

I N D E X

PRESTON ALEXANDER, et al.)
Plaintiffs,
vs. Cause No. 052-9567
FLUOR CORPORATION, et al.)
Defendants.)

JIM TARR
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TRANSCRIPT OF PROCEEDINGS
MAY 27, 2011 - AFTERNOON SESSION

Testimony of Mr. Jim Tarr

GERSON SMOGER, MARK BRONSON, JAMES DOWD, STEVEN BRONSON
on behalf of the Plaintiffs;

JOHN QUINN, SCOTT KOZAK, THOMAS OTT, LISA WOOD
on behalf of the Defendants.

CAROL A. VAGEN, RPR, CCR
OFFICIAL COURT REPORTER
TWENTY SECOND JUDICIAL CIRCUIT
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3
1 (The following proceedings were had on Friday,
2 May 27, 2011, in the presence of the jury.)
3 THE COURT: Thank you. We're on the record.
4 Mr. Smoger, would you announce the
5 plaintiff's next witness.
6 MR. SMOGER: Yes, sir. Next witness will be
7 Jim Tarr.
8 THE COURT: Mr. Tarr, sir, will you step up,
9 please. You have the spelling, don't you, Carol?
10 THE REPORTER: Yes, sir.
11 THE COURT: Sir, would you raise your right
12 hand.
13 **JIM TARR,**
14 having been sworn, testified:
15 **DIRECT EXAMINATION**
16 THE COURT: Have a seat, Mr. Tarr. Do you
17 have some water?
18 THE WITNESS: Yes, sir, I do. Thank you.
19 THE COURT: You're welcome.
20 BY MR. SMOGER
21 Q. Would you state your name, please, for the
22 record.
23 A. Jim Tarr.
24 Q. And what is your specialty?
25 A. Air pollution control evaluations, mainly

4
1 related to toxic chemical exposures in neighborhoods
2 around industrial facilities.
3 Q. You do air modeling?
4 A. I do a lot of air dispersion modeling, yes,
5 sir.
6 Q. And you evaluate exposures to air?
7 A. Mostly define exposures to toxic air
8 pollution.
9 Q. Better stated than I just did. You have
10 your own corporation?
11 A. Yes, sir.
12 Q. What is that?
13 A. The name of the company is Stone Lions,
14 Environmental Corporation.
15 Q. And how long have you had that corporation?
16 A. Since April 1993.
17 Q. Before that you had another company called
18 Toxcon?
19 A. Toxcon Engineering Company, Inc.
20 Q. And how long did you have that?
21 A. From February 1, 1978 through November 15,
22 1990.
23 Q. And what, in the 1970s, what did you do
24 before you started your own corporation at Toxcon?
25 A. My main job was, inspecting air pollution at

1 least, was with an air pollution control regulatory
 2 agency in the state of Texas that at the time --
 3 well, the name changed several times over the years,
 4 but the name that's mostly known is the Texas Air
 5 Control Board.
 6 Q. How long were you working at the Texas Air
 7 Control Board?
 8 A. From May 5, 1972, to the last day of
 9 January 1978.
 10 Q. What degrees do you have?
 11 A. I have two degrees in chemical engineering,
 12 one from the University of Texas, which I received in
 13 1969, and one from the University of Houston that I
 14 received in August 1976.
 15 Q. Do you have a license?
 16 A. I'm a professional -- I have a professional
 17 engineering license issued by the state of Texas.
 18 Q. And what are certifications?
 19 A. I suppose the primary one, I'm a member of
 20 the American Academy of Environment Engineers, with a
 21 specialty in Air Pollution Control.
 22 Q. How was the barbecue at lunch?
 23 A. I need to eat all my barbecue in Texas, I'm
 24 afraid.
 25 THE COURT: And where do your loyalties lie,

1 A. Yes, sir. With regard to the lead smelter,
 2 specifically.
 3 Q. You've had an opportunity to visit the
 4 smelter?
 5 A. Yes, I have.
 6 Q. Now, can you tell me what the Clean Air Act
 7 is?
 8 A. The Clean Air Act, federal Clean Air Act is
 9 a law adopted by the congress of the United States in
 10 1970 which set up the mechanism whereby air pollution
 11 control is addressed and controlled in the United
 12 States, and then there's certain sections of that law
 13 that relate to improving air quality in the United
 14 States.
 15 Q. We've been tossing around something called
 16 the National Ambient Air Quality Standards. What are
 17 National Ambient Air Quality Standards?
 18 A. National Ambient Air Quality Standards
 19 basically are regulatory limits set to minimize the
 20 public exposure to certain kinds of toxic air
 21 pollutants, specifically those kind of toxic air
 22 pollutants that are, one, dangerous, and, two,
 23 present in many places in the United States.
 24 Q. Was such a standard set up in around 1978
 25 for lead?

1 with the Cougars on the Longhorns?
 2 THE WITNESS: If it's basketball, I love the
 3 Cougars. They have had some great teams. Phi Slama
 4 Jama.
 5 BY MR. SMOGER
 6 Q. Now, you are a Diplomate of the American
 7 Academy of Environmental Engineers?
 8 A. Yes, sir.
 9 Q. What's that?
 10 A. That's a group of environmental engineers in
 11 the United States that have extensive experience --
 12 excuse me, extensive professional experience in a
 13 variety of engineering fields, air pollution control
 14 being one of them.
 15 Q. Let me show you, let me show you
 16 Exhibit 375. Is that a copy of your resume?
 17 A. Yes, sir, it is.
 18 MR. SMOGER: I ask that Exhibit 375 be
 19 admitted into evidence.
 20 MR. QUINN: No objection, Your Honor.
 21 THE COURT: It will be admitted. Thank you.
 22 BY MR. SMOGER
 23 Q. Now, you had an opportunity -- you've
 24 evaluated various items related to air issues in
 25 Herculaneum?

1 A. There was a lead NAAQS, as we call it, the
 2 acronym for lead that was established in 1978, yes.
 3 Q. EPA established a number?
 4 A. U.S. EPA did, yes, sir.
 5 Q. And this would be in the late '70s, what
 6 number was established?
 7 A. 1.5. Well, the concentration was, for the
 8 land standard was 1.5 micrograms per cubic meter
 9 averaged over a three month period.
 10 Q. What does that mean?
 11 A. Well, when you're talking about air
 12 pollution concentrations, you have to take into
 13 account the averaging time or length of time you're
 14 concerned with when you're talking about that
 15 concentration.
 16 And you can think of that as a requirement
 17 that tries to address the fact that wind direction
 18 and wind speed changes very often. So sometimes if
 19 you happen to live downwind of an air pollution
 20 source, the wind may be blowing from the source to
 21 you and you're going to be subject to breathing that
 22 air contamination. If the wind is blowing from your
 23 house to the source, you're not going to be breathing
 24 it.
 25 So if a standard concentration is of

1 interest, you have to average it over a specified
 2 time and for lead that specified time was chosen to
 3 be three months, so a quarterly average.
 4 Q. So that means that you take every three
 5 months and average the result and come up with a
 6 number?
 7 A. That means if you're going to evaluate the
 8 situation with respect to the standard, you have to
 9 take air samples over the three month period, average
 10 those results together, and compare that number with
 11 the 1.5-microgram per cubic meter concentration,
 12 which the standard expresses.
 13 Q. Does that mean to comply with the standard
 14 over the three month period you have to be below 1.5?
 15 A. That's correct.
 16 Q. What is 1.5. What is that?
 17 A. 1.5?
 18 Q. Yeah. What does it mean?
 19 A. It's a value that was set under the National
 20 Ambient Air Quality Standard and the federal Clean
 21 Air Act for the purpose of protecting the health of
 22 the most vulnerable part of the population with
 23 respect to lead exposure, i.e., children in this
 24 case.
 25 Q. Can you just take a different thing other

1 Q. Now, how -- one of the things you mentioned
 2 is in order to find this out you have to average
 3 what's at a monitor?
 4 A. Yes. Take samples and arrive at a
 5 concentration.
 6 Q. And you take samples where?
 7 A. Well, it's depending on what you're trying
 8 to do. But the primary objective is to take samples
 9 of ambient air, analyze it for lead, and those places
 10 where the highest concentration is expected to be in
 11 order to determine whether or not the lead standard
 12 is met at that particular area.
 13 Q. That would include all lead that comes into
 14 the air. We've heard about slag piles. If lead is
 15 blowing off the slag pile, is that part of what is in
 16 the air that the monitor looks at?
 17 A. Certainly, if you're interested in ambient
 18 air concentration of lead around a slag pile, or
 19 excuse me, around an entity that emits lead into the
 20 air, and part of that operation contains slag piles
 21 that's contaminated with lead, then the lead that
 22 showed up in your monitor, if you put it in the right
 23 place, part of it would probably come from the slag
 24 pile.
 25 Q. Now, how do monitors work? Do you need to

1 than three months, do it for a year, two years, do
 2 you have to do it in a three month period, is that
 3 what the regulations say?
 4 A. That's correct. An average is not
 5 meaningful with respect to the standard unless it's a
 6 three month average.
 7 Q. Now, the question is not just what's in the
 8 air, when lead is in the air around a smelter, what
 9 happens to that lead, what happens to the air in the
 10 lead?
 11 A. I don't understand the question.
 12 Q. What happens to the lead in the air?
 13 A. The lead in the air either travels to --
 14 first of all, it originates at the source or the
 15 point in the facility that is utilizing lead or
 16 manufacturing lead or somehow emitting lead into the
 17 atmosphere.
 18 From there the lead disburse into the
 19 environment through, as it gets blown downwind by the
 20 wind, and depending upon the size of the lead
 21 particle in the atmosphere, some of it falls to the
 22 ground, some of it continues to be blown downwind.
 23 Theoretically, at least, all of it is
 24 eventually going to fall to the ground at some point
 25 in time.

1 show --
 2 A. I think Steve and I talked about a box. If
 3 you can give me that empty box, I can explain how one
 4 works. Thank you. It's easier if I can stand up.
 5 THE COURT: Go right ahead, as long as
 6 you're loud and clear without the mike.
 7 MR. QUINN: Your Honor, do you mind if I
 8 stand up here?
 9 THE COURT: No. Come on. The more the
 10 merrier.
 11 A. So we'll take an ambient air sample and
 12 analyze that sample for lead content. And as I made
 13 clear earlier, the lead in air, most of the time,
 14 exists as a solid, which we call particulate matter.
 15 So what we're actually going to do first is
 16 we're going to pass a sample of air where the monitor
 17 sits through a filter so that we can collect the
 18 particulate matter on to the filter we're going to
 19 transport the filter back to the laboratory where it
 20 gets analyzed for the actual lead content.
 21 The device that's used to collect these
 22 particulate matter samples is known as a high volume
 23 air sampler, and you can think of it as a box, much
 24 like this box. It would actually be a little taller
 25 or bigger than this, but consider this to be a box.

1 We're going to put in the box a filter.
 2 Close the box. We have a motor down at the bottom of
 3 the high volume sampler that draws air through
 4 openings in the box, like these.
 5 So the air is drawn through the box, goes
 6 through the filter, the filter takes the particulate
 7 matter out of the air that's drawn through the box
 8 for 24 hours.
 9 We come back 24 hours later, collect the
 10 filter, take it to the chemical laboratory, and
 11 figure out how much lead is on that filter.
 12 We actually measure the amount of air that
 13 passed through the box, so we know the lead amount,
 14 we know the air amount, we can calculate the
 15 concentration and compare that with the ambient air
 16 quality standard, the 1.5 micrograms per cubic
 17 measure. It's one of the simplest monitoring devices
 18 in the world.
 19 MR. SMOGER: Thank you.
 20 MR. QUINN: Thank you, Judge.
 21 BY MR. SMOGER
 22 Q. Hard for it to work?
 23 A. No.
 24 Q. Let me show you what's been marked as
 25 Exhibit 57.

1 Q. I discussed this with Mr. Lanzafame. There
 2 is a few things and then we'll go to other things.
 3 I'm curious. It says 1993 and they said, "In this
 4 document report a monitor downtime of 21.9 percent.
 5 What does that mean?
 6 A. It means, I take it to mean that within --
 7 first of all, let me go back to the normal schedule.
 8 Collecting ambient air samples to analyze for lead,
 9 compare it with the standard.
 10 Typically, samples are collected once every
 11 six days for a 24 hour period. I take this to mean
 12 that during the last quarter of 1992, 21 percent of
 13 the time that they should have been collecting a
 14 sample at this particular monitor, they weren't
 15 collecting that sample, for some reason that's not
 16 spelled out here, and I have no idea why, but they
 17 simply weren't doing what they were supposed to be
 18 doing.
 19 Q. How does a monitor go down?
 20 A. The only thing that comes to mind that would
 21 be, need to be guarded against with regard to this --
 22 excuse me -- concerning this particular kind of
 23 monitor would be an electrical failure, for example.
 24 If you don't have electricity to run the
 25 motor, to run the blower, you can't get air through

1 MR. QUINN: Your Honor, we don't have a
 2 copy, but it's already in evidence. We'll try to
 3 scramble through.
 4 THE COURT: Okay. I understand.
 5 MR. SMOGER: Here it is.
 6 MR. QUINN: Miraculously. Thanks.
 7 MR. SMOGER: Sorry.
 8 BY MR. SMOGER
 9 Q. I'm told just in case --
 10 MR. SMOGER: I move Exhibit 57 into
 11 evidence, though I'm sure we discussed this with
 12 Mr. Lanzafame.
 13 THE COURT: That's what you've shown to
 14 Mr. Tarr is Plaintiff's Exhibit 57, correct?
 15 MR. SMOGER: Yes.
 16 THE COURT: Any objection?
 17 MR. QUINN: I think it's already in,
 18 Your Honor.
 19 MR. SMOGER: I'm pretty sure, but I'm being
 20 told by that somebody else that isn't, so I'm making
 21 sure.
 22 THE COURT: Making sure. It's admitted,
 23 maybe again.
 24 MR. QUINN: No objection.
 25 BY MR. SMOGER

1 the filter is about the only thing I can think of.
 2 Q. Pretty surprising for that to happen
 3 21 percent of the time?
 4 A. Yes. I would consider that unusual.
 5 Q. Now, there's something else in there I want
 6 to go into, the what actually was being monitored.
 7 Exhibit 269, which has already been introduced into
 8 evidence. Exhibit 269 is an what we've all called
 9 here an AFE, or Authorization for Expenditure.
 10 It talks about installing a portable met
 11 station and data logger to give better met data to
 12 help correlate where impacted sampler is originating
 13 within from within the plant. What is a portable met
 14 station?
 15 A. Generally speaking, that would mean a device
 16 or devices that were installed for the purpose of
 17 measuring wind speed and wind direction, and probably
 18 temperature, and maybe rain fall amount.
 19 Q. Unusual to use the local meteorological
 20 station to find, in 1992, to find out where the wind
 21 is coming and to find out those kind of details?
 22 A. No. It's not unusual. In fact it's very
 23 important in that to really and truly understand
 24 ambient air monitoring results from collecting
 25 samples in the atmosphere, it's really important to

1 understand which direction the wind was blowing from
2 and what the wind speed was during the course of time
3 that the sampler was on.

4 It's a really important thing and is very
5 valuable information, makes the sampling results more
6 meaningful.

7 Q. Is this something just invented in 1992?

8 A. No, sir.

9 Q. How long have they had these portable
10 meteorological stations?

11 A. I have no idea, but it's far from new
12 technology. I don't really know. I mean, when you
13 think about it, most airports in the United States
14 have a lot of meteorological needs and they do a lot
15 of measurement of air spend -- excuse me, wind speed,
16 wind direction.

17 That's probably where they became most
18 useful earliest in the history of the United States,
19 I suppose. I don't know when they first installed
20 them.

21 Q. Were they around in the 1980s?

22 A. Yes, certainly.

23 Q. Late '70s?

24 A. In all probability, yes.

25 Q. Before 1992, what was the smelter using to

1 gauge where all the wind directions were going?

2 A. In terms of their air dispersion modeling?

3 Q. In terms of how were they figuring that out.

4 A. As best I can determine, they were utilizing
5 wind speed and wind direction information collected
6 at the St. Louis airport.

7 Q. Is that a pretty good source, to use the
8 St. Louis airport to figure out what's going on right
9 there in town, miles and miles away?

10 A. From my prospective it makes no sense
11 whatsoever, given what they were doing with the data.

12 Q. Now let me ask you, what's the difference.
13 We've heard about stack emissions and fugitive
14 emissions. What's the difference between stack
15 emissions and fugitive emissions?

16 A. All right. In the air pollution control
17 world, there are a lot of different kinds of sources,
18 as we call them, that put toxic chemicals in the
19 atmosphere.

20 We, over time, we divided up those sources
21 into different categories. Two of those categories
22 are known as point sources and fugitive sources.

23 A point source is a general term that refers
24 to things like stacks, chimneys, ducts, where toxic
25 chemicals are gathered together and put through some

1 physical device to get them out of the way of the
2 process that they originated at and discharge them
3 into the atmosphere.

4 Fugitive emissions, on the other hand, are a
5 kind of air pollution that is discharged from a
6 facility through something other than a stack or a
7 chimney or a duct. It might come out of a window, it
8 might come out of a door, it might come out of an
9 opening designed into the roof of the building.

10 From what I call an engineering prospective,
11 those two kinds of sources also cause the air
12 emissions to disperse into the surrounding
13 neighborhood in a different way.

14 The point sources tend to be directed in an
15 upward direction, so they have a velocity to go
16 straight out of the stack. When the wind catches
17 those, they blow them downwind.

18 The fugitive -- one more thing about the
19 point sources. The elevation of the stack where the
20 toxic chemicals enter the atmosphere tends to be
21 high, hundreds of feet.

22 Fugitive sources, number one, don't have a
23 velocity in a vertical direction. Number two, they
24 generally originate in a small height above the
25 ground, often measures in tens of feet instead of

1 hundreds of feet.

2 Without the height and the velocity, the
3 impact of the fugitive sources tends to be much
4 closer to the facility than the impact of air
5 emissions out of a tall stack.

6 Q. Where are the fugitive emissions likely to
7 be highest --

8 A. Well --

9 Q. -- outside of the facility?

10 A. Once the fugitive emissions get in the
11 atmosphere, given they are emitted from a relatively
12 low height above the ground, given they don't have a
13 vertical velocity into the atmosphere, the maximum
14 concentration created by the fugitive emission is
15 probably going to be relatively close to a source,
16 that is to say the facility from which the emissions
17 came, compared with emissions out of the stack, where
18 the maximum concentration tends to be further
19 downwind and further away.

20 Q. Now you're aware that closest monitor to the
21 smelter itself is the monitor on top of the high
22 school about a half mile away?

23 A. Is or was?

24 Q. Was. Let me say in the 1980s, in the 1980s,
25 what is the closest official monitor that was

1 reporting data to the plant?
 2 A. Okay. I believe that -- I need to look at a
 3 diagram for a second.
 4 Q. Sure.
 5 MR. QUINN: Could you tell us what he's
 6 looking at, please?
 7 MR. SMOGER: It's a map.
 8 MR. QUINN: I understand that. There's
 9 notes, too.
 10 MR. SMOGER: It's just a map.
 11 MR. QUINN: I understand.
 12 THE COURT: What's the matter?
 13 MR. SMOGER: He wants to see what Mr. Tarr
 14 is looking at.
 15 MR. QUINN: As soon as he finished.
 16 MR. SMOGER: I said when Mr. Tarr is
 17 finished with it, that is perfectly fine.
 18 A. The official monitor, with regard to SIP
 19 developments, certainly, appears to be the monitors
 20 at the high school in Herculaneum.
 21 THE COURT: Show him.
 22 MR. QUINN: He was looking at that other
 23 page, there.
 24 MR. SMOGER: No, this is it.
 25 MR. QUINN: He was looking at all three.

1 at. Would it be easier to show on a large map where
 2 the monitors were?
 3 A. Well --
 4 Q. Or here?
 5 A. This is sort of hard. I have the list of
 6 numbers, so I think I can figure it out.
 7 Q. Do you want to show it on the large map?
 8 A. Sure, why not. That's helpful.
 9 Q. Jim --
 10 MR. SMOGER: Your Honor, may the witness
 11 approach the map?
 12 THE COURT: Yes, you may, Mr. Tarr. Please,
 13 loud and clear so the court reporter can hear you,
 14 all right?
 15 THE WITNESS: Yes, sir.
 16 THE COURT: Appreciate it.
 17 BY MR. SMOGER
 18 Q. Can you show where the high school monitor,
 19 the first one we were talking about, is?
 20 A. First I'll show it on the screen. That is
 21 the high school monitor right there, number 5.
 22 Q. Just show them there.
 23 A. This, I believe, is the high school.
 24 MR. QUINN: Mr. Tarr, you probably need to
 25 move.

1 The other two, Gerson. All three of them. Just show
 2 me all of them.
 3 MR. SMOGER: He's only looking at this.
 4 MR. QUINN: I know. He brought those to the
 5 stand. Let me just see it. Thank you. Thank you.
 6 BY MR. SMOGER
 7 Q. Can I steal this from you and put it into
 8 evidence?
 9 A. I sure would like a copy at some point.
 10 MR. QUINN: As would I.
 11 BY MR. SMOGER
 12 Q. I was just having you look at it now. We
 13 talked about it --
 14 A. That's okay. You may have it. You're
 15 welcome to have it.
 16 Q. Might as well let everybody see it. I'll
 17 give you these two back.
 18 MR. SMOGER: This is Exhibit 399. It's a
 19 map and I move Exhibit 399 into evidence.
 20 MR. QUINN: That's fine, Your Honor, as long
 21 as I can get a copy.
 22 THE COURT: We'll make copies. It will be
 23 admitted. Thank you.
 24 BY MR. SMOGER
 25 Q. Just so everybody sees what you're looking

1 THE WITNESS: All right.
 2 THE COURT: Are you ready for this?
 3 MR. SMOGER: No, but I need to approach.
 4 THE COURT: All right.
 5 (Proceedings were had at the bench out of the
 6 hearing of the jury)
 7 MR. SMOGER: Just for clarification, I
 8 didn't know he had the map. I just looked at the
 9 map. We're not introducing it into evidence.
 10 I have just taken it down because it had
 11 monitoring stations that didn't exist at the time.
 12 There's two of them, the jury doesn't know it, but
 13 there's two that were put up later. We have not
 14 mentioned it or said anything about it. I won't show
 15 that map again.
 16 THE COURT: That's a map after '94?
 17 MR. SMOGER: Correct. It has two triangles.
 18 The jury won't know what those were. I won't refer
 19 to that map again. I saw there were two stations put
 20 in after --
 21 MR. QUINN: As long as I get a copy of the
 22 map.
 23 THE COURT: That's fine. You get a copy of
 24 the map. He will mark things on the big map?
 25 MR. SMOGER: He will just point them out on

1 the big map. He might refer to this, but this
 2 shouldn't be in evidence and I won't ask him --
 3 THE COURT: Okay.
 4 MR. QUINN: Just withdraw that. You already
 5 admitted it, you have need to withdraw.
 6 MR. SMOGER: I'll withdraw that.
 7 THE COURT: That was Plaintiffs' Exhibit?
 8 MR. QUINN: 399.
 9 THE COURT: 399 is withdrawn.
 10 (The following proceedings were had in the
 11 presence of the jury:)
 12 MR. QUINN: I have to stand behind you.
 13 A. Is there a pending question?
 14 BY MR. SMOGER
 15 Q. Just where is the high school monitor?
 16 A. Okay. First of all, let me point out where
 17 the smelter is, which is right down here. This is
 18 the Mississippi River and to the right is north.
 19 Okay. The high school monitor is right in this area.
 20 Q. That's about a half mile from the facility?
 21 A. I believe that's approximately correct.
 22 Q. There's another monitor at the golf course?
 23 A. Yes.
 24 Q. Where is that?
 25 A. Do you want to show it on the screen first?

1 monitor. I believe it's right on the edge of this
 2 photograph here in this area.
 3 Q. What you see is the monitors are spread all
 4 the way over this distance, and there's a close one
 5 at the high school, and of all these monitors, is
 6 there any monitor that is what they call at fence
 7 line, after the smelter property ends and right where
 8 the community begins, was there any official
 9 operating monitor in that location at any time in the
 10 1980s?
 11 A. Official, no, not as far as I know.
 12 Q. That monitor, if it had been in place, would
 13 be a monitor that would get the most fugitive
 14 emissions in terms of figuring out what those loads
 15 are?
 16 A. Consistent with wind speed and wind
 17 direction, that's correct.
 18 Q. And one of the things we're looking for in
 19 trying to comply with the national ambient air
 20 standard is something called maximum concentration?
 21 A. Well, in a sense in that the National
 22 Ambient Air Quality Standard for lead, applies to
 23 lead in the ambient air anywhere in the United States
 24 outside of property lines, that is to say industrial
 25 source property lines.

1 Q. No. Just estimate from where it is based on
 2 this map.
 3 A. Right over here, I believe.
 4 THE COURT: Is it on the front nine or back
 5 nine?
 6 MR. QUINN: You have to play it twice, it's
 7 only nine holes.
 8 BY MR. SMOGER
 9 Q. There's another monitor called Ursuline?
 10 A. Yes. It's at St. Joseph's Ursuline
 11 Novitiate.
 12 Q. It's outside the map?
 13 A. If you hide yourself, I'll show it. It's
 14 south of the smelter, over off the photograph.
 15 MR. QUINN: I think I see it right there.
 16 BY MR. SMOGER
 17 Q. There was a monitor at something called
 18 Rutz --
 19 THE COURT: R U T Z, I believe. Rutz home.
 20 MR. SMOGER: Yes.
 21 BY MR. SMOGER
 22 Q. Or Bluff?
 23 A. Yes, sir. Right over in this area.
 24 Q. Is there a monitor at north?
 25 A. Far north, yes, sometimes called the Dau

1 Q. So is one of the things that you're looking
 2 for where the maximum concentration would be outside
 3 of the smelter's property line?
 4 A. If you're concerned about the lead NAAQS and
 5 you're concerned about complying with it, you must
 6 find where the maximum ambient air concentration is
 7 in order to do what needs to be done to be in legal
 8 compliance with the regulation.
 9 Q. You can sit down. Now the maximum air
 10 concentrations for fugitives, and were they likely to
 11 be somewhere across from some of the -- would they
 12 likely be somewhere near the fence line across from
 13 process equipment or some place the fugitives will be
 14 created?
 15 A. Okay. If I didn't know anything, if someone
 16 asked me to go to an industrial facility and figure
 17 out where the maximum concentration of toxic chemical
 18 emissions out of that facility is, assuming that
 19 those emissions enter into the atmosphere as a
 20 fugitive source, I would go to the fence line first
 21 and move away gradually if I didn't find the maximum
 22 exactly at the fence line.
 23 Q. That's the first place you look?
 24 A. Yes, sir.
 25 Q. If you wanted to comply, it's the first

1 place you look?
 2 A. If I wanted to find the maximum, it
 3 certainly is.
 4 Q. You have to comply at the maximum place,
 5 right?
 6 A. Yes.
 7 Q. You don't have to comply -- you have to
 8 comply everywhere. They don't say, look at the
 9 minimum. If you're complying everywhere, you look at
 10 where it's going to be maximum?
 11 A. Well, you look at everywhere, but what
 12 you're ultimately trying to find is the maximum
 13 ambient air concentration to figure out how to modify
 14 your facility to make things better for your
 15 neighbors.
 16 Q. Let me show you what's been marked as
 17 Exhibit 50.
 18 MR. SMOGER: If you need an extra copy I
 19 have one.
 20 MR. QUINN: I'm fine.
 21 MR. SMOGER: Okay.
 22 BY MR. SMOGER
 23 Q. Exhibit 50 has already been shown with
 24 Mr. Vornberg's testimony.
 25 "Nikkila asked me if we would be willing to

1 ambient air monitor, at the place where he believed
 2 the maximum ambient air concentration is going to
 3 occur.
 4 Mr. Vornberg doesn't want to do that and
 5 it's my view that the reason he doesn't want to do
 6 that is he wants to obscure or hide the truth of the
 7 matter.
 8 MR. QUINN: Your Honor, now he's going
 9 beyond reading the document. The document says what
 10 it says and the jury can decide what it is.
 11 MR. SMOGER: He is giving his opinion.
 12 MR. QUINN: I understand he's a believer.
 13 MR. SMOGER: No, he's giving his opinion.
 14 THE COURT: Overruled. You may proceed,
 15 Mr. Tarr.
 16 A. Could I have the last sentence read back
 17 please.
 18 BY MR. SMOGER
 19 Q. The last sentence --
 20 A. No. I'm trying to pick up where I finished
 21 when I stopped.
 22 (Answer read by reporter.)
 23 A. With respect to potential harm being done to
 24 his neighbors.
 25 Q. Now let me show you Exhibit 51.

1 place a station just northwest of the plant. I
 2 indicated," this is the second paragraph, "that part
 3 of our reason, in fact our major reason for not
 4 wanting to have a public record of any data well
 5 above the standard, might be the liability and the
 6 possibility of community legal action. I have
 7 indicated that other smelters had been severely
 8 hampered in diverting their environmental resources
 9 to legal action and their pollution control money
 10 into civil settlements as opposed to pollution
 11 control."
 12 What is your understanding of what
 13 Mr. Vornberg, as an expert in air, what is your
 14 understanding of what was being wanted by Nikkila and
 15 what Mr. Vornberg is describing?
 16 MR. QUINN: Your Honor, I'm not sure he can
 17 provide an opinion on that, his expertise is in
 18 air --
 19 THE COURT: I think Mr. Tarr can read the
 20 pertinent language and make his own assessment of
 21 what that means. Overruled. You may do so, sir.
 22 A. Mr. Nikkila is the Air Program Staff
 23 Director of the Missouri Air Pollution Control
 24 Department, apparently. So he's requesting the
 25 company to place a monitor at the place where he, an

1 MR. SMOGER: Do you have Exhibit 51? It's
 2 already admitted into evidence.
 3 BY MR. SMOGER
 4 Q. Exhibit 51, also from Mr. Vornberg, and he
 5 says, "Because it was necessary to discuss our
 6 concerns about a northwest station, environmental
 7 building, or city hall," and then he later says, "As
 8 you know, data on the environmental building within
 9 the last year is unacceptable."
 10 So is this again about this northwest
 11 monitor that would be across the street from the
 12 plant that he's writing about, or at the
 13 environmental building?
 14 A. Yes, I believe it is and I think it's,
 15 again, a reflex of -- or relates to avoiding ambient
 16 air sample collection at a point where the maximum
 17 concentration would be as a result of the fugitive
 18 emissions out of the plant.
 19 Q. Here he indicates that he knows what those
 20 emissions are likely to be, because he says that, "As
 21 you know, data on the environmental building within
 22 the last year is unacceptable?"
 23 A. Yes. He appears to be -- or have knowledge
 24 of samples that had been collected and analyzed for
 25 lead.

1 Q. Do you know that he's already testified, you
2 might not know, Mr. Vornberg testified, even though
3 they had this data, they never shared this data with
4 either the state or the federal government?
5 A. Do I know that?
6 Q. I'm representing, did you know that he
7 testified in this court that even though they had the
8 data, they never shared that data with either the
9 state or the federal government?
10 A. Yes. I believe I read that testimony.
11 Q. Is that appropriate?
12 A. No, sir, it's not.
13 Q. Should they, in your opinion, have shared
14 all the data they had with the state and the federal
15 government?
16 A. Apparently not.
17 Q. Should they have?
18 A. Should they have?
19 Q. Yes.
20 A. Absolutely. Positively.
21 Q. Now, I'll read you a quote from
22 Mr. Lanzafame. Actually, it's a question that
23 Mr. Quinn asked Mr. Lanzafame and Mr. Quinn asked a
24 question: "Was it your understanding, sir, that if
25 the company complied with the SIP process established

1 fence line?
2 A. For this particular smelter?
3 Q. Yeah. What do they mean by the fence line?
4 A. The fence line is a boundary between the
5 property of the facility, i.e., the smelter, and the
6 public property, neighborhood, public street, those
7 kinds of things.
8 Q. Would this environmental building monitor be
9 closer to the fence line than any other monitor they
10 had?
11 A. Well, certainly any other one that's in the
12 information provided to the state of Missouri, I
13 believe it is, yes.
14 Q. So they say, so Mr. Vornberg writes in 1985,
15 "That the U.S. EPA lead standard requires community
16 air lead levels at the fence line of smelters or
17 other lead sources to be lowered to 1.5. This level
18 is to be achieved in our case by April 1986. It is
19 unlikely that we can meet it then or at any time
20 under the current regulations."
21 What's your understanding of what he's
22 saying, what Mr. Vornberg is writing there?
23 A. I believe he's made a realistic assessment
24 of his situation.
25 Q. Is he saying that he knows they will not now

1 and agreed to by the state, that you were in
2 compliance with the law, even if there were some
3 exceedances above the 1.5?" And Mr. Lanzafame
4 answered, "That's my understanding of the process."
5 Is that correct?
6 A. No, that's not correct.
7 Q. Are you in compliance -- does the ambient --
8 are you allowed -- are you in compliance with 1.5 and
9 just have some exceedances here and there, is that
10 compliance with 1.5?
11 A. No, it's not. Let me add that --
12 Q. Yes.
13 A. -- if those exceedances are quarterly
14 averages.
15 Q. Now let's get back to the issue of this
16 monitor. We'll discuss the issue of this northwest
17 monitor and show Exhibit 10. Now we are up to
18 September 13th, 1985.
19 MR. SMOGER: Do you have Exhibit 10? It's
20 he been entered. If you need it, we have a copy.
21 MR. QUINN: Okay.
22 BY MR. SMOGER
23 Q. Now we're in 1985. Number 2 says, "The
24 U.S. EPA lead standard requires community air lead
25 levels at the fence line of smelters." Where is the

1 or ever been in compliance, as far as he knows, if
2 the monitor goes in at the fence line?
3 A. I believe that's a judgment that he made and
4 that's his best judgment with respect to the facts as
5 he understands them.
6 Q. Now, let me show you Exhibit 376.
7 MR. SMOGER: Exhibit 376 is the memo from
8 Dan Vornberg and Jim Lanzafame on December 17, 1986
9 and I move Exhibit 376 into evidence.
10 MR. QUINN: No objection.
11 THE COURT: It's admitted. Thank you.
12 BY MR. SMOGER
13 Q. This is a memo, as you see, dated
14 December 17, 1986, Dan Vornberg and Jim Lanzafame, it
15 says Region VII. What is Region VII?
16 A. That would be the Kansas City office, I
17 believe, of the U.S. Environmental Protection Agency.
18 The way the U.S. EPA is organized, the United States
19 is divided into various sections. Region VII is the
20 section that includes the state of Missouri. That's
21 one of the states that EPA matters are directed to
22 the Kansas City office first and then other places in
23 the EPA if necessary.
24 Q. This memo says, "Region VII has agreed to
25 passively support the DNR proposal to use Dunklin

1 High School as the location for a demonstration of
 2 attainment in spite of the potential modeled maximum
 3 indicated at the old environmental building." This
 4 memo from 1986, what does it tell you in 1986?
 5 A. That neither the company nor the responsible
 6 regulatory agencies are approaching this problem in a
 7 realistic way.
 8 Q. Are they putting -- now they're saying, the
 9 model says the highest levels are going to be at this
 10 environmental building?
 11 A. They are saying that. And I take that to
 12 mean the air dispersion model.
 13 Q. They're saying that's where -- the model
 14 concentration, but they're saying they've actually
 15 got them to agree that they're not going to put one
 16 in there, that they're going to leave the one at the
 17 high school as the closest one?
 18 A. The one which will be used to judge
 19 compliance with the lead NAAQS.
 20 Q. And that one, we know, is about a half mile
 21 away, not at the fence line?
 22 A. Roughly, yes, sir.
 23 Q. Now we're going to April 1987. Let me show
 24 you Exhibit Number 9.
 25 MR. SMOGER: Do you have Exhibit No. 9?

1 1988. On May 20th, 1988, he writes. "I indicated
 2 that I felt we were still adamant about not
 3 installing the fence line monitor until after the
 4 controls were in place. Gene understood that and
 5 offered that this point might be a point of
 6 discussion."
 7 1988 still adamant about putting in a
 8 monitor at the environmental building at the fence
 9 line?
 10 A. Not adamant, I think. Excuse me.
 11 Adamant -- they didn't want to put one in then
 12 either.
 13 Q. Now, let's go to Defendant's Trial
 14 Exhibit 6-L, 1989. Now we are in July of 1989.
 15 There is a letter that defendants have introduced
 16 that says:
 17 "There has been some concern over the last
 18 few months about air lead levels in the community
 19 surrounding the Herculaneum smelter. The standards
 20 are set very conservatively to try and be
 21 overprotective of the health of even the most
 22 sensitive individuals, normally young children." Is
 23 that true, were the standards overprotective?
 24 A. No. That's not what the --
 25 MR. QUINN: Your Honor, I object to whether

1 MR. QUINN: Yes.
 2 BY MR. SMOGER
 3 Q. Exhibit Number 9. Now we're in 1987. It's
 4 talking about negotiate, it says, "Negotiate doable,
 5 affordable SIP which makes community progress." What
 6 is your understanding of that?
 7 A. Number one, they're not developing a SIP for
 8 the purpose of complying with the lead National
 9 Ambient Air Quality Standard.
 10 Number two, they are going to continue to
 11 attempt the to reduce lead emissions from the
 12 facility, to the extent that they can afford to do
 13 so, and they're trying to make progress in lowering
 14 the lead concentration in the community as a result.
 15 Q. Now where they predict the concentration and
 16 where they know the concentration is highest, which
 17 is near the community, right outside the plant, are
 18 they putting in, now in 1987, a monitor there?
 19 A. Well, I don't believe so, but that's -- I
 20 need to point out that I don't think that's reflected
 21 in this document one way or the other.
 22 Q. Well, let's go to 1988. Show you another
 23 document that's been admitted, Exhibit 263. Now
 24 we're in 1988.
 25 This is a memo from Mr. Lanzafame, May 20th,

1 he would qualify as to whether the standards are over
 2 or under protective. They are what they are.
 3 THE COURT: Noted. Overruled. You may
 4 answer, Mr. Tarr. You're talking about the air
 5 quality standards, correct?
 6 MR. SMOGER: Just the air quality standards.
 7 THE COURT: You may answer, sir.
 8 THE WITNESS: Thank you.
 9 A. In the document, the EPA announced to the
 10 rest of the country that they were adopting the
 11 primary ambient air quality standard for lead.
 12 There is a long discussion of the logic that
 13 they used to choose the number that they wound up
 14 with, the 1.5 micrograms per cubic meter, quarterly
 15 average.
 16 In that discussion they indicate that
 17 they're adopting the number that they adopted for the
 18 purpose of protecting the health of the most
 19 susceptible, young children, not all young children,
 20 I think it says, or something like that, but they're
 21 trying to be as protective as they can.
 22 But they're not, in no way, at least with
 23 regard to their discussion of the standard, did they
 24 indicate they were going beyond that very reasonable
 25 approach.

1 Q. And as the Fluor attorneys have pointed out,
2 when this was set in 1978, the CDC standard for those
3 young children was 30, but it actually had gone down
4 to 25 when this letter was written in 1989?
5 A. I don't remember the exact timing, but I
6 believe when the standard came out it was 30. Now
7 when it changed to 25, I'm not exactly sure.
8 Q. If I represented to you it changed in 1985
9 to 25, would that be that the protectiveness of the
10 CDC for children had gone down?
11 A. Yes. That would be correct.
12 Q. Now, in fact, a station closer than the high
13 school did not actually come into place until 1992,
14 did it?
15 A. I believe '92 is the year, correct.
16 Q. So they managed to put this station, this
17 monitoring station that was right across the street,
18 off for ten years from when they were first requested
19 by DNR and EPA to put it in?
20 A. I don't remember when they were requested by
21 the agencies, but certainly there was discussion and
22 understanding of the need for it in the early 1980s.
23 As I understand it, it didn't go in until the early
24 1990s.
25 Q. I show you Exhibit 377.

1 THE COURT: It is Friday afternoon,
2 everybody is moving around. This guy is about ready
3 to get his spurs on.
4 MR. QUINN: Judge, I can tell you he has his
5 spurs on everyday.
6 Your Honor, it is a problem because it is --
7 MR. SMOGER: Well, let me say --
8 MR. QUINN: Let my finish.
9 MR. SMOGER: Well, I can say --
10 MR. QUINN: Let me finish.
11 THE COURT: All right. Okay. Let's relax.
12 MR. SMOGER: We are not including --
13 THE COURT: Gerson, relax.
14 MR. QUINN: I know you're not.
15 MR. SMOGER: Okay. Okay.
16 MR. QUINN: It comes from this document, in
17 fact. I'm just concerned, I know Gerson is making
18 the representation he has made that there is no other
19 later information in here. If it is purely
20 historical, as it has been represented, then I don't
21 have an object to it.
22 THE COURT: Okay.
23 MR. QUINN: But if there's anything wrong
24 with it, then we'll have to have a problem down the
25 road and a potential sanction. But if he's

1 THE COURT: Is this in already?
2 MR. SMOGER: No. And I need to discuss
3 something with the Court.
4 (Proceedings were had at the bench out of the
5 hearing of the jury)
6 MR. SMOGER: Your Honor, this is a table
7 that was produced as part of the 2007 SIP. We've
8 redacted -- it gives all the air numbers. We
9 redacted everything after March of 1994. So it comes
10 out of a later document but no information past March
11 of 1994 is in it.
12 THE COURT: Does this have historical
13 information in it, prior to 2007?
14 MR. SMOGER: It shows the old numbers from
15 1981 to 1994. It's just in one, just one document.
16 THE COURT: Where does it come from?
17 MR. STEVE BRONSON: Your Honor, this 2007
18 revision --
19 THE COURT: 2007 SIP?
20 MR. SMOGER: Yes. Mr. Quinn can see we've
21 excised everything after March of 1994.
22 THE COURT: So you're showing this to
23 Mr. Tarr for what purpose?
24 MR. SMOGER: To show him the level during
25 the period --

1 represented that --
2 THE COURT: Okay.
3 MR. SMOGER: You can look at the document,
4 Your Honor.
5 THE COURT: '82, '83, '84.
6 MR. QUINN: Judge, it looks to me like the
7 first quarter of '94.
8 THE COURT: All right. With that
9 understanding, if something untoward comes up later,
10 we'll have to deal with it, but I'll take your word
11 for it, Gerson, okay?
12 MR. SMOGER: Thank you.
13 (The following proceedings were had in the
14 presence of the jury.)
15 THE COURT: At least I'm getting my
16 exercise.
17 MR. QUINN: Gerson, 377?
18 MR. SMOGER: 377. Move Exhibit 377 into
19 evidence, Your Honor.
20 THE COURT: That will be admitted.
21 MR. QUINN: Based on the representation --
22 THE COURT: Based upon our discussions at
23 side-bar, yes.
24 BY MR. SMOGER
25 Q. Can you state what Exhibit 377 is?

1 A. It's a table of "Lead Ambient Air Quality
2 Data in the Vicinity of the Herculaneum Smelter."
3 It's a compilation or calendar of quarterly values
4 expressed in micrograms of lead per cubic meter of
5 air.

6 Q. This one, what it shows on the first page
7 are levels at different sites. The first one is the
8 high school, which you've talked about, and the golf
9 course, that one that's north, and Ursuline, and
10 Bluff, you described where all these are. The ones
11 closest are Bluff and the high school at this time,
12 correct?

13 A. Yes. But we have haven't talked about the
14 Sherman site and I have to see where that is.

15 THE COURT: For the record, let's be
16 specific about dates here, okay?

17 BY MR. SMOGER

18 Q. This is 1982, 1983, 1984, I'll represent to
19 you without -- so -- that -- it's Friday afternoon.
20 The Sherman sight is further away than any of those,
21 than either the high school or Bluff.

22 This would give the quarterly numbers, one
23 of the things you see, we'll show you the next page,
24 and you see that the, if you look at the bottom of
25 1984, and the 1984 numbers from the high school,

1 which are here, you'll see that it's -- there is a
2 little -- that they go down and that's -- I don't
3 know if you looked at testimony where it said that
4 there was a strike that year in 1984, and there was,
5 at that point, for a good part of that year the
6 smelter wasn't operating.

7 MR. QUINN: Your Honor, that wasn't a
8 question, that was just testimony.

9 BY MR. SMOGER

10 Q. Did you understand, did you read that in the
11 materials?

12 A. Yes, at some point I've seen that.

13 THE COURT: Noted and overruled. It's been
14 cleared.

15 BY MR. SMOGER

16 Q. Now we go through here. Then you see one
17 spot that comes up at the end, if you look on the
18 first page, the last quarter of 1992. What
19 monitoring site gets added in the last quarter of
20 1992?

21 A. Let me find out what you're talking about,
22 if I may. You're talking about this number?

23 Q. Yes.

24 A. That's the first value, I believe, first
25 quarterly average for the site, which is identified

1 as the Broad Street site.

2 Q. So that's the first time a site is put in
3 closer than the high school, and its first level that
4 it shows in the end of 1992 was 5.5, or more than
5 three times the standard?

6 A. 5.5 micrograms per cubic measured quarterly
7 average more than three times 1.5, yes.

8 Q. Let me show you a chart from that which
9 would be the highest numbers from each of the --

10 MR. QUINN: Is this an exhibit?

11 MR. SMOGER: This is a compilation from that
12 document.

13 BY MR. SMOGER

14 Q. This is a compilation of the highest number
15 from the document you have in each year?

16 MR. QUINN: Of selected sites.

17 BY MR. SMOGER

18 Q. Of these three sites. These are the three
19 sites closest to the plant, correct?

20 A. Yes.

21 Q. Now, in each year, at each of those sites,
22 except for one year at the Bluff site, the lead
23 levels are in excess of the 1.5 standard in at least
24 one of the quarters of each year, correct?

25 A. Assuming that this is the information from

1 Exhibit 377.

2 Q. Yes.

3 A. That would be right.

4 MR. QUINN: Your Honor, I wasn't quite sure.
5 You're not saying that's the average for the year,
6 you're saying that happens to be one quarter?

7 MR. SMOGER: To make it clear, it's the high
8 quarter in that year.

9 MR. QUINN: There was low ones, but that is
10 the high?

11 MR. SMOGER: These are the high quarters for
12 each year at each of the sites.

13 MR. QUINN: Thank you.

14 BY MR. SMOGER

15 Q. Now let's go back. The state didn't have it
16 and the federal government never got it, but we have
17 some of those levels. I'm going to show you
18 Exhibit 378. Let me show you -- I'm showing you
19 Exhibit 378, which is November 13th, 1979 document.

20 MR. SMOGER: I move Exhibit 378 into
21 evidence.

22 MR. QUINN: No objection, Your Honor,
23 although it looks like the -- never mind.

24 THE COURT: It will be admitted. Thank you.
25

1 BY MR. SMOGER
 2 Q. Let me show you station 9.
 3 MR. QUINN: What page, Gerson?
 4 MR. SMOGER: That would be page 3.
 5 BY MR. SMOGER
 6 Q. Station 9, is that the environmental
 7 building?
 8 A. Well, it's the library. It's now called the
 9 library in this memorandum.
 10 Q. I'll represent to you that Mr. Vornberg said
 11 the library and the environmental building were the
 12 same building.
 13 A. All right.
 14 Q. What you have -- what do you have as your
 15 levels, 90 day average, which is for that building?
 16 A. Okay. First let me explain. A 90 day
 17 average is equivalent to a quarterly average,
 18 roughly. The value that they're indicating here
 19 appears to be 32.3 micrograms per cubic meters, as
 20 best I can determine.
 21 Q. And this was shortly after the NAAQS came
 22 into place and what is the NAAQS number?
 23 A. 1.5 micrograms per cubic meter.
 24 Q. This is somewhere around between 20 and 30
 25 times the level of the NAAQS at the environmental

1 The next two exhibits are going to be in
 2 January 1980.
 3 BY MR. SMOGER
 4 Q. The next exhibit was 16.7, more than ten
 5 times?
 6 A. 16.7 micrograms per cubic meter, more than
 7 ten times the NAAQS standard.
 8 Q. In fact, they do an average for the last
 9 twelve months on Exhibit 381, in 1980, for the twelve
 10 months before that exhibit, and their average for the
 11 entire year is 16.6, more than ten times the
 12 standard?
 13 A. 16.6 micrograms per cubic meter, which is
 14 more than ten times the NAAQS standard, yes.
 15 Q. This is the information that Mr. Vornberg
 16 said they were, that they were aware of, the
 17 environmental building, but did not show to the state
 18 or the federal government?
 19 A. It appears to be, yes.
 20 Q. And this is the information that they knew
 21 existed in that northwest, or the environmental
 22 building monitor that we've seen talked about in
 23 document after document for the next eight years that
 24 they didn't want to put in?
 25 A. Okay. Would you restate the question,

1 building?
 2 A. I'll put it at between 20 and 22 times,
 3 actually.
 4 Q. I thought you were going to do that. 20 to
 5 22 times more. This is the data that they had. I'm
 6 going to show you documents from December 13, 1979,
 7 January 15th, 1980, January 20th, 1980. That would
 8 be Exhibits 379, Exhibit 380, and Exhibit 381.
 9 MR. QUINN: Is that the order you put them
 10 in -- never mind. I got it.
 11 MR. SMOGER: I move Exhibit 379, 380, and
 12 381 into evidence.
 13 MR. QUINN: No objection, Your Honor.
 14 THE COURT: They'll be admitted. Thank you.
 15 BY MR. SMOGER
 16 Q. Now this is December's average, is that the
 17 average at the environmental building again, 32.3?
 18 A. Well, Exhibit 379, the 90 day average is
 19 32.3 micrograms per cubic meter.
 20 Q. Again, 20 to 22 times the NAAQS limit?
 21 A. Yes.
 22 Q. I got 20 to 22 that time. Next exhibit --
 23 THE COURT: What was the date of that
 24 exhibit?
 25 MR. SMOGER: This is December 13th, 1979.

1 please.
 2 Q. This would have been the monitor that all
 3 those documents that we went through '82 all the way
 4 up through '88, that they said they didn't want to
 5 put in?
 6 A. This would be the location or the very close
 7 to that location, that's correct.
 8 Q. And when they finally put one in at Broad
 9 Street, it was 5.5?
 10 A. That was the first quarterly average, yes,
 11 sir.
 12 Q. In 1992. Were you aware Mr. Lanzafame and
 13 Mr. Vornberg both testified that if this had, if the
 14 Broad Street monitor had been put in before 1992, it
 15 would have been higher?
 16 A. I frankly don't remember that. It's quite
 17 possible.
 18 Q. Would it have been higher, given what you
 19 know, if it was put in before any of the process
 20 equipment came in to play later in the decade?
 21 A. The control equipment, lead air emission
 22 control equipment, in all probability the answer is
 23 yes.
 24 Q. Even when all the equipment was put in in
 25 1992 it was still more than between three and four

1 times the standard at Broad Street?
 2 A. Yes.
 3 Q. Now, is it your opinion, as an environmental
 4 engineer and an expert in air safety, after reviewing
 5 the documents and understanding where the maximum
 6 concentration was, that it was impossible to -- that
 7 it was impossible to get the air below the standard
 8 before March 1994 by doing what they were doing?
 9 MR. QUINN: Your Honor, at which station are
 10 you talking about, Broad Street or the rest --
 11 MR. SMOGER: Let me ask that question. I'll
 12 go back.
 13 THE COURT: All right.
 14 BY MR. SMOGER
 15 Q. They have to comply with every station to
 16 reach the standard, it's not station by station?
 17 MR. QUINN: I object, that's not the
 18 question that --
 19 MR. SMOGER: I'm asking a different
 20 question.
 21 BY MR. SMOGER
 22 Q. They have to apply everywhere, correct?
 23 A. In order to meet the NAAQS standard if it's
 24 on or off -- excuse me. If it's in the, if it
 25 collects samples of ambient air, which to stay off

1 Objection is overruled.
 2 A. Well --
 3 THE COURT: If you can, sir.
 4 THE WITNESS: I can give an opinion, but I
 5 have to have the question again.
 6 BY MR. SMOGER
 7 Q. Is it your opinion, to a reasonable degree
 8 of engineering certainty, that Doe Run concealed the
 9 level of lead contamination from the community and
 10 from lead regulators as reflected by, through 1992,
 11 of the lack of a monitoring station at the fence
 12 line?
 13 MR. QUINN: Your Honor, my objection now,
 14 he's asking him engineering certainty, which is one
 15 thing, he's asking him in essence a different type of
 16 a question, it's not engineering certainty. That's
 17 the only question is certainty. Not having the
 18 linkage there --
 19 THE COURT: I see your point, Mr. Quinn.
 20 Maybe you can rephrase that. I'll sustain the
 21 objection as to the form of the question.
 22 BY MR. SMOGER
 23 Q. As an environmental engineer and air expert
 24 who dealt with regulatory agencies and having been a
 25 regulator yourself, to a reasonable degree of

1 the plant site, yes, all the stations have to be in
 2 compliance.
 3 Q. And that includes the one at Broad Street
 4 where the people were living?
 5 A. It includes the Broad Street monitor site,
 6 correct.
 7 Q. Is it your opinion, to a reasonable degree
 8 of engineering certainty, as an air expert, that it
 9 was impossible to -- by the way, they were doing
 10 things to meet that standard by March of 1994?
 11 A. Well, certainly the data reflects that they
 12 didn't meet the standard given the air pollution
 13 control steps that they incorporated in the process
 14 up to that point in time.
 15 Q. And is it your opinion, to a reasonable
 16 degree of engineering certainty as an air expert,
 17 that Doe Run concealed the level of air contamination
 18 from the community and regulators?
 19 MR. QUINN: Your Honor, I object to that.
 20 He's already gone through the record of showing the
 21 discussions with the regulators all along about the
 22 reason why they didn't want the station.
 23 THE COURT: I think Mr. Tarr can give an
 24 opinion based upon his review of all the documents
 25 and all the evidence in this case. You may do so.

1 certainty, is it your opinion that Doe Run concealed
 2 the level of lead contamination from the state and
 3 from regulators in the community that was occurring
 4 at the fence line?
 5 MR. QUINN: Objection as to foundation.
 6 That's a different question.
 7 THE COURT: Overruled. You may answer,
 8 Mr. Tarr.
 9 A. Number one, I think that the truth of the
 10 matter, with respect to the ambient air lead
 11 concentrations in the community of Herculaneum was
 12 hidden, given the lack of an effort to define the
 13 maximum ambient air lead concentration.
 14 Number two, I believe that the SIP
 15 development and air pollution control devices and the
 16 surrounding engineering and air pollution control
 17 evaluation of the situation did not address the truth
 18 of the matter by any stretch of the imagination.
 19 Q. In your opinion, as an air regulator and air
 20 expert, what is your opinion as to what Doe Run
 21 should have done to protect the people in the matter
 22 that the NAAQS were created to protect children?
 23 MR. QUINN: Your Honor, I object to the
 24 foundation.
 25 THE COURT: Overruled. You may answer,

1 Mr. Tarr.
 2 A. First of all, they should have told the
 3 truth, both to the community and to the regulatory
 4 agencies.
 5 Secondly, they should have taken definitive
 6 action to protect the health of those children,
 7 either by providing them and their families an
 8 opportunity to live somewhere else, or by shutting
 9 down the lead smelter in Herculaneum and ceasing
 10 operation.
 11 MR. SMOGER: Thank you.
 12 THE COURT: We need to take a break. Ladies
 13 and gentlemen of the jury, we'll take the afternoon
 14 recess. Again I'll remind you of the Court's
 15 admonishments, don't discuss the case among
 16 yourselves or with others or do any independent
 17 research. We'll take a 20 minute recess, folks.
 18 Let's break until 3:30.
 19 (The Court duly admonished the jury and a
 20 recess was taken.)
 21 (The following proceedings were had in the
 22 presence of the jury:)
 23 THE COURT: Everyone be seated. Mr. Quinn,
 24 cross exam, sir.
 25 MR. QUINN: Thank you, Your Honor.

1 have you?
 2 A. Speciation of particulate matter?
 3 Q. Particulate matter within the soils or
 4 anything like that?
 5 A. Soils, no, but indirectly we talked about
 6 speciation, i.e., the particulate matter in the
 7 atmosphere is generally not all lead, sometimes it's
 8 only partially lead.
 9 Q. Stone Lions Environmental Corporation is an
 10 S Corporation?
 11 A. I think that's correct.
 12 Q. What is an S Corporation?
 13 A. It's a legal term. I'm not sure what it is.
 14 Q. A corporation you set up for your business,
 15 right?
 16 A. Well, it's -- the business is incorporated
 17 under the law of the state of California. I don't
 18 know all the ins and outs of the legal matter, I
 19 leave that to my lawyer.
 20 Q. It is a corporation and whatever protections
 21 you get for liability or tax benefits, that all flows
 22 from the normal corporate laws?
 23 A. I have to defer that question to my lawyer.
 24 Q. Or I would probably defer to my wife, but
 25 neither one of us. Okay. Thank you, sir.

CROSS-EXAMINATION

1
 2 BY MR. QUINN
 3 Q. Mr. Tarr, you're not a toxicologist?
 4 A. No, I'm not.
 5 Q. You're not an epidemiologist?
 6 A. No, sir.
 7 Q. I had to learn long words in this case.
 8 You're not a neuropsychologist?
 9 A. No, sir.
 10 Q. You're not trained in physiology?
 11 A. I'm not.
 12 Q. You're not a biochemist?
 13 A. No.
 14 Q. Not a soil scientist, that would have been
 15 Mr. O'Connor?
 16 A. I'm not a soil scientist.
 17 Q. I think it was your recommendation they find
 18 Mr. O'Connor and bring him into the case?
 19 A. I may have well recommended him. I've known
 20 him a very long time and he's a very nice brilliant
 21 gentleman.
 22 Q. I'm trying to get the things out of the way
 23 that you're not talking about, you haven't talked
 24 about. You haven't talked about speciation or
 25 anything like that during the 1981 or 1994 period,

1 Now, in your deposition, which we've taken,
 2 I'll try to cover some points that hopefully we won't
 3 have a disagreement with. Let's see if we can do it.
 4 I think you said, and you may have said it
 5 here today, that St. Joe, actually, back in the 1970s
 6 and 1980s, then Doe Run later in the '80s, should
 7 have just moved everybody out. That was your belief
 8 and you said something to that affect today?
 9 A. I don't think I said that today, I'm not
 10 sure I said it in the deposition, but certainly I
 11 believe that was a viable solution and that that
 12 could well have been undertaken. But I hope I didn't
 13 leave you with the impression that I thought that
 14 should be mandatory. I never thought that and I
 15 don't say that.
 16 Q. For Mr. Smoger you gave him the other
 17 option, shut the plant down?
 18 A. I said that a lot of times, including in the
 19 deposition.
 20 Q. And the jobs go over seas to wherever they
 21 are and that's okay?
 22 A. I don't think that necessarily follows.
 23 Q. All right. Any other -- isn't Herculaneum
 24 the biggest primary smelter in the United States?
 25 A. Excuse me, I didn't hear the last part.

1 Q. Lead smelter.
 2 A. I think it's the last primary lead smelter
 3 in the United States.
 4 Q. The rest are overseas, primary smelters?
 5 A. The only one, the only other one I'm
 6 familiar with I believe is in Peru.
 7 Q. Now, you are correct, because I do remember
 8 reading in your deposition that you thought there was
 9 some alternatives to moving everybody out, that would
 10 be putting in emission controls, that would be one of
 11 the alternatives?
 12 A. At the time I probably hadn't seen all the
 13 documents that I've testified about today when my
 14 deposition was taken. But certainly it's possible to
 15 control lead emissions to a greater extent than they
 16 did.
 17 The problem is that, on one of the things I
 18 learned since the deposition, as best I recollect,
 19 the mind set of the people doing the environmental
 20 work at this company, in the period of time we talked
 21 about, was such that they didn't believe they could
 22 meet the regulation -- excuse me the NAAQS standard,
 23 so I certainly have no basis from which to conclude
 24 that they could.
 25 Q. Right. But your reasoning, you said it

1 question, it had health effects in it and you went
 2 along with him and agreed. I'm trying to get you to
 3 say that health effects for you are simply just not
 4 meeting the NAAQS standard?
 5 A. Well, I'm not sure which long question
 6 you're referring to. But my position is, my belief
 7 is, my technical opinion is that in a community where
 8 the National Ambient Air Quality Standard for lead is
 9 not being met and is exceeded routinely, that equals
 10 health problems for children in that community.
 11 Q. Now, you said something a minute ago, could
 12 you identify to me the documents you've seen that
 13 tell you, that you rely upon, to say that the health
 14 effects, separate from the standard, but actually
 15 people, children, were having different health
 16 effects in Herculaneum in 1970s, 1980s, compared to
 17 the other towns in Missouri?
 18 A. I don't think I said that. But if you want
 19 to know what I'm basing the opinion I just expressed
 20 on, it would be the logic elucidated by the U.S.
 21 Environmental Protection Agency in the Federal
 22 Register when they adopted and presented to the rest
 23 of the United States the National Ambient Air Quality
 24 Standard for lead.
 25 Q. Right. That's the same Environmental

1 multiple times in your deposition, the reason they
 2 should move them out is when they know they're
 3 hurting people, not the NAAQS standard but when they
 4 know they're hurting people, right?
 5 A. By definition, the NAAQS standard, when it's
 6 exceeded is hurting people, particularly young
 7 children.
 8 Q. Because it is clear, it's all through your
 9 deposition, you have zero evidence that there's any
 10 negative health effect to the citizens of Herculaneum
 11 in the 1980s, compared to any other town in the state
 12 of Missouri, no health organization gave you that
 13 information, you've not seen any study that says the
 14 health effects on the children, or on the people, is
 15 different in Herculaneum than elsewhere?
 16 A. Number one, I don't agree with that. Number
 17 two, I'm not the person who ought to be evaluating
 18 those kind of studies, if they're available.
 19 Q. I agree with you. But your opinion, your
 20 opinion you gave to Mr. Smoger went far beyond just
 21 avoiding the NAAQS, you are basically telling this
 22 jury that you know that people are getting hurt
 23 because the NAAQS standard isn't being complied with?
 24 A. I need to hear that question again.
 25 Q. Well, when Mr. Smoger asked you his long

1 Protection Agency that worked with the Missouri
 2 Department of Natural Resources to put the SIPs in
 3 place, which we will talk about, and was fully aware
 4 of the company's position regarding Broad Street,
 5 it's the same EPA you just relied upon, right?
 6 A. Well, the EPA is a very, very large
 7 organization. The thing one has to come to recognize
 8 is that, depending upon the issue, we're relying on
 9 different individuals in EPA to generate the
 10 information that we use to make these kinds of
 11 judgments.
 12 Q. My question is you relied upon the EPA to
 13 support your opinion, but when I mentioned to you
 14 that the EPA was fully aware, was involved with the
 15 state of Missouri about the company's reasons for not
 16 wanting to put the Broad Street monitor in place
 17 until it did, and went along with that for ten years,
 18 that that EPA, that part of the EPA somehow wasn't
 19 the other part of the EPA which set the standards
 20 that you rely upon?
 21 A. There's definitely different parts of the
 22 EPA and I don't necessarily accept the way you
 23 described the process at the EPA.
 24 Q. By the way, virtually every document you saw
 25 and talked about the monitoring situation,

1 Mr. Vornberg was here about four or five days and
 2 Mr. Smoger went through almost everything with him
 3 about that story and you read that testimony, right?
 4 A. I believe I read most of it.
 5 Q. Mr. Vornberg has admitted that from the
 6 beginning of the 1980s, the company took the position
 7 that it did not want to put a Broad Street monitor in
 8 or fence line monitor close in because both it and
 9 Missouri knew that the other monitors that were
 10 already in place were already going to be in
 11 exceedances, they were also going to be showing
 12 noncompliance, as you described, and they would
 13 rather keep working spending their money on improving
 14 the air quality and get those monitors down closer
 15 before they put in a fence line, isn't that the
 16 company's position?
 17 A. It was one of their motions.
 18 Q. Right.
 19 A. Not the only one.
 20 Q. Right.
 21 A. And certainly not the only relevant one.
 22 Q. Let me ask you this question. Do you think
 23 that the community, people in St. Louis, people in
 24 Herculaneum, wherever they're, are best served when
 25 companies take their money and spend it on improving

1 A. Is that a question?
 2 Q. Yes. Isn't that what they're saying,
 3 they'd rather spend money to reduce the emissions,
 4 which they were doing, rather than getting into
 5 litigation over a fence line monitor that they said
 6 they were opposed to?
 7 A. Number one, that was one of the things that
 8 he said. Number two, the thing he didn't say is,
 9 we're going to install sufficient controls to meet
 10 the National Ambient Air Quality Standard for lead
 11 and here's how we're going to do it.
 12 Number three, he hid the truth of the matter
 13 from the community and from the appropriate
 14 regulatory control agencies, which worked to the
 15 detriment of the people that lived near this plant.
 16 Q. Let's talk about the hid the truth thing you
 17 talked about. Mr. Vornberg said, he testified, and
 18 you looked at the 1979 documents, you went through
 19 those, when they had that, those locations at the --
 20 what was it, the library or whatever they called it,
 21 and that was right when the air standard was being
 22 put in place and the SIP hadn't really been developed
 23 yet, right?
 24 A. They were in the process of developing the
 25 first SIP, I believe.

1 air quality, improving, putting in more equipment to
 2 reduce air emissions, than spending it on lawsuits
 3 with lawyers?
 4 A. I think the communities that have air
 5 pollution toxic chemical exposure problems are best
 6 served by knowing the truth. When they don't know
 7 the truth, they can't act accordingly to protect the
 8 health of their children, their own health.
 9 That's square one. If you don't know what
 10 the truth is, you don't know how to act properly to
 11 take care of your kids.
 12 Q. Now, okay, but could you answer my question
 13 now?
 14 A. I think I did.
 15 Q. Let's try it again. The question is, if,
 16 and you saw it in the document from Mr. Vornberg,
 17 Mr. Smoger went over it with you, Mr. Vornberg said
 18 in the early '80s we know we won't be in compliance
 19 with you if you put it right at the fence line, we're
 20 not in compliance with the ones out in the rest of
 21 the community, we don't want you to put another fence
 22 line in, we want to keep working, spending the money
 23 on SIPs and improving controls rather than getting in
 24 litigation on noncompliance on a monitor we know
 25 we're not going to meet for awhile.

1 Q. That took a year or so and then it took
 2 several more years to get approved and the equipment
 3 to be put in place, that was understood by everyone?
 4 A. Well, certainly it takes time to do these
 5 things. Whether or not the time that was spent is
 6 appropriate or not, I haven't tried to look at that.
 7 Q. Right. But you saw earlier today, and I can
 8 go through them with you, in fact I may quickly, you
 9 saw the three SIPs that were in place between the
 10 company, whether St. Joe Lead initially, or Doe Run
 11 Company, and the state of Missouri during this time
 12 we're talking about, you saw that?
 13 A. The only one I've seen in much detail or
 14 studied in much detail is the one based on I think it
 15 was 1990 air disbursement policy.
 16 Q. You're here as an expert on all this air,
 17 you're claiming terrible things about the company,
 18 and you didn't make the effort to look at the other
 19 two SIPs? I'm really puzzled by that.
 20 A. I might have said studied in detail. But
 21 I'm not sure I said anything terrible about anybody.
 22 I don't think it's terrible to say that someone hid
 23 the truth. That's what the record reflects.
 24 Q. For all the air monitoring, for all those
 25 standards out there that the company did report them

1 to the state, and those were in the public records of
 2 the state throughout the 1980s and early '90s, right?
 3 A. Are you talking about the one with the
 4 library building/environmental building?
 5 Q. No. You know I wasn't saying that, I think,
 6 the ones that were in place for the state of
 7 Missouri, all those numbers were being reported to
 8 the state and the state had them and they were public
 9 records?
 10 A. Well, I don't know if they reported all the
 11 ambient air monitoring results they did or not. They
 12 reported the ones they were required to, or I think
 13 they reported the ones they were required to.
 14 Q. At least I've gotten you to admit they
 15 reported the ones they were required to?
 16 A. I think I said I think they did.
 17 Q. Did you spend -- you just looked at,
 18 Mr. Smoger gave you a document with the historical
 19 documents on it?
 20 A. Yes.
 21 Q. Were those the numbers they were required to
 22 report?
 23 A. I'm not sure. They may have been or not. I
 24 believe it was a compilation of numbers reported to
 25 the state, but I'm not positive of that. I'm not

1 You saw they did a blood lead study, right?
 2 A. Yes. I've heard of a couple blood lead
 3 studies in the Herculaneum area.
 4 Q. This is a very simplistic question, although
 5 I'm not sure we'll agree there's a simplistic answer.
 6 The ambient air standards are out there irrespective
 7 of people, that's just a number, as you did this box
 8 here, it's just a reflection of what's collected out
 9 there in the air, correct?
 10 A. You said something about not involving
 11 people?
 12 Q. No, no. I'm asking you for that raw number
 13 that you get, the 1.5. I understand you say it
 14 relates to something, but just collecting that one
 15 number is a number you collect from the air, from
 16 that monitoring station you're talking about?
 17 A. The numbers are determined, are determined
 18 by collecting ambient air samples and analyzing them
 19 for lead, yes.
 20 Q. And blood leads are actually getting
 21 people's blood, part of what's inside them, and
 22 measuring the lead in that blood, that's a different
 23 measurement?
 24 A. Well, yes, it's a different measurement.
 25 Q. And people in the health communities, people

1 exactly sure what the state of Missouri asked them to
 2 report.
 3 Q. When you're talking about hurting people,
 4 just so we're clear, you're not talking about any
 5 relationship to the CDC level of concern?
 6 A. If you're talking about the acceptable or
 7 the blood level set by the CDC, the 30 micrograms per
 8 decaliter and those kind of numbers, I'm familiar,
 9 that they're out there. I don't study them and I
 10 don't evaluate those kinds of results, typically.
 11 Q. You saw earlier today, and I'll show you,
 12 just for the record, because you were here when
 13 Mr. O'Connor testified, right?
 14 A. Part of the time.
 15 Q. Did you see when we put up on the board,
 16 I'll go to the second of the two, the summary of the
 17 Herculaneum area blood lead study in 1992, did you
 18 see that?
 19 A. I think I came in sort of at the tail end of
 20 that testimony.
 21 Q. It's 2-F, the final page there. Let me hand
 22 you one, sir.
 23 A. Thank you.
 24 Q. This is the 1992 -- I'm sorry. This is the
 25 1992 summary and I'll just cut to a few parts here.

1 in the Jefferson County Health Department, Missouri
 2 Department of Health, people at the CDC, they view
 3 the blood lead as a more important measure of health
 4 or harms to people than the ambient air level, right?
 5 A. I don't know.
 6 Q. You don't have an opinion one way or the
 7 other?
 8 A. No, I don't.
 9 Q. But just for purposes here, so we're on the
 10 same page, this survey that went out, we know, I
 11 think you've seen it, 30 in 1975 was the level of
 12 concern by the CDC, right?
 13 A. Yep.
 14 Q. 25 in 1984 by the CDC?
 15 A. Yep.
 16 Q. 10 in 1992 by the CDC, right?
 17 A. That is what it says.
 18 Q. 10, are you familiar with the multitier part
 19 of 10 or you don't know that at all?
 20 A. No. I have not heard of that before.
 21 Q. If somebody was between 10 and 14, they
 22 suggest just getting a retest, 15 to 19 -- you're not
 23 familiar with that at all?
 24 A. No, I'm not.
 25 Q. When you were talking about hurting people,

1 I just want to be clear, did you consider at all
 2 that the average blood lead levels in Herculaneum had
 3 dropped from 24.3 in 1975 down to 11.6 in 1992? Did
 4 you at all consider that?
 5 A. Did I consider it?
 6 Q. Yes. Whether the kids were being hurt by
 7 that drop?
 8 A. No. That's not part of my evaluation.
 9 Q. Okay. Perhaps you've answered this for me
 10 and if you have I apologize, okay? But I thought you
 11 said that you felt there was some document about
 12 people getting hurt more in Herculaneum, or the
 13 children having worse health effects in Herculaneum
 14 than elsewhere.
 15 Just so we're clear, are you -- your opinion
 16 on that is based simply on the fact that the ambient
 17 air standards weren't being met in Herculaneum where
 18 they may have been met elsewhere?
 19 A. I don't remember saying what you just said.
 20 But what I will tell you is that if you live in a
 21 community where the lead, National Ambient Air
 22 Quality Standard is measured consistently at a level
 23 ten times higher than the standard, and you live in a
 24 community where that's not true, then I would expect
 25 that your health in the first community would be much

1 Q. Now, did you read the Baker Landrigan study
 2 in 1977 or the Landrigan Baker study in 1981?
 3 A. May I see them? I might be able to tell if
 4 I looked at them.
 5 Q. Sure. Here is 2-K, which has already been
 6 put in. That's the, I think, the 1977 study.
 7 Exhibit Y is the 1981 study. I'm asking you if you
 8 had an opportunity to read through these documents?
 9 A. I think I -- okay. First of all, I'm
 10 looking at Exhibit 2-K. I think at some point in my
 11 life I thumbed through this for the purpose of
 12 looking for ambient air concentration data and I
 13 didn't find in. I may have looked at the reference
 14 list as well, but that's about it.
 15 Q. I think you're correct, sir. I think most
 16 of the focus there is on checking things that are
 17 inside a person's body, in this case blood, or I
 18 think some may have done some hair, things like that,
 19 is that your best recollection?
 20 A. Well, that's what I see when I look through
 21 that.
 22 Q. They did that in recognizing the bad
 23 smelters we've all heard about, Kellogg, El Paso, I
 24 think one or so others that caused furors. They
 25 looked at 19 other smelters for lead, copper and zinc

1 less desirable than your health in the second
 2 community.
 3 Q. That's just your supposition, right?
 4 A. No, it's not my supposition, that's
 5 essentially what the EPA is trying to tell people
 6 like me and you.
 7 Q. Right. But at the same time we do know, I
 8 mean I think you would understand that the health
 9 departments or the doctors in a community, or in the
 10 county or in the state, they keep an eye on how their
 11 citizens are doing, isn't that something generally
 12 they do?
 13 A. If they're patients I assume that they do
 14 that, yes.
 15 Q. But the national, or the county wide or
 16 state wide organizations as well, they keep an eye on
 17 that, too?
 18 A. That I can't tell. I don't know.
 19 Q. Did the plaintiffs' lawyers give you any
 20 information where the state organizations were
 21 reporting, based on blood leads, that they felt the
 22 blood leads were not elevated in Herculaneum during
 23 the '70s and '80s?
 24 A. No, I don't think I've seen anything along
 25 those lines.

1 around the country, is that your understanding?
 2 A. I don't know. I haven't read it in detail.
 3 Do you want me to look at the other one?
 4 Q. I want to know if you read the other one?
 5 A. Let me take a look at it. Yes, I believe I
 6 looked at it in the context of another matter,
 7 specifically for the purpose of what I call analyzing
 8 some of this dust fall sampling data, particularly in
 9 El Paso, Texas.
 10 Q. Okay.
 11 A. But that's about it.
 12 Q. On the one on the screen, I'm going to read
 13 it.
 14 MR. QUINN: You don't have to highlight it,
 15 Jack, the jury has seen it before.
 16 BY MR. QUINN
 17 Q. Were you aware in the '77 study, that you
 18 had some minor familiarity with, that it writes,
 19 "Levels of lead in blood were not however elevated
 20 near any of the three lead smelters," do you recall
 21 that was a conclusion in the 1977 study?
 22 A. No, I don't remember reading that.
 23 Q. Okay. That would not be your normal area of
 24 expertise?
 25 A. Whether or not blood lead levels are

1 elevated around the smelter?
 2 Q. Did you --
 3 A. Excuse me. Is that what you asked me?
 4 Q. Yes.
 5 A. That is certainly my area of expertise, if I
 6 understood your question.
 7 Q. Oh, okay. Then the fact that --
 8 A. Did you say blood levels or air?
 9 Q. I meant to say blood.
 10 A. I heard air, but I'm not sure. But anyway,
 11 if it's air, yes, if it's blood, no.
 12 Q. I apologize. It's late on a Friday. I've
 13 already spent a lot of time with your friend
 14 Mr. O'Connor this morning and we had a good time, at
 15 least I did, I don't know if he did --
 16 THE COURT: Blood is blood and air is air
 17 and never the twain shall meet, so let's proceed.
 18 MR. QUINN: That's a good one, Your Honor.
 19 BY MR. QUINN
 20 Q. The point being, to make sure I'm clear, the
 21 issue of blood lead and hurting people is not your
 22 area of expertise?
 23 A. No, it's not.
 24 Q. Others would speak to that then?
 25 A. I have no idea.

1 conducting a five year followup evaluation of
 2 children living within 1.6 kilometers of the El Paso
 3 smelter, it's one of the bad ones?
 4 A. I don't know.
 5 Q. You know El Paso was one of the bad
 6 smelters?
 7 A. It depends on how you define bad. But I
 8 will say this, it caused the state of Texas a lot of
 9 trouble from year to year.
 10 Q. It's the one that kicked off some of the
 11 other studies. We've done that with Mr. O'Connor and
 12 I won't ask you.
 13 "We found the mean blood lead levels had
 14 decreased from 41.4 to 17.7 for one to ten year old
 15 children living within 0.8 kilometers of the plant,
 16 and from 31.2 to 20.2 for children of comparable ages
 17 who lived between .08 and 1.6 kilometers from the
 18 plant, parallel declines had occurred in air, soil
 19 and dust lead levels." Do you see that?
 20 A. Yes.
 21 Q. Were you aware that that had occurred?
 22 A. I don't remember studying that sentence.
 23 Q. It says -- well, no, but you're aware that
 24 that happened, they put in controls as they went.
 25 "These declines coincided with the

1 Q. Okay. But on the second document, the one
 2 you did remember looking at in connection with
 3 another matter, that's Exhibit Y --
 4 MR. QUINN: That's 2-Y. Got a free exhibit.
 5 Even for Jack, it's been a long day.
 6 THE COURT: I understand.
 7 BY MR. QUINN
 8 Q. This is the one in 1981, the year that Fluor
 9 acquired St. Joe Minerals, this is Exposure of
 10 Children to Heavy Metals from Smelters, Epidemiology
 11 and Toxic Consequences. I think you said you are not
 12 a epidemiologist, right?
 13 A. If I didn't, I should have.
 14 Q. I think you did.
 15 MR. QUINN: It's page 219 or the very
 16 bottom, 815 at the bottom.
 17 A. All right.
 18 BY MR. QUINN
 19 Q. This is sort of the concluding part of the
 20 study. In this part, because they had gone to
 21 various of the smelters, including Herculanum and
 22 others, they followed up on this, I won't go through
 23 all the blood lead with you because you say that's
 24 not your area of expertise, we've done it already, in
 25 this part here they talk about going back and

1 installation of engineering controls and of
 2 sophisticated antipollution equipment at the plant,
 3 do you see that?
 4 A. I do see it.
 5 Q. You are aware that that is what they're
 6 saying helped with this significant decrease, right?
 7 A. I'm aware that what you're reading is a
 8 gross generalization and I don't know if it has any
 9 validity or not.
 10 Q. Let me go over some of the documents you
 11 talked about with Mr. Smoger, if we could.
 12 Exhibit 57, do you have that one? You can see it up
 13 there, if it helps you.
 14 March 23, '93 letter from the Missouri
 15 Department of Natural Resources to Mr. Lanzafame.
 16 A. Yes, I have it.
 17 Q. This is the one we spent time with
 18 Mr. Smoger about the monitor down time of
 19 21.9 percent for awhile, right?
 20 A. Yes.
 21 Q. They were bringing it to Doe Run's attention
 22 that this has occurred. They were concerned about
 23 it. They exceeded their concern, they being the
 24 Department of Natural Resources.
 25 Then at the bottom, which I don't think you

1 went over with, "After our phone conversation of
2 February 18, 1993, and your letter of the same date,
3 the Air Pollution Control Programs has taken into
4 consideration your measures to mitigate this problem
5 and your responsiveness. However, the air program
6 expects you to take all measures necessary to ensure
7 that this situation does not reoccur." Do you see
8 that?

9 A. Yes.

10 Q. And I noticed in your testimony -- because
11 the air monitors were in place from '81 through '94,
12 at least the period we're talking about, right?

13 A. Well, I think all I talked about was
14 '81 through '92, but there may have been discussions
15 up to '94.

16 Q. Well, you talked about '93 and this is '93.

17 A. You're right, but I don't know about air
18 monitors in place specifically, I don't think we
19 looked at that data. We may have.

20 Q. You looked at the summary which went up to
21 the first quarter of '94?

22 A. I thought it was '92, but I could be wrong.

23 Q. Whatever. No other document that you've
24 seen shows a problem that the state was having with
25 the monitor, that this is the only document, at least

1 that you talked about in direct, where the state
2 brought it to the attention there was a monitoring
3 issue, right?

4 A. There may have been illusions to that in
5 other documents, I'm not sure.

6 Q. In fact, in one of your depositions you
7 stated you had no knowledge that the company has done
8 anything wrong regarding the monitors?

9 A. All right. I may have said that.

10 Q. It was true when you said it?

11 A. Well, that might have been the state of my
12 knowledge when I said that. Certainly since then
13 I've learned other things that indicate that's not
14 the case, including this document you're looking at
15 here.

16 Q. Hadn't you gotten this document, hadn't they
17 given you this?

18 A. I don't remember having seen it. But there
19 is -- this document is interesting for another
20 reason.

21 When you read this document and you think
22 about it a little bit, you have to consider the
23 possibility that this is another indication of
24 Doe Run hiding the truth with respect to ambient air
25 concentration --

1 Q. I'm sure you do.

2 A. -- ambient air concentrations of lead.

3 Q. They have hidden it and somehow this letter
4 came out of the blue from the state because they've
5 hidden it?

6 A. No. If you look at the subject of the
7 letter, "Monitor downtown is reported on excess
8 emission reports." Excess emission report is
9 probably a document that Doe Run had to submit to the
10 state when they had some sort of process upset at the
11 facility, which by definition would have increased
12 the ambient air lead exposure in the community if the
13 wind happened to be blowing out of a bad direction.

14 If I were a regulator at the Missouri
15 department, I would ask myself, did they do this on
16 purpose because they didn't want to report the high
17 values.

18 Q. That's fair. I understand you think they've
19 done things on purpose. You've stated that under
20 oath here in front of this jury.

21 Can you tell the jury though what
22 investigation you personally have undertaken, I know
23 you gave a supposition there, it's nice to throw out
24 supposition, what investigation you personally have
25 undertaken to support that supposition or are you

1 just supposing it?

2 A. I think I said that that's one of the
3 considerations that a regulatory person either would
4 have or should have considered when he wrote this
5 letter and that regulatory person should have gone to
6 the smelter and figured that out.

7 Q. Okay.

8 A. Excuse me.

9 Q. Go ahead.

10 A. Excuse me. I'd like to finish.

11 Q. Please do.

12 A. If that was the case, then that regulatory
13 person should have done everything in his power to
14 make certain that Doe Run was punished for doing that
15 and make certain that they didn't do it.

16 Q. Okay. Now it's that they have to be
17 punished beyond just finding out the facts?

18 A. If they're -- if Doe Run had as a standard
19 operating procedure, to hide ambient air
20 concentrations in the community, created as a result
21 of process upsets like this suggests as a
22 possibility, then, yes, they should have been held
23 responsible for it and, yes, they should have been
24 convinced not to do it anymore.

25 Q. Did you talk to Mr. Pratt?

1 A. No, I haven't.
 2 Q. Did you talk to anyone at the Air Pollution
 3 Control Program to find out what they did?
 4 A. About this particular matter?
 5 Q. Yes.
 6 A. No, I did not.
 7 Q. Did you talk to anybody in the state of
 8 Missouri at all about what the state of Missouri did
 9 or did not do?
 10 A. I've had conversations with regulatory
 11 people in the state of Missouri during the course of
 12 the work that I've done here, as well as
 13 conversations with people at the U.S. EPA office in
 14 Kansas City.
 15 Q. And what do they say about this?
 16 A. I didn't ask them specifically about this.
 17 Q. Why?
 18 A. I had no particular need to.
 19 Q. You just said this reflects hiding the ball,
 20 why didn't you just say, look, you guys, you let them
 21 hide the ball?
 22 A. I didn't say that. I said that's one
 23 possibility.
 24 Q. Okay. The other possibility is that it just
 25 was a down monitor and the Air Pollution Control

1 document?
 2 Q. Let's find it. It's the -- yes, down here,
 3 talking about diverting environmental resources to
 4 legal action and their pollution control money into
 5 civil settlements as opposed to pollution controls.
 6 That was discussed by the company with the state?
 7 A. That appears to be the case.
 8 Q. The state ultimately concluded that was,
 9 they concluded that was okay, they agreed with that
 10 because they didn't require putting that fence line
 11 monitor in, as you said, until 1992?
 12 A. Well, some individual at the regulatory
 13 agency may have done that, I don't know if the state
 14 of Missouri did. I think that's a bit too broad an
 15 interpretation.
 16 Q. Okay. But they clearly weren't hiding from
 17 the state of Missouri their position they didn't want
 18 that fence line Broad Street monitor, that wasn't
 19 being hidden, they said it up front from the early
 20 '80s all along?
 21 A. No, I don't think they were trying to hide
 22 that.
 23 Q. They explained the reasons why, it wasn't
 24 going to be in compliance. You don't have to look at
 25 that. You know that. That's what they were saying

1 Program people who were involved decided to, this was
 2 the appropriate way to handle it?
 3 A. That is a possibility. But in my judgment
 4 it's a much less likely possibility than the first
 5 one we talked about.
 6 Q. Okay. Exhibit 50, I'll try to go through
 7 these quickly, this is a document that Mr. Vornberg
 8 did testify about and perhaps Mr. Lanzafame. This is
 9 the document when they talked to the Air Program
 10 Staff Director, right correct?
 11 A. Excuse me. I need to take a drink of water.
 12 Q. I apologize to you.
 13 A. Air Program Staff Director, Mr. Nikkila.
 14 Q. Right. I think this is the document where
 15 Mr. Vornberg talked about they were telling the state
 16 we'd rather be spending money on air controls and
 17 fixing it up rather than litigation, that's why we'd
 18 rather not put in the fence line monitor, because you
 19 have a number of these fence line documents here,
 20 correct, sir?
 21 A. That's what they were saying, apparently.
 22 Q. So they said that to the state, they came
 23 right out and said this is why we don't want to do
 24 it, right?
 25 A. You're talking about what part of the

1 all along, that monitor won't be in compliance for at
 2 least a while putting all the controls in?
 3 A. They said they didn't want to make a public
 4 record of the data well above the standard.
 5 Q. We've got multiple documents after that
 6 where they talk about the same thing, where they talk
 7 about over the years there were other meetings with
 8 the state, every once in a while it's brought up to
 9 them again that the EPA is asking about a fence line
 10 monitor and the company was saying to the state,
 11 we're still not there yet, we have noncompliance, as
 12 you talked about out at the other monitors, this will
 13 be in noncompliance, too, so let's wait until we get
 14 the other monitors more into compliance or totally
 15 into compliance and then put the fence line monitor
 16 in, that was the company's position?
 17 A. I think that's a fair rendition.
 18 Q. You disagree with that, I understand, but
 19 that was their position and that's what they were
 20 telling the state?
 21 A. I think that's a fair rendition of the
 22 justification they offered for their failure to try
 23 to comply with the standard.
 24 Q. But they weren't required by the Missouri
 25 Department of Natural Resources or the EPA to put

1 that monitor in I think until 1992, right?
 2 A. That appears to be the case.
 3 Q. Actually, we'll talk about this in a second,
 4 those numbers you saw from 1992 when they put them
 5 in, do you remember, you saw those numbers?
 6 A. First number, 5.5 micrograms per cubic
 7 meter.
 8 Q. When they put it in, they were actually
 9 given two years from the time they put it in to bring
 10 it into compliance, isn't that true?
 11 A. That I don't remember.
 12 MR. QUINN: 25-Y.
 13 BY MR. QUINN
 14 Q. Let me hand the witness 25-Y and ask him if
 15 he's familiar with that. I think this may be the
 16 1990 SIP revision which you say you are familiar
 17 with?
 18 A. Yes. I spent some time with this document.
 19 MR. QUINN: I offer 25-Y, Your Honor. I
 20 have to get you a copy. Here it is. I'll give one
 21 to the judge.
 22 MR. BRONSON: No objection, Your Honor.
 23 THE COURT: None?
 24 MR. BRONSON: None.
 25 THE COURT: Thank you.

1 in time to permit optimum operation of this new
 2 equipment." Do you see this section, sir.
 3 A. Yes.
 4 Q. If you turn back to 737. "DNR plans to
 5 install a monitor in Herculaneum at the approximate
 6 location determined by the 1990 dispersion model
 7 projected as having a maximum ambient air
 8 concentration at the projected attainment date of
 9 February 1, 1993." Do you see that?
 10 A. Yes.
 11 Q. That's the Broad Street station they're
 12 talking about, this is when they told them to put it
 13 in, correct?
 14 A. I think it probably is.
 15 Q. Right. Then it says. "DNR plans to install
 16 the monitor two calendar quarters prior to this
 17 attainment date," do you see that?
 18 A. Yes.
 19 Q. The monitor is something DNR puts in place,
 20 right?
 21 A. They say they're going to.
 22 Q. But I mean it's a DNR monitor?
 23 A. That's what the language suggests, yes.
 24 Q. Here is 376. I'll put it on here for you.
 25 This is the 1986, I'm bouncing back and forth a

1 MR. QUINN: Put the first page on first.
 2 BY MR. QUINN
 3 Q. The 1990 revision, correct?
 4 A. Yes.
 5 Q. Department of Natural Resources Division of
 6 Environmental Quality for the state of Missouri.
 7 The second page, "Missouri State
 8 Implementation Plan for Lead, 1990 SIP Revision,
 9 concerning a demonstration attainment of the lead
 10 NAAQS, that's the National Ambient Air Quality
 11 Standards," that you're familiar with, "in the
 12 vicinity of the primary lead smelter refinery in
 13 Herculaneum, Missouri," right?
 14 A. Yes.
 15 Q. If we go back to 723 at the bottom. This is
 16 where they're talking about, this is when they were
 17 going to put in the Broad Street monitor, correct?
 18 It says, "The attainment date for this SIP
 19 revision in the Herculaneum vicinity is February 1,
 20 1993. This is determined by the time of completion
 21 of the installation of a third new baghouse," that
 22 was one of the many, like \$28 million of SIP work
 23 they had done in the late '80s, early '90s, "the
 24 latest completion date being November 1, 1992, of any
 25 of the control measures, plus a three month allowance

1 little in dates because this is the order you did
 2 them in.
 3 This is the Vornberg Lanzafame memo in
 4 December of '86, right? You can see it up here. Do
 5 you need me to --
 6 A. I've got it. 376?
 7 Q. Correct.
 8 A. I've got it.
 9 Q. And they're talking here again about they
 10 have a meeting with the Missouri Department of
 11 Natural Resources. They're talking again about this
 12 monitor and it says here, "Region VII," which you
 13 said is the EPA, "has agreed to passively support the
 14 DNR proposal to use the Dunklin High School as the
 15 location for a demonstration of attainment in spite
 16 of the potential modeled maximum indicated at the old
 17 environmental building," correct?
 18 A. Yes.
 19 Q. So I mean this is clear that Missouri DNR,
 20 and actually the EPA, Region VII, were fully aware,
 21 at least in 1986 and likely before, that for all the
 22 work that was going on in that smelter, because it
 23 was a smelter that had been running for 80 plus years
 24 before the National Ambient Air Quality Standards
 25 came in, right?

1 A. I believe that's right.
 2 Q. And to change the smelter and start
 3 capturing the stack emissions and the fugitive
 4 emissions from all the complex parts of that plant,
 5 including on the ground and other things, they
 6 understood would take a while, isn't that fair to
 7 say?
 8 A. Who was they?
 9 Q. They being MDNR, EPA, and the company.
 10 A. They didn't understand the real nature of
 11 the problem, but, yes, they probably assumed it would
 12 take months, if not years.
 13 Q. They may not have understood it would take
 14 as long as it did, but they understood it would take
 15 some time to do it and multiple SIPs?
 16 A. What they understood was an illusion that
 17 had been developed for their information by this
 18 company. They did not understand the truth of the
 19 situation and that --
 20 Q. That's your opinion.
 21 A. Excuse me. I'm not finished. I'm trying to
 22 fine the right word. Just a moment.
 23 Q. Okay.
 24 A. That made it difficult for them to do their
 25 job and to protect the people that lived in

1 be, not necessarily new technologies, but different
 2 kinds of control systems or adding control systems to
 3 the processes as the facility.
 4 Q. I mean, that wasn't something that the
 5 company could hide from them, they knew that, the
 6 regulators knew that?
 7 A. They knew that, yes.
 8 Q. They had information that at monitoring
 9 stations in the community, the high school, some
 10 other places, throughout the '80s there were periods
 11 of time that those monitoring stations were out of
 12 compliance?
 13 A. To a certain extent, yes.
 14 Q. I thought, as Mr. Smoger said, if one is out
 15 of compliance, they're all out of compliance?
 16 A. That's not my point. I'm trying to say that
 17 from a regulatory prospective in the context of the
 18 lead NAAQS, looking at a number of 5.5 micrograms per
 19 cubic meter, quarterly average, is dramatically
 20 different than looking at the truth of the matter,
 21 where you have ambient air measurements indicating
 22 quarterly lead averages of greater than 30 micrograms
 23 per cubic meter. That's the difference between an
 24 illusion and the reality of the situation. They were
 25 operating in an illusion.

1 Herculeaneum, particularly those near the smelter.
 2 Q. Well, I've heard you say that a number of
 3 times. Let's just be clear about what the people in
 4 the State of Missouri Department of Natural Resources
 5 and the EPA did know, right? First of all, simply
 6 they knew it was an old lead smelter?
 7 A. I would agree with that.
 8 Q. They knew it was an operating lead smelter,
 9 the biggest one, primary smelter in the United States
 10 at the time?
 11 A. I don't know about that.
 12 Q. They knew it was one of the bigger once?
 13 A. I'm sure they thought it was big.
 14 Q. They knew it had to do a lot of capturing of
 15 emissions, whether it be from fugitives or from the
 16 stack, they knew that?
 17 A. Would you say that again?
 18 Q. Because that's what they were doing in the
 19 SIP. They were trying to develop new technologies to
 20 capture the emissions, whether they be from the stack
 21 or, as the years developed, various fugitive
 22 emissions that they were finding out about, they knew
 23 that?
 24 A. Well, they knew there were multiple sources
 25 at the facility and that they were going to have to

1 Q. They were operating without information.
 2 A. They were operating in an illusion using
 3 invalid tools to create this continued ability to
 4 operate and do what they wanted to do.
 5 Q. But you're not saying that they didn't know
 6 the Broad Street station would be higher than the
 7 other stations, they knew that all along.
 8 A. Are you talking about the state of Missouri
 9 and U.S. EPA?
 10 Q. Correct.
 11 A. They may well have known that, depending
 12 upon the modeling and what they did and what they
 13 didn't to. I presume that's the case, but I don't
 14 know when they knew it.
 15 Q. It's the whole idea of closer to it, you're
 16 going to have more emissions, and you said that's
 17 pretty common?
 18 A. No. It doesn't matter where you're at
 19 whether you're going to have more emissions, it
 20 matters where you're at what the impact of the
 21 emissions are going to be.
 22 Without knowing the truth of the matter, the
 23 state of Missouri and U.S. EPA cannot make rational
 24 decisions to protect the people of this community,
 25 which is their primary reason for existence.

1 Q. The one final part, and we've belabored it
2 and I'm sure people are tired of it but we'll do it
3 one more time and move on, is that they also knew
4 that the company was saying, don't put it here
5 because we are going to be exceeding, we know that,
6 and it's going to take money away from continuing to
7 fix it and litigation, we saw that memo that's what
8 the company talked to with the state?

9 A. Number one, they didn't know the degree of
10 the problem. Number two, if they're running out of
11 money in the environmental expenditure pot, they
12 should have put some more money in it to deal with
13 the problem that they actually had rather than the
14 one that they were trying to convince the state that
15 they had, which again is an illusion and is not
16 reality.

17 Q. The other thing they knew, again this is
18 outside your area because it's not air lead, but they
19 knew what the CDC level of concern was and they knew
20 what the blood lead levels were for citizens in
21 Herculeaneum because the state actually put out a lot
22 of those press releases?

23 A. I don't know the truth of that matter.

24 Q. You know the press releases in 1984, for
25 instance, when the blood lead survey came out, '85,

1 came out from the state, right?

2 A. I don't remember seeing any press releases.
3 I may have but, number one, I'm not sure of the
4 details and that's not in my area of expertise to
5 make judgments about.

6 Q. But they may have known that?

7 A. Possibly.

8 Q. 377 was a document that Mr. Smoger put on,
9 this is the calendar quarterly values, do you
10 remember that?

11 A. Yes.

12 Q. It went from, there's multiple pages, '82
13 through the early '90s and here at the end you see
14 the Broad Street station being put in, correct?

15 A. Are you talking about the 5.5 number?

16 Q. Yes.

17 A. Yes, sir.

18 Q. Now, as I was looking at these documents,
19 one thing struck me, it seems like the fourth quarter
20 usually was higher, not always, but usually higher
21 than some of the other quarters, that's the winter,
22 is there some reason for that?

23 A. It could be a reflection of a number of
24 things. One is a change in the emission rates and
25 another is the predominant wind direction. There are

1 other reasons those numbers might be consistently
2 different.

3 Q. As I look through this document starting in
4 '82, it does appear, especially when you get to the
5 second page, that there are fewer exceedances in a
6 lot of the stations as you went on, that they were
7 doing better and the numbers were coming down, not
8 every quarter but they were coming down, right?

9 A. I haven't done that analysis. It's possible
10 that's correct. I'm not sure.

11 Q. Now, over here at the 5.5, do you see that?

12 A. Yes.

13 Q. This is in the last quarter of 1992?

14 A. Right.

15 Q. And you remember spending time with
16 Mr. Smoger talking about when they did measurements
17 at that basic area in 1979, that's the area on the
18 library or whatever else, it was over 30?

19 A. I'm not sure those are the same --

20 Q. They're the same.

21 A. Excuse me. I'm not sure the Broad Street
22 monitor is at the same place that the environmental
23 building/library was at.

24 Q. The library is right across the street from
25 the plant, right, isn't that where the library is?

1 A. I believe it is, but I'm -- again, I'm not
2 sure they were at the same place.

3 Q. Did you make any effort to determine whether
4 this 5.5, while it is still exceeding, you are
5 correct about that, as the company had said it would
6 be exceeding, is in the very same area or very close
7 to where, in 1979, before all the controls got into
8 place, it was over 30?

9 A. I don't understand the question. Will you
10 ask me again, please?

11 Q. Let me try to do this. In 1979, you went
12 through the numbers and I can show them here, 378,
13 you had a series of them that were basically the same
14 thing, I'll put this on to show you. Remember the
15 32?

16 A. Yes, sir, I do.

17 Q. Okay. Then I think you -- it is about 21
18 times. I think it was 20, 22.

19 MR. QUINN: I think 21 is about right,
20 Gerson, is my best recollection.

21 BY MR. QUINN

22 Q. You were shown three documents, you remember
23 that number at that location?

24 A. I do.

25 Q. You said that's one of the reasons they hid

1 that, they didn't tell the people about it, you felt
 2 that was something wrong?
 3 A. I do think it was wrong.
 4 Q. Okay. But at least, whether it's in the
 5 exact same space or whether it's 50 feet or 50 yards
 6 one way or the other, that was a very close station
 7 to the fence line?
 8 A. The Broad Street monitor?
 9 Q. The one with the 30, the environmental
 10 building, the library?
 11 A. I'm not exactly sure where it's located. I
 12 have a general idea of where it's located. I believe
 13 it's -- well, it's closer to the fence line, as best
 14 I understand it, than the previous monitors that we
 15 talked about.
 16 Q. It's closer to the fence line, just like the
 17 Broad Street monitor is?
 18 A. Well, the problem I'm having with your
 19 questions is that I'm not certain, or I have no
 20 reason to assume that the Broad Street monitor is
 21 located at the same place the environmental/library
 22 monitor is located, or was located, excuse me.
 23 Q. And if you don't know, you don't know and I
 24 won't go any father with it, but can you at least
 25 agree with me that the Broad Street monitor and the

1 incorporate.
 2 Q. Maybe they'd started, you don't know how far
 3 along they were?
 4 A. What I will tell you is if they were smart,
 5 they started before.
 6 Q. You do know that over the years they worked
 7 on the SIPs and I think in the later part they spent
 8 over \$28 million on different devices, different
 9 controls to improve emissions and their emission
 10 controls did improve, right?
 11 A. Possibly.
 12 Q. Well, are you familiar with the overall
 13 emission numbers that show, I think from '79 to '93,
 14 that the emissions, the total emissions from the
 15 smelter came down about 70 percent?
 16 A. I've seen those numbers. I haven't seen how
 17 they're derived and I have no particular reason to
 18 take them at face value. In fact, I don't accept
 19 them at face value.
 20 Q. You just don't accept them?
 21 A. I don't accept them at face value.
 22 MR. QUINN: One second, Your Honor, we're
 23 getting close.
 24 BY MR. QUINN
 25 Q. Let me place before you the three SIPs that

1 library monitor, that wasn't reported with the 30
 2 number, are significantly closer to the fence line
 3 than the other monitors that were being used?
 4 A. Yes, I would agree with that.
 5 Q. In fact, this is the one that was being
 6 resisted because it was going to be high and the
 7 company had said that they know this was going to be
 8 high?
 9 A. To be over the standard, I think they said.
 10 Q. If it turned out that this station is fairly
 11 close, let's say within a couple hundred feet, maybe
 12 less, of where the library monitor was, wouldn't the
 13 change from 30 in 1979 to 5.5, while still exceeding,
 14 reflect an improvement?
 15 A. Possibly, but not necessarily.
 16 Q. Okay. By the way, when all those 30 numbers
 17 were being done, I'll show you up here, that's in
 18 '79. The actual SIP work, the actual construction of
 19 the emission control devices hadn't really even
 20 started, right?
 21 A. I don't know.
 22 Q. Well, the SIP was formed in '79. I think it
 23 was signed in 1980.
 24 A. Well, that doesn't mean they didn't start
 25 work on the projects that they were going to

1 I talked about with Mr. O'Connor just to see if
 2 you've had -- if you remember these. I'm not going
 3 into any great detail with you, I'll just show them
 4 to you, they're already in evidence.
 5 14-Y, I think, is the earliest SIP. 15-B, I
 6 believe, is the second. 15-C is the third. Then you
 7 saw that revision that we just showed, correct?
 8 A. 1990, yes.
 9 Q. In those stipulations which were signed by
 10 the company and the state of Missouri, they list a
 11 series of projects that need to be done and that the
 12 company agrees to do, right?
 13 A. Well, 14-Y does.
 14 Q. That's the 1980 SIP?
 15 A. Right. August 1980. Here is a 1990 SIP,
 16 which is 15-B.
 17 Q. It has projects to complete?
 18 A. There are projects, yes, sir.
 19 Q. Okay.
 20 A. 15-C for projects listed.
 21 Q. To complete?
 22 A. 1993.
 23 Q. Just real quickly, I'll put it on the
 24 screen, it's in the very first one, we were asking
 25 questions about whether the work had started or been

1 finished by 1979?
 2 A. Yes?
 3 Q. In the SIP itself it has completion dates
 4 for the projects for that first one. It looks like
 5 they're 1981 or 1982, as I go through those. Does
 6 that look right to you, sir?
 7 A. Well, the numbers or the dates I see for
 8 Item 2 is September 1, '81. For Item 1 it's two
 9 different dates, materials delivered, '81,
 10 installation '82.
 11 Q. So whether -- they might have gotten started
 12 planning on things in '79 or '80, but likely the
 13 actual goods in place to reduce the emissions
 14 wouldn't be finished until 1981, 1982?
 15 A. That's certainly conceivable, I don't know
 16 if it's completely accurate or not.
 17 Q. In the other SIPs, where they have sinter
 18 plants and baghouses, cooling tower that I think they
 19 talked about, other things, those also had completion
 20 dates in there as well?
 21 A. Probably.
 22 Q. As far as you know, the company, during the
 23 time period that these SIPs were in place, complied
 24 with the SIPs and met the target dates or got close
 25 to them and got them all complete?

1 know if you, something you hadn't seen, but Doe Run
 2 company put it out.
 3 It says, "That the primary goal of the CDC
 4 in relation to lead uptake currently is to get
 5 children under a level of 10." You think that
 6 children should be protected as much as possible,
 7 right?
 8 A. Yes, sir, I do.
 9 Q. It also showed that the CDC had a level of
 10 30 in 1975, which is before anybody in this lawsuit
 11 was born. And they changed that to 25 in 1984, which
 12 is also before anybody in this lawsuit was born. And
 13 10, it says 1992, it's actually November of 1991, it
 14 changes it to 10. The NAAQS were written actually
 15 when it was 30 before 1985?
 16 A. Yes.
 17 Q. And what they were protecting was a level as
 18 high as 30 when they were written?
 19 A. Well, the NAAQS is derived from the 30
 20 level, yes.
 21 Q. It didn't change even though we -- even
 22 though the CDC was learning more and more and more
 23 about the health and continuing dropping, the level
 24 of 1.5 was set at a much higher level, more dangerous
 25 level?

1 A. I don't know whether they did or not.
 2 MR. QUINN: One second, Your Honor. I've
 3 taken a lot of the jury's time, Your Honor, and your
 4 own, and the witness', but I'm finished. Thank you.
 5 THE COURT: Thank you, Mr. Quinn.
 6 Mr. Smoger.
 7 MR. SMOGER: I will be relatively quick.
 8 MR. QUINN: Is that your relative or my
 9 relative?
 10 MR. SMOGER: It's my relative.
 11 MR. QUINN: I don't know about that then.
 12 THE COURT: I'm not going to say be quick
 13 like a bunny, because then you'll think of the Energy
 14 Bunny which just keeps going on and on and on. Just
 15 kidding, Mr. Smoger. Have at it. Have at it.
 16 MR. SMOGER: It's late.
 17 **REDIRECT EXAMINATION**
 18 BY MR. SMOGER
 19 Q. I'm just going to ask you about three
 20 things. Early on you were shown a document that
 21 really is -- you're not an expert on blood, you're an
 22 expert on air, right?
 23 A. That is correct.
 24 Q. You were asked a lot of things. I'll just
 25 show you. Defense put up an exhibit, and I don't

1 MR. QUINN: Your Honor, I'm going to object
 2 to the phraseology. The level was what it was.
 3 THE COURT: I'll sustain. You may rephrase,
 4 Mr. Smoger.
 5 BY MR. SMOGER
 6 Q. Let me just ask a second thing, given the
 7 time. We pointed it out and I've gone through this a
 8 number of times.
 9 If it's 10, then the average that they say,
 10 that's for 1.5 miles out, the average is 11.6, so the
 11 average person is higher than 10?
 12 MR. QUINN: Your Honor --
 13 BY MR. SMOGER
 14 Q. -- is that protective?
 15 MR. QUINN: Your Honor, I object. The
 16 witness said he didn't know about the multitier, so I
 17 didn't ask him anymore questions about that.
 18 THE COURT: I'll sustain the objection.
 19 BY MR. SMOGER
 20 Q. Given the time, we'll go to a couple
 21 questions on air, rather than Mr. Walker's because
 22 he'll be here and we'll get to that later.
 23 Here is a document, I'll show you only two
 24 more documents, the defendants put in Exhibit --
 25 MR. QUINN: I think I only --

1 MR. SMOGER: It's our exhibit. I'm looking
2 for the number.
3 BY MR. SMOGER
4 Q. I'm going to show you the December 17th,
5 1986, given the time and hopefully this letter,
6 because I'm only going show you two, this was a
7 letter that Mr. Quinn just showed you. It was
8 originally our exhibit.
9 And what hadn't been talked about is what is
10 at the bottom of that exhibit. The bottom of that
11 exhibit -- because we talked about the fact that
12 there was no -- on the top of the environmental
13 building, this is where in 1986 there was discussion
14 about the environmental building.
15 What we didn't talk about is one strategy
16 for pushing off the environmental building as a
17 monitor was, "We may however push the monitor back if
18 we can fence off the maximum areas from the public.
19 This requires discussion inhouse and possibly with
20 the city and some action on real estate matters."
21 They're talking in 1986 that they can buy
22 enough land so that they can buy the land where that,
23 where that monitor, where the monitors would be so
24 they can comply with the SIP by buying land, isn't
25 that what this is talking about?

1 aware of this data they had, Mr. Vornberg said that
2 as well?
3 A. As far as I know, that's correct.
4 Q. And the public record, the public is the
5 community of Herculaneum, they didn't want to make a
6 public record and get lawsuits because they didn't
7 want the people to be aware of how high the levels
8 were right where they were living, correct?
9 A. That appears to be the case.
10 MR. SMOGER: Thank you.
11 MR. QUINN: Just leave that one up.
12 THE COURT: Go ahead, Mr. Quinn. Last
13 hurrah.
14 MR. QUINN: Because Mr. Smoger actually
15 mixed -- it wasn't a decade but it was half a decade.
16 THE COURT: Go ahead.
17 **RE-CROSS-EXAMINATION**
18 BY MR. QUINN
19 Q. This document here is talking about a public
20 record for the new Broad Street. They just didn't
21 want to do that. They didn't want to have a Broad
22 Street monitor. This is not about the 1979 issue,
23 because this is back in -- it was later on, right,
24 1982.
25 They're talking about not wanting to put a

1 A. Yes, as opposed to reducing lead emissions
2 into the atmosphere.
3 Q. They didn't do that, either, did they --
4 MR. QUINN: Your Honor --
5 BY MR. SMOGER
6 Q. -- they didn't buy this land?
7 MR. QUINN: -- I object. We didn't go into
8 buy outs, but clearly he knows the buy outs started
9 in that timeframe.
10 THE COURT: Overruled. If Mr. Tarr knows,
11 he may answer.
12 BY MR. SMOGER
13 Q. Did they buy the land where the Broad Street
14 monitor was?
15 A. I don't know the answer to that question.
16 Q. Okay. Final question. Mr. Quinn also
17 showed you Plaintiff's Exhibit 50. Plaintiff's
18 Exhibit 50, what he said is that they didn't want a
19 public record, public record, and the public record
20 was the information that they knew from the
21 environmental monitor they had and that says they
22 didn't want the EPA to be aware of it, we know that
23 from Mr. Vornberg, right?
24 A. I believe that's correct.
25 Q. They didn't want the Missouri DNR to be

1 Broad Street monitor in there because there will be
2 legal action and pollution control money will go into
3 civil settlements as opposed to pollution control,
4 which I think we both agree pollution control is a
5 good idea?
6 A. I don't see where it says Broad Street
7 monitor.
8 MR. QUINN: That's all the questions I have.
9 THE COURT: Thank you. Mr. Tarr, thank you.
10 Have a safe trip.
11 THE WITNESS: Thank you very much.
12 THE COURT: Everyone, happy Memorial Day.
13 Have a good weekend. Thank you all for your time,
14 your attention, your patience and your hard work.
15 Also have a safe Memorial Day weekend because we need
16 you back Tuesday morning at nine o'clock.
17 Ladies and gentlemen, keep in mind, don't
18 discuss this case among yourselves or with others or
19 form or express any opinion about the case, no
20 independent research and don't look or view any
21 report of this trial.
22 Folks, again, please have a good holiday
23 weekend. Take care. Everybody.
24 MR. QUINN: Let's keep Joplin in our
25 prayers.

1 (Proceedings were adjourned.)

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CERTIFICATE

I, Carol A. Vagen, Certified Court Reporter, do hereby certify that I am an Official Court Reporter for the Circuit Court of the City of St. Louis; that I was present and reported all the proceedings had in the case of Alexander, Plaintiff, vs. Fluor, Defendant. I further certify that the foregoing pages contain a true and accurate reproduction of the proceedings.

Carol A. Vagen, RPR