELD:
Q And 40 meters is approximately how many feet?
A On the order of 120 feet, 131 feet.
Q So that 131 feet begins at the edge of the special exception area?
A At the edge of the queue, which is --
Q At the edge of the queue?
A -- which is a little bit north of that area.
Q And extends 131 feet in this direction?
A All directions.
Q Southerly direction?
A All directions.
Q All directions. Do you know the distance between the queue area and the nearest residential property?
A I don't recall off the top of my head what that distance is.
Q And do you know the distance between the edge of

the queue area to the east and how far it extends? Would it extend over the loading dock area?
A You know, like I said, I have not marked those boundaries. It was not necessary to do that. So I'm not going to -- I can't guess. I mean, it's -- I'm not going to try to guess at it.
Q If I look at Figure 2, to start with, and you have isopleths here; the one on the lower left, you say --
MR. GROSSMAN: The one that says 110?
MS. ROSENFELD: I think I see one that says 140.
MR. GROSSMAN: Oh. You said lower left.
MS. ROSENFELD: I was looking at the box on the lower left.
MR. GROSSMAN: I see.
BY MS. ROSENFELD:
Q Is the peak in there 147.4?
A The peak is 150 -- let's see, 147.4. The peak at that location is, we're showing -- at that particular xy-coordinate, we're showing a max of 156. I can't tell you exactly on here where that absolute peak would be, but it's most likely in the southern portion of the, of the, in the blue box.
Q When I look at the blue box on the lower left, there's an arrow going to the, basically the southeast corner of the special exception site. Do you see that?

A Right, I do.
Q And it says, contribution to maximum receptor from source group, and at the bottom, it says, total, 147.4.
A Well, I can answer that. Basically, the 147.4 pertains to the concentration near the gas queue. The 156 pertains to the maximum concentration near the loading dock itself.
Q Is the --
MR. GROSSMAN: That's the other box. The box --
MS. ROSENFELD: The other box on the upper right.
MR. GROSSMAN: -- on the right-hand side is the loading dock.
BY MS. ROSENFELD:
Q And is the gas queue within that 40-meter boundary?
A Is the gas queue -- well, the gas queue itself was inside the special exception area.
Q I apologize, my mistake. Is the loading dock?
A The loading dock is inside that boundary.
Q And so can you explain to me how you modeled the emissions from the loading dock given that it's located inside that 40-meter --
MR. GROSSMAN: Boundary.
BY MS. ROSENFELD:
Q -- boundary?

A Loading dock emissions, as well as the queue emissions, were placed at .25, the ratio of NO2 to NOx, and within that zone, within the source area and the 40-meter zone, that was treated on that basis. Outside that zone it was treated with OLM directly.
Q And can you explain in Figure 3 how you handled the loading dock emissions?
A Loading dock and gas queue were addressed on the same, on the same basis for the receptors inside that zone.
Q So it was also reduced by .25?
A No. The ratio of NO2 to NOx was treated as .25.
Q The conversion was a .25?
A The ratio.
Q It just was a straight, out of, out of the tailpipe .25?
A As I, as I could -- as my references show, out of the tailpipe, it's approximately 20 percent cars idling for a long period of time. We used 25 percent to represent all the locations inside that particular zone in terms of the sources of the queue and the loading dock.
Q And so you treated the emissions from the vehicles in the queue the same as you did the emissions from the trucks in the loading dock?
A That's correct.
Q And do you have any references in your rebuttal

report that would support the .25 application to the trucks?
A The .25 I believe came up in the, came up in the last of my testimony. How many times have I gave the reference? It's standard -- it came from California. I referenced documents. I don't have that document, I don't believe, with me, but it's a pretty standard default. As I show in these references, it's quite high for running vehicles. It's conservatively overstating a little bit the idling vehicles. Idling vehicles emit a lot more NO2 in relationship to NOx than moving vehicles.
Q And is that California report cited in your rebuttal report?
A I don't believe that it is.
Q Could you give me the name and source?
A I can provide that. I don't have it with me today. I can say, though, the reference Lenner and Lindquist, which is on my data disk, that that particular reference provides direct measurement of the how the ratios change the function of time for idling vehicles, and it shows you, you know, five, 10, 15, 20 minutes, how that ratio is modified. That certainly does support the use of 25 percent as a conservative application for this application here, where cars are only in queue 20 minutes max.
Q And you did reference that Lenner and Lindquist in

your report, correct?
A I did.
Q Okay. I'd like to go back to Appendix W again for a moment, which I think you have.
A I do.
MR. GROSSMAN: Appendix W is getting to be my favorite appendix, other than my own.
MS. ROSENFELD: You're going to get to know it very well.
THE WITNESS: It's great reading.
MS. ROSENFELD: Just getting warmed up.
BY MS. ROSENFELD:
Q If you could turn to Section 9.1.3, which is --
A What page?
Q -- on page 68246, and the heading of that section, it's under a section titled Use of Uncertainty and Decision-Making. And under there, the sentence reads: The accuracy of the model estimates varies with the model used, the type of application, and site-specific characteristics. Would you agree that, with that sentence, generally?
A Yes. That's basically what I said.
Q And it further states: Thus, it is desirable to quantify the accuracy or uncertainty associated with concentration estimates used in decision-making. Correct?
A Well, it says what it says. That's what it says.

Q Okay. Where in your rebuttal report have you quantified the accuracy or uncertainty associated with the concentration estimates that you have produced?
A Well, the basic rule of thumb on using AERMOD, you'll see references between 50 percent to a factor of two listed as uncertainty ranges. As I've mentioned before, for applied modeling EPA does not require, and I've not seen it done, where you do any kind of uncertainty analysis for that application at hand. The standard is treated as bright lines. If the standard is 190, you know, 190.4 is a pass; 190.6 would be a fail. There's no uncertainty bounds added into that analysis.
Q Well, I understand that the standard that you're trying to achieve is a bright line, but this is talking about model estimates and the accuracy of model estimates varies with the model used, the type of application, and site-specific characteristics. Did you anywhere in your rebuttal report do any analysis showing this 50 percent to a factor of two uncertainty analysis?
A Well, I certainly considered how my modeling would match up compared to the event. Let's say monitoring were done, which I'm not advocating, as I mentioned before, but uncertainty -- my modeling, Stage III, for example, shows 121. I think the actual expected range, in my judgment, would be under 100, probably be somewhere between 75 and 100

micrograms per cubic meter as the 98th percentile. So, in that context, yes, I have considered it. The likelihood of that modeling be, being underestimated, in my judgment, is extremely low.
Q But the EPA says in this section, 9.1.3, that it's desirable to quantify the accuracy or uncertainty. Have you quantified it in your rebuttal report?
A Well, I just quantified it in my testimony. My report does not show uncertainty.
Q Okay. Does the 50 percent to a factor of two that you just referenced, does that apply to the ozone limiting method?
A That's a general statement. I don't -- EPA will not typically have error bounds, typical error bounds for each way you can apply the model. Is there a general rule of thumb? My experience in doing model performance work, usually on a long-term basis or a distributional basis, plus or minus 50 percent is typical with well-defined emissions, which in this case we do have.
MR. GROSSMAN: I just want to understand that a little bit better. You're saying that it's accepted that the accuracy factor for AERMOD is plus or minus 50 percent?
THE WITNESS: It is, because the situation, the situation is, if you have a program that's workable, like, from EPA's point of view or MDE's point of view, you really

need to have a bright line. You really couldn't administer the program otherwise. And in the context of this application, we know from available measured NO2 data, for example, which we're talking about here, we know what kind of levels they're seeing in areas that would be especially much more affected than here.

So by looking at that information, as I testified last time, you can conclude that, you know, if we're getting an 86 in Richmond or we're getting a 92 in LA down in Las Vegas next to a highway, then 153 in an extreme case, quite confident that this modeling of even 121 I'm showing for NO2 is overstated. And so you have to -- I think you have to use judgment. You consider interpreted available measured data, consider the kind of conservative assumptions that you've made and make a judgment, which I have.

MR. GROSSMAN: Well, but just addressing my specific question here, if you came out with an estimate, using AERMOD, of 100, AERMOD, it's accepted, you're saying, in the scientific community, could be plus or minus 50 percent, meaning the actual predictable value could be 150 or 50?

THE WITNESS: I'd say, no, Mr. Grossman, because basically we're modeling everything but background, right? So we're adding background in at the end.

MR. GROSSMAN: Yes.

THE WITNESS: So if we're looking at Stage III, for example, the modeling is 121. Most of that is background. So approximately 76 micrograms is background. So we're modeling approximately -- we're modeling a total of approximately 45 micrograms; so 50 percent of that would be 22, 23 micrograms. So if you were to scale this up appropriately, it would be going up to, you know, 121 in the --

MR. GROSSMAN: Okay. So you're saying you don't apply that 50 percent factor to the background, which is a monitored measurement --

THE WITNESS: Right.

MR. GROSSMAN: -- but you do apply it to your predicted modeling results minus the background?

THE WITNESS: That'd be how I would make that comparison, yes --

MR. GROSSMAN: Okay.

THE WITNESS: -- because background is not something that you can model. You're not modeling background. You're using a background that's additive to what you've modeled. The uncertainty would just be in the modeling part of it in terms of what EPA is saying, plus or minus 50 percent, as typical. But just to be clear, they don't say, well, we're going to go 50 percent above your number and that'll be your, how we regulate you --

MR. GROSSMAN: No, I understand that, but I'm applying, of course, something different. I agree with you, they have bright lines --

THE WITNESS: Right.

MR. GROSSMAN: -- I just have bright witnesses and bright lawyers and bright opposition and --

BY MS. ROSENFELD:

Q And --

MS. ROSENFELD: I'm sorry. I didn't mean to cut you off.

MR. GROSSMAN: No, you didn't interrupt me. I'm finished.

BY MS. ROSENFELD:

Q In follow-up, can you show me where in the EPA guidance it limits this factor to the background?

A Well, we're only modeling what we're modeling. If --

Q I'm asking you where in the --

A I'm going to give you my --

Q -- guidance.

A -- my answer to that. I don't know if the appendix W --

MS. ROSENFELD: Apologize.

MR. BRANN: Very soothing.

MS. ROSENFELD: Somebody wants my attention.

THE WITNESS: But Appendix W makes statements of model accuracy. I don't think they get into this level of detail, but I'm talking about the model, and it's the modeling's uncertainty. We're not, quote/unquote, modeling background. That's a given. So we're talking about the uncertainty in the transport and dispersion terms in the model itself, and the example I gave, it's, you know, 45 micrograms was being modeled, then added to background. It wouldn't be fair to take the whole number and say 50 percent above and beyond that.

MR. GROSSMAN: I understand. I understand that distinction.

BY MS. ROSENFELD:

Q With respect to the background, though, you are modeling the background. You've selected the hour-by-hour comparative basis. So that is a modeling --

A We're not modeling. We're using available measured data. So, in that context, no, that's not, that's not part of the model treatment. It's added to the model as part of an input to the model, but it's not related to dispersion and transport that's being modeled and as EPA's talking about in Appendix W.

Q In Section 9.1.3b of the same Appendix W, page 68247, it says: In all applications of models, an effort is encouraged to identify the reliability of the model

estimates for that particular area and to determine the magnitude and sources of error associated with the use of the model. Do you see that language?
A I do.
Q When it talks about that particular area, does that mean the geographical area that you're modeling?
A Probably are referring to that, to the area, the geographic area you're modeling. I assume that's what they mean.
Q Did you provide in your rebuttal report, did you identify the reliability of the model estimates for the particular geographic area that you modeled?
A Well, the statement I just made, in terms of the range, would be applicable in my judgment to the area I modeled, to the modeling of the Wheaton gas station, Costco --
Q So that would be the --
A -- Wheaton gas station.
Q -- 50 percent to a factor of two to the emissions that you modeled?
A Correct. I said, on a long-term basis, 50 percent is what I said.
Q I thought I understood you to say that the AERMOD, the plus or minus is a factor of 50 percent to a factor of two.

A In distributional -- on a distributional basis, I'd expect that as well.
Q And what do you mean by --
A On a day-by-day -- if I had to model University and whatever intersection it's connecting to on June 6th, you know, 2009, 1 o'clock in the afternoon, I'm not going to hit that number accurately, but if I have to come up with a distribution over the course of a year, the models work quite well in that context.
So when you ask me what do I expect is going to happen, I expect 50 percent is probably a reasonable estimate, plus or minus, but I'm not saying so much up. I'm saying, in my judgment, this modeling is extremely conservative. We're using a factor, you know, at Stage III, of 50 percent conversion. It's probably more like 10 or five percent conversion in the roadway. So I believe it's quite overstated, and I made that statement relative to the available measured data as well.
MR. GROSSMAN: Let's turn that, that one off.
MS. ROSENFELD: I am. I apologize. It's my daughter. I will shut her down.
MR. GROSSMAN: Well, I didn't say to do that.
MS. ROSENFELD: All caps: CAN YOU GET ME? No. I apologize.
MR. GROSSMAN: Well, if it's any help, we're

approaching 5 o'clock here. So maybe you can get her.
MS. ROSENFELD: Okay. Well, actually, I've got about four or five more questions in this, on this one topic --
MR. GROSSMAN: Okay.
MS. ROSENFELD: -- and then that would be a good time to --
MR. GROSSMAN: All right.
MS. ROSENFELD: -- to wrap up.
BY MS. ROSENFELD:
Q One more section I wanted to go over. Section 9.3.1b of Appendix W says: The analyst is responsible for recognizing and quantifying limitations in the accuracy, precision, and sensitivity of the procedure. Do you see that?
A I do.
Q Is the analyst in this section an EPA analyst, or is it the person conducting the modeling?
A My interpretation, it's the person conducting the modeling.
Q Okay. And is the procedure the modeling exercise itself?
A I assume it's referring to the modeling procedure that's been employed.
Q Can you show me where in the rebuttal report you

recognized and quantified the limitations and the sensitivity of your analysis?
A I think I've answered these questions before. I mean, I'll say it again that the modeling that we've done is typical, like for, as for a permit. You do not put error bounds and descriptions like this into the report itself. I just made a statement that I'll stand behind, using NO2 as an example of how I could interpret that uncertainty, but this statement doesn't imply that if you looked at a permit for any industrial facility in Maryland, you're going to go and find an uncertainty analysis in that permit. It's not, it's not done. It's not a standard procedure, and I'm following what were standard procedures as if I was doing modeling for regulatory agency --
Q Okay.
A -- with the exception, we don't have the luxury --
Q I'm not trying to be repetitive. I'm going through the guidelines to see how you think they should be applied. The third sentence in that same section, 9.1.3b, reads: Information that might be useful to the decision-maker in recognizing the seriousness of potential air quality violations includes such model accuracy estimates as accuracy of peak predictions, bias, noise, correlation, frequency distribution, spatial extent of high concentration, et cetera. And this says that this is

information that might be useful to the decision-maker, which in this case would be, of course, ultimately the Board of Appeals. Where in the rebuttal report do you discuss the accuracy of your modeling estimates with respect to peak predictions?

A We can go through these one at a time, but you know, no applied model can do all these things you're asking for. You have to refer back to the validation of AERMOD. Just to cut to the chase, for example, how can we show comparison to measured values? We don't have, we don't have, you know, years' worth of data to make comparisons. We're running an applied model the way they're applied for permits all across the country. You can't do all these steps.

Q I'm confused. I thought you said that you were working with actual data from the monitors so that you're not using hypotheticals, you are using real data. Am I --

A Well, I am, but the question, the analyst is responsible for recognizing and quantifying limitations in the accuracy, I've talked about that, precision and sensitivity of the procedure. Information that might be useful to the decision-maker in recognizing -- well, it goes on and on -- model accuracy, includes model accuracy estimates, which I just stated, and accuracy of peak conditions, which I stated; bias, noise, correlation, you

have to have measured data to do that. You'd have to have a lot of measured data to do that. We can't do that. Bias, noise, correlation, frequency distribution, we have -- the model does create frequency distribution to determine the compliance, but no, we have determined spatial extent of high concentrations, but you cannot do all these steps in an applied model.

MS. ROSENFELD: Okay. I have no further questions at this moment. I will be back on Monday.

MR. GROSSMAN: You'll think of more?

THE WITNESS: She said she had no further questions.

MR. GROSSMAN: I heard it too.

MR. COLE: She qualified it.

MR. GROSSMAN: All right. So we will return here at 9:30 on Monday morning the 12th for the conclusion of Mr. Sullivan's cross-examination on his rebuttal. Thank you all. We're adjourned. I'll see you on Monday. Have a good weekend.

(Whereupon, at 5:01 p.m., the hearing was adjourned.)

C E R T I F I C A T E

DEPOSITION SERVICES, INC., hereby certifies that the attached pages represent an accurate transcript of the electronic sound recording of the proceedings before the Office of Zoning and Administrative Hearings for Montgomery County in the matter of:

Petition of Costco Wholesale Corporation
Special Exception No. S-2863
OZAH No. 13-12

By:

Wendy Campos, Transcriber

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