BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
Petition of Royal Fiberglass Pools, Inc., for an Adjusted Standard from 35 IAC 215.301	)	AS 09-4 (Adjusted Standard)

Proceedings held on October 28, 2009, at 10:30 a.m., at the C.E. Brehm Memorial Public Library, 101 South 7th Street, Mt. Vernon, Illinois, before Carol Webb, Hearing Officer.

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APPEARANCES

Board Members present:

(No board members present)

Board Staff Members present:

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INDEX

(No exhibits were marked.)

PROCEEDINGS

(October 28, 2009; 10:30 a.m.)

HEARING OFFICER WEBB: Good morning. My name is Carol Webb. Joining me today is Alisa Liu from the Board's technical unit. This is the hearing for AS 09-4, the petition of Royal Fiberglass Pools for an adjusted standard from 35 Illinois Administrative Code 215.301. It is October 28, 2009, and we are beginning at 10:30 a.m. There are no members of the public present.

At issue today is petitioner's request for relief from the rules pertaining to emissions of volatile organic materials at petitioner's facility at 312 Duncan Road in Dix, Jefferson County. The Pollution Control Board members will make the final decision. My purpose is to conduct the hearing in a neutral and orderly manner so that we have a clear record of the proceedings. I will also assess the credibility of any witnesses on the record at the end of the hearing.

This hearing was noticed pursuant to the Act and the Board's rules and will be conducted pursuant to Sections 101.600 through 101.632 and 104.422 of the Board's procedural rules. At this time I would like to ask the parties to please make their appearances on the record.

MR. GUARIGLIA: Dale Guariglia with Bryan Cave in St. Louis, and with me are Rob Haberlein, who is with Engineering Environmental Consulting Services, and Mr. Cliff Hebert, who is the owner of Royal Fiberglass Pools.

HEARING OFFICER WEBB: Thank you very much.

MR. MATOESIAN: Hello. My name is -- Good morning. My name is Charles Matoesian. I'm appearing for the Illinois Environmental Protection Agency, and with me today is Mr. Andrew Russo, who is an environmental protection engineer. We are appearing mainly to answer questions, and just to state on the record, the -- we recently filed some responses to the second set of questions from the Board. Today we would like to stand on those, and just any follow-ups would have to be in writing if we -- if that's okay with the Board, and the answers as far as follow-up questions to those be in writing, but otherwise, that's all we really have to say. Thank you.

HEARING OFFICER WEBB: Okay. Are there any other preliminary issues anybody wants to bring up? Would the petitioner like to make any opening statement?

MR. GUARIGLIA: No, I do not need to make an opening statement but obviously do want to walk through

the --

HEARING OFFICER WEBB: Yes, sure. Mr. Matoesian, do you have any opening statement?

MR. MATOESIAN: No.

HEARING OFFICER WEBB: All right. Mr. Guariglia, you may begin your case.

MR. GUARIGLIA: May it please the Board?

HEARING OFFICER WEBB: Yes.

MR. GUARIGLIA: Let me first introduce Mr. Cliff Hebert, who is the owner of Royal Fiberglass Pools, and have him just say a few words about the background of the company and what we do.

HEARING OFFICER WEBB: Okay. Mr. Hebert, would you please sit up here just so it's a little easier for the court reporter to hear you? And the court reporter will please swear in the witness.

MR. HEBERT: I'm Cliff Hebert. I'm the owner of Royal Fiberglass Pools.

(Witness sworn.)

HEARING OFFICER WEBB: Go ahead, Mr. Hebert.

MR. HEBERT: I'm Cliff Hebert. I'm owner of Royal Fiberglass Pools. I'm from south Louisiana, so if I speak a little funny, I'm French. We've been in Dix 24 years, we've been manufacturing 23 years, and it's been a

good part of our company. The reason we were up here is because we have dealers in St. Louis and Louisville, Kentucky, and Indianapolis. So we've enjoyed our stay, and I want to thank the Board for allowing us to be here this morning, especially right next to the plant, and hopefully the case we're pleading is because we do have people that are employed that they've been here quite a while. We also have support staff back in Louisiana that supports the -- our mission here in Illinois. So again, I want to thank the Board for allowing us to be here, and we'd like to stay here much longer. Working together, I think we can.

MR. GUARIGLIA: Thank you.

HEARING OFFICER WEBB: Mr. Matoesian, did you have any questions you wanted to ask?

MR. MATOESIAN: No, I did not.

HEARING OFFICER WEBB: And, Ms. Liu, you did not have any questions for this witness, or do you?

MS. LIU: I believe we do have some unanswered questions from the pre-hearing questions from the hearing officer order, and I'm not sure when you're planning to address those.

MR. GUARIGLIA: Dr. Haberlein will address those.

MS. LIU: All right. That's fine. Thank you very much, and good morning.

HEARING OFFICER WEBB: Thank you.

MR. HEBERT: Yes, ma'am. I forgot to introduce my wife, Becky, came up with me, better half.

MR. GUARIGLIA: Before I call Dr. Haberlein and have him testify, I wanted to give some background with regard to the operations of Royal Fiberglass Pools, and most of this is set out in the petition. I thought I would try and cover it here at the public hearing.

We are, you know, seeking an adjusted standard from what's known as the eight pound per hour rule, and we did file our first amended petition July 17, 2009, which does set forth a number of the -- most of the testimony, the detailed testimony of what we are presenting today, and then also Dr. Haberlein will address some of the questions that the Board posed to us last week.

Royal operates a facility, as you are aware, in Dix, Illinois, and manufactures approximately 20 different types of fiberglass swimming pools. They -- You know, the pools range from -- anywhere from, like, 12 feet wide to 16 feet long to 40 feet to, you know, 17 feet wide, so some of these are smaller in nature, some

of them are very large in nature; some take, you know, maybe a day to construct, others may take several days in order to construct them, and it's done in a building -- single building they have in Dix, Illinois, that essentially has three construction bays. A pool would be constructed all in one bay but different operations would take place in that bay. Essentially, two of the bays are the main construction bays for the pools; a third one is for, you know, various other operations.

And in November 2004 Royal did submit an application for a Clean Air Act permit to operate this facility and also amended that this summer in July. As a part of that Clean Air Act permit, Title V permit, Royal has set forth a limit of 29 -- I can't remember the exact number of tons per year, but it is in the permit application. Shortly after originally filing its Title V application in January 2006, IEPA did issue a notice of violation to Royal Pools for alleged violations of the eight pound per hour rule. Representatives of Royal met with IEPA on various occasions, corresponded, and basically was agreed at that point that the best course of action in order to comply with the Illinois environmental regulations, particularly the eight pound per hour rule, would be to seek this adjusted standard,

and it was determined -- it was agreed with IEPA at that point that it did not appear that there were economical or technically feasible options for complying with the eight pound per hour rule, and so that's why we're here today.

Let me spend just a minute or two talking about composite pool manufacturing procedures, which I find fairly fascinating, but it's -- and there's some pictures, I think, in the first amended petition, but essentially it is taking a mold of a pool, a wax mold, which is essentially -- looks like a pool only turned upside down, and so instead of a pool shape, you've got a mound shape, and you will then -- they will then spray what is called a gelcoat, a thin layer of this gelcoat on the outside of the mold, which then actually becomes the inside layer, the finished layer of the inside of the pool. That is done with a gelcoat that has approximately about 27 percent styrene, which is a hazardous air pollutant, and about 3 percent methyl --

DR. HABERLEIN: Methyl methacrylate.

MR. GUARIGLIA: Methacrylate. Thank you. After that you have various layers of resin and fiberglass that are put onto the back of the pool in order to provide a thickness and strength for the pool,

and those resins also do have hazardous air pollutants as a part of them. The gelcoat is put on with an atomized spray gun. The resin application is using a non-atomized spray gun, and that is being done to comply with the MACT standard, which I will talk about here shortly.

The -- We have set forth in the first amended petition some of the VOM emission estimates for this operation, and it is an operation that is going to -- the emissions are going to vary depending upon the size of the pool that's being done and the number of pools that are being manufactured at one time, and so it's -- because of the process, where it is a hands-on process where you have a person spraying on resin with a gun and then another person rolling it out with a roller to flatten it and to give it strength, the exact amount of resin or gelcoat that is used is going to vary slightly from pool to pool, and so there's no way to exactly measure exactly how much of resin or how much of gelcoat is going to be used on each pool, but, you know, for the most part, it's fairly consistent.

From -- Royal did hire Dr. Haberlein in order to assist with estimating what the emissions would be from the pool manufacturing, and our estimates are set forth in here that the average VOM emissions per pool for the

gelcoating process is 53.8 pounds of VOM. The resin process is average 94.4 pounds of VOM, which is a total of 148 pounds of VOM per pool, and obviously the larger pools are going to have more; the smaller pools would be less. The current Clean Air Act permit application estimates that the Dix plant's maximum VOM emissions would be 29.76 tons per year. 27.54 of those tons would relate to styrene emissions, and that would be based upon a -- manufacturing 400 pools at the facility, which the Dix plant has not done in the past. We are hoping -- Royal is hoping that with the better economy that is hopefully on the horizon that people will again start buying swimming pools and that they will be able to pick up production, because right now production is slower than it has been in the past few years.

I did make brief mention of the composites -- what's commonly referred to as the composites MACT that EPA -- federal EPA has issued a MACT standard for the composites -- plastic composite manufacturing facility, which is specifically applicable to Royal's operations, and that does impose certain restrictions upon the amount of hazardous air pollutants that can be included in the materials that are used and certain operating procedures. The -- Royal has been in compliance with the composites

MACT since February 2006 and has been in compliance by a very healthy margin over the last couple years.

One thing that is interesting to note about the composites MACT and EPA's promulgation and finalization of that is that at the time it was issued, EPA did look at, you know, whether add-on controls, whether emission controls, end-of-stack controls would be appropriate for this type of industry and did conclude that those end-of-stack controls would not be appropriate for technological reasons, for economic reasons, and so therefore did not impose those upon the plastics composites manufacturing business.

Let me now call Dr. Haberlein to the stand and have him sworn in and have him give his testimony.

HEARING OFFICER WEBB: Will the court reporter please swear in the witness?

(Witness sworn.)

DR. ROBERT A. HABERLEIN, produced, sworn and examined on behalf of the Petitioner, testified as follows:

EXAMINATION

BY MR. GUARIGLIA:

Q. Dr. Haberlein, could you summarize for the Board your educational background?

A. I have a Ph.D. in mechanical engineering from the University of Kansas.

Q. And undergrad?

A. I have a bachelor of engineering degree from Wichita State University, also Kansas, and a master's degree from the University of Kansas as well, also engineering.

Q. Would you summarize for the Board some of your relevant work history as it relates to fiberglass parts manufacturing and air emission -- estimating air emission controls?

A. Yes. I was introduced to reinforced plastics because I got a job at Cobalt Boats in Neodesha, Kansas. They hired me as their engineering manager, which I did for two years. The company owner came to me and said, you should go back to school, so that's why I ended up getting a Ph.D. But that's how I got introduced to composites, so I actually operated a boat plant for a couple of years. Boat plants are also fiberglass users. They make boats out of fiberglass, and these boats, although they weren't quite as large as the boats at -- the pools at Royal, they were close. Our largest boat was a 40-foot boat, so it was essentially as big as the length that they use as one of these pools.

I -- When I got -- When I finished my -- I started working as a consultant in 1984 for local composite shops, solving ventilation problems for OSHA compliance. When I graduated from University of Kansas in 1990, I was faced with a decision of what I was going to do with myself, decided to continue to consult rather than teach. The people I had been working for offered me a partnership in a small consulting firm in D.C. who was lead by the former administrator of OSHA -- he was a junior administrator at OSHA -- and so I took them up on that. He died of cancer fairly shortly after that and I essentially took over the company. I am sole proprietor at this point. I have a couple of folks that work for me as a subcontractor.

I represent -- Over the last 26 years I've been working for the entire spectrum of people that make composites, both large and small. I work for large corporations that have many plants; I work for mom-and-pop operations like Royal Pools. Somewhere in the I'd say mid -- well, early '90s I got involved with the promulgation of the composites MACT. I ended up working aboard the -- what was then called the Composites Fabrication Association, which is now called the American Composites Manufacturing Association, as their technical

lead on all of the technical issues involving MACT. I got to know the first author of the MACT rule, Madeleine Strum; I got to know the second author of the composites MACT rule quite well, Keith Barnett; and I'm in contact on a fairly routine basis with Steve Shedd, who is also involved as a caretaker of the MACT rule. I have directly asked for modifications to the composites MACT that have been made.

During this period we recognized the fact that the AP-42 factors that USEPA had developed for this industry were inaccurate, so the trade association asked me to develop a new set of emission factors called the UEF. I developed those emission factors and presented them to USEPA. They have since begrudgingly accepted them in the AP-42, and they're also the basis -- the actual only basis for the table 1 equations in the MACT -- composites MACT rule, which establish HAP emissions. So in effect, everybody in this country uses the emission factors I developed.

I continue to make changes to the UEF factors through the ANSI process. The American National Standards Institute has created a subgroup to allow public and governmental agencies to make modifications to the UEF. I have put in three petitions which have been

accepted and I have one petition pending, which I think will be accepted, to modify the UEF. I believe only one other person has made a change, so I'm the most active person as far as developing and maintaining these factors.

Q. The -- Could you summarize your work relating to -- work you've done for some of your clients relating to calculating air emissions, also emission controls that may be required to control emissions for such companies?

A. These activities take place through the permitting work that I do for companies. Oftentimes a company will either start up and need a permit -- that requires that they do modeling as part of the permitting effort, so I discovered back in the early '90s that there were a number of models being developed by USEPA for that use. Nobody was doing the modeling. I did my master's thesis on modeling, so I figured it was a perfect fit, so I taught myself how to do these models and I kind of grew up with the EPA as far as learning how these models should be used and how to use them. I am really not the world's authority on dispersion modeling. There are other people that are, but I can understand these models at the code level, which means I can go into the actual

code and make changes or make comments and -- because I am a programer, you know, by training, and I've done that on occasion when there were issues before EPA and they didn't understand their own models.

Q. Thank you. I want to talk a little bit about the investigation that you did, the review you did of compliance alternatives for Royal for reducing their VOM emissions from their manufacturing operations. The -- Are you familiar with alternative methods for manufacturing fiberglass parts other than open mold?

A. Yes.

Q. And could you explain for the Board what some of those other methods of manufacturing fiberglass products are other than open mold, which is used by Royal?

A. A detailed discussion would take hours, but I can -- because there's so much diversity in this industry. There's just -- We make everything from wind blades to widgets that go in computers. It's just a huge industry, so all of the techniques that are available to make parts are too -- however, swimming pools, really the only thing that is doable and is practical or could be done would be to try to do some type of closed molding operation where you would essentially build a giant tool

that would then smash down and do the process through closed molding.

The problem with that, why it's not feasible for Royal beyond just the fact that it's exorbitantly expensive, is that the tooling itself could only be one part and the technical challenges would task a company of thousands. It would not be something that a company that has eight employees could undertake. There's just not the manpower or the expertise, and nobody's doing it. No one has done it, so it's not really -- to say, could you do it through a closed molding process, you know, the answer would be yeah. Can it be done feasibly? No. Can it be done affordably? No. And there may even be practical issues about whether a person who tried to undertake it, if they could do it. But closed molding would actually be -- you know, could conceivably handle the resin portion of the process where they would inject the resin instead of apply it with a non-atomized applicator. They still have to apply the gelcoat with a spray gun. There is no technology that does that in closed molds. There is no technology that applies coating to the mold beyond what they're doing right now. They are state-of-the-art for the way you apply gelcoat.

Q. So the other fiberglass pool manufacturers

that you're aware of were not using other methods other than open mold manufacturing?

A. All the other swimming pool manufacturers who are my clients are doing exactly what they do at the Dix plant.

Q. As a part of your work for Royal, did you review the feasibility and cost of add-on pollution controls for Royal's facility?

A. Yes.

Q. And what air pollution controls did you consider?

A. There are a number of controls. Part of the work I did for the MACT promulgation, which is in the docket, was a 400-some-page report called "Feasibility and Cost of Add-on Controls for Reinforced Plastics." That was a document that we submitted to USEPA during the MACT promulgation which helped them understand the costs, and their -- they concluded that the cost to control would be beyond the reach of the majority of the industry.

There is a detailed discussion in that report that talks about all of the exotic control technologies that have been considered for this particular industry. Only oxidation works for a variety of scientific reasons.

There are two versions of oxidation. One is preconcentration and oxidation; the other is just straight oxidation. I looked at both of those technologies for this facility and discovered that the cost would be -- the best -- cheapest would be over $18,000 per ton, and that's typically called cost effectiveness and that's typically how EPA makes an assessment, but we discovered during the MACT promulgation that there are other cost issues, especially for small businesses. That's one of the reasons that EPA decided not to require cost control. You can look at cost per ton, and that's the way the EPA likes to do it, but there's the capital cost, the capital cost to actually purchase the equipment, and it's one thing if you're a large refiner -- a three million dollar investment is fine -- but when you're an eight-man company, a three million dollar investment is beyond reach.

So that actually has been anticipated by USEPA. The EPA economists have sat down and discussed looking at the affordability of costs based on a percent of capitalization of the facility, and they've established some guidelines. Mr. Hebert's facility would be so beyond that guideline, it pales. It's one. Second is

operating cost. A facility that operates controls at a cost that's beyond their profit cannot afford the controls regardless of the cost per ton, so in Mr. Hebert's case, the same thing applies, that he won't make a profit if he tries to run these controls. So the fact that it's $18,000 per ton, which is much more than is considered to be affordable, is sort of moot when you consider the fact that he can't get the money to invest it and he couldn't operate and make a profit. So in this case, add-on controls are clearly not affordable and they're not feasible.

Q. What about the operations at this facility or other pool manufacturing facilities are driving that cost? What about those operations would cause them to -- that the cost is so great that it needs a -- that the system would not be able to handle it?

A. I think you're referring to why are the costs so high.

Q. Yes.

A. Yeah, okay. When you make a very large part using a substance that has -- it's reasonably toxic to the workers, you need a large airflow to control exposures. You also need a large airflow to control flammability. There are a number of OSHA requirements

that you use a certain amount of airflow in parts. If you look at those -- Mr. Hebert's facility is using a large amount of airflow to control those exposures and flammability issues. It's a dilute stream, very large airflow, so it makes it very difficult to try to get a concentrated smaller stream that might be affordable.

Q. Dr. Haberlein, as a part of your work for Royal, did you prepare an air impact analysis that looked at VOM emissions from Royal's facility?

A. Yes.

Q. How did you conduct that air impact analysis?

A. We looked only at ozone and we used the Scheffe table to get an estimate of what we considered the worst case and conservative estimate of the ozone impact.

Q. And the Scheffe table is?

A. How much time do you want me to spend on that question?

Q. It's an EPA guidance document?

A. Yes, it is.

Q. What were the results of the air impact analysis you conducted?

A. It turns out the Scheffe table is used as a

shortcut method to try to get an estimate of the ozone that might be caused by emissions from a stationary source. Photochemical modeling is conducted by EPA at the regional level, typically in airsheds. We're talking about air boxes that cover hundreds of kilometers with inputs from thousands, maybe tens of thousands of sources using sophisticated atmospheric chemistry and sunlight and transport. Turns out that NOx controls the ozone formation in most areas, these rural areas. Now, that's not the case in urban areas, but in this case it's -- in Royal's case, I consider it to be a rural area. So how does an individual source do such a model? It is beyond the ability of many of the local EPA offices. You sure wouldn't expect an eight-man company to do it or -- and I can't do it. EPA can't do it.

So they developed a shortcut method. An expert, Mr. Scheffe, who is truly an expert in ozone modeling, came up with the idea of coming up with a table. This table would enable stationary sources to show compliance with the one-hour ozone standard that has been in effect, and he put down a lot of reservations using the table, that, you know, it had a limited use, but EPA felt a need to check off a box that a model was done for a stationary source because it is part of the Clean Air Act, and this

allowed somebody to do that without going through what would be perhaps a $100,000 modeling exercise.

Q. And did your analysis show that the VOM emissions from Royal's facility would have a negligible impact on ozone formation?

A. Well, the word negligible was mine. The table doesn't have negligible in it, so -- and I had a reason for using that word. The table entry is the lowest table entry. It's four parts per billion. It's all the way to the left and the top. The way the table is organized, you -- if you go to the top and to the left, the number goes down. If you go to the bottom and the right, the number goes up. At the upper left-hand corner you have four parts per billion, and that is the lowest the table will yield. I believe it's even lower, and I believe it for several reasons.

First of all, Royal's emissions are much less than the 50 tons per year that are at that table line, so they're actually way above the table, or at least above the table. They're 29 tons. You'll also notice in the table that it doesn't really matter if you're 100 tons or 75 tons or 50 tons if you're over there on -- all the way to the left, because really you're down in the noise of the model at that point, so it makes no difference if

you're greater than 20 -- the ratio between VOM and NOx is greater than 20. If you're in that column, you can be a 100-ton source and you'll have the same impact, according to the table.

In fact, the Royal operation is way to the left of the table. This is not a NOx emitter. They emit a tiny amount of NOx, on the order of a few hundred pounds in the winter, which is not known for ozone exceedances, and otherwise they're not emitting any NOx. They're not a power plant. They're not a SiMETCO. They don't have a big boiler on site. They're not a smelter. They're not a foundry. They're not a source of NOx. They're not an urban center that has a million cars driving to and from work that are emitting NOx. As part of the research I conducted to prepare for this board hearing, I discovered that EPA has come to the conclusion that NOx and NOx transport to rural areas is the reason that you have ozone exceedances. I can't show you the data because I don't have it, but I believe that's the case here. Now, what that means is clear. What that means is that it's the NOx that's causing the problem, not the VOM, so the tiny bit of VOM that's emitted by this facility is not going to have any impact on the ozone exceedances in this area, and that's where my conclusion that it's negligible

comes from.

There is more, however. I believe the actual worst case is probably much less than four ppb. That's why I said it was negligible. It's NOx limited in this area most likely, so increases in VOM aren't going to matter. It's the NOx that comes in from St. Louis that matters. And one last thing. Just think about it in terms of common sense. If you think that adding a 29-ton source is going to add four ppb, well, if you add ten sources, you're going to add 40 ppb? And there are at least 100 of these little sources, I'm guessing, in Jefferson County if you take a hard look, so is that addition of 29 tons going to add another 400 ppb, which is, you know, many, many times the limit? No. I mean, common sense tells you that you can't use the table just to add and add and add. Now, in fact, photochemical modeling takes everybody into this giant box and puts all of their stuff in, and because of that, the little bit that would be added by his facility isn't really going to matter.

Q. Is it true that since Royal is currently operating and has been for several years at this facility in Dix, Illinois, its air emissions have not increased ozone formation from the levels they are at now?

A. That goes to the common sense point that I just made. If you were to shut them down -- First of all, they're not a 29-ton source, but if you were to shut them down -- let's say they're a 12-ton source or a 20-ton source right now. If you shut them down tomorrow, deny the application, for example, it isn't going to make any difference in what the ozone level is. Same amount of NOx is still going to float in from St. Louis and there's still VOC in this atmosphere. You're going to have the same level, and if that's the case, then their impact is truly negligible.

Q. The Board filed some follow-up questions last week that it's asked Royal to respond to, and I have a number of questions for you, Dr. Haberlein, regarding those questions so you can respond to those on behalf of Royal. You've read those questions?

A. Yes.

Q. Board question 2 references a USEPA guidance document and a USDA letter. Are you familiar with those documents?

A. Yes.

Q. Are these documents relevant to Royal's emissions of VOMs and its effect on ozone formation?

A. No.

Q. Could you explain that?

A. Well, I mean, that's kind of a hard question to answer yes and no. They certainly reference the topic and the issue, but are they applicable to this situation? The answer to that is no, and the reason why is the Scheffe table was initially designed to be a one-hour table. There is no provision for applying a screening factor to the Scheffe table to get an eight-hour average. If you look at the reference -- and there was I think a miswording in the Board's question. USEPA does not have screening factors for ozone impacts. Those are for air toxics impacts, for the simple Gaussian plume dispersion, and those screening factors are used -- I use them. I use them all the time when I do a screen model or a CT screen model or an ISC model. I -- Not ISC, but for all the screening models I use the factors.

If you look carefully at their reference, if you look at the first page of the reference, it says that it should be used for chemically stable substances, and ozone formation is not chemically stable. It is highly reactive. In fact, if you go backwards and look at the other source documents where these factors are used, like the T screen references or the original equation, which I have a copy of there, that was used to develop these

screening factors, in all cases the USEPA reference says, shall be used for chemically stable or non-reactive substances. They're referring to Gaussian plume dispersion where you have a substance that's being emitted by a facility, it disperses locally, usually touches down within a few hundred meters and you get an impact. The screening models develop a one-hour number based on one-hour data that was developed by Pasquale, who was the guy that originally developed this, and it's reasonably accurate. I got some plots I can show you of models, and you can see from just looking at the plots that those screening levels make sense. But the only thing that a photochemical model and a dispersion model have in common is the word model. They are completely different, and these screening factors that have been suggested to be used, that use isn't appropriate.

Q. And so these documents are not appropriate for scaling air quality impacts from a one-hour ozone standard to an eight-hour standard?

A. That is correct.

Q. Are you aware of any EPA or IEPA guidance documents which provide guidance regarding scaling air quality impacts from a one-hour ozone standard to an eight-hour ozone standard?

A. I have been told directly by EPA there is no guidance on the subject by the form of documents or any guidance. There's no -- And it's not just Illinois EPA. It's most of the EPA agencies don't have any guidance on how to do this. Federal EPA is still struggling with how to do this. This is -- That's why the Scheffe table was created originally when they were struggling with the one-hour standard. It's beyond the resource base of most local EPA offices to do this, because these models are difficult to do for airsheds, let alone try to do it for every stationary source within the airshed.

Q. In the Board's follow-up questions, they made reference to some ozone monitoring data for eight-hour and one-hour monitoring that has been done. Were you aware of that data --

A. Yes.

Q. -- previously? Based on this data and the EPA guidance reference in the Board's questions, is it proper to use a scaling factor to estimate an eight-hour ozone increment from a one-hour increment?

A. No.

Q. Based on the information provided in the Board's follow-up questions, do you still believe that Royal's emissions will have a negligible effect on air

quality?

A. Yes.

Q. In Board question 3 it discusses placing conditions in the adjusted standard limiting Royal's VOM emissions on ozone action days. Question 3(a) sets forth an equation for -- which identifies a maximum daily amount of VOMs that might be emitted from the facility. Could you comment upon the equation that's set forth in the Board's questions?

A. You know, I'd like to make a comment on that but perhaps not address the question directly, and this may be a bit oblique, but with your permission, I -- bear with me. I'll indicate why I disagree with the Board. That question is like the dog -- the tail wagging the dog. I think we could debate and probably find a number that would somehow represent a maximum hourly emission from a facility. The problem is that there is no record-keeping scheme that an eight-man company can implement to actually show compliance with that. Typically, when I encounter this at the state level when I'm working with state agencies over permitting language conditions, I always point out that don't write a condition in a permit unless there's some way to keep track of it and therefore you can enforce it, and so I'd

rather maybe address that first before we start talking about the number, because if there's no way to do it, then why even try to come up with a number that makes sense?

Q. What would be some of the problems in trying to keep track of it?

A. Okay. You're asking an eight-man company to figure out a way to measure the amount of material they use on a daily basis, do a calculation of that material to determine if they're in compliance with the limit.

Q. What would that involve?

A. They have material scattered around the facility in five-gallon pails, 55-gallon drums and much larger square boxes called totes. You could conceivably weigh those drums, although that would be a maintenance challenge, but typically what you have to do would be in the morning go around with a bunch of sticks and put the stick down into the vessel, pull the stick out and see what the depth is, write that number down. There's a risk -- and it's a real risk -- of contaminating the material when you do that, and understand even a speck of sawdust will screw up the equipment; now you're down. So people do sticking of their tanks with great reluctance because they usually have a problem if they do it over

and over again.

But in this case you'd have to go -- somebody would have to go around with a clipboard and put a stick in all of the drums and pails and totes in the facility and write those numbers down, and then during the day, when a new tote was brought in or a new drum was brought in, you'd have to make note that the drum had been moved out and a new one had been brought in. You'd have to check to see how much was left in the bottom, because there's always some left at the bottom. I guess you could try to stick it. You wouldn't get a very accurate amount. And then at the end of the day you have to go around and find the ones you sticked before and restick them so you get the difference, meanwhile keeping track of what was new and what was old.

That person would have to go into the office before they left for work -- left from work and do the mathematics associated with figuring out how much we used of what material and then input it into a program -- I've developed a program you could probably do that to -- and come up with a number, and until then they wouldn't know if they were in compliance or not. There could be a math error. At any step that math error could either underpredict or overpredict the emissions. So it would

become what I call a logistic and record-keeping nightmare to try to do such a thing.

This was discussed with federal EPA. Federal EPA wanted us to have real time, you know, record-keeping and reporting as part of the MACT standard, and we went through this a year. They had to actually visit three facilities to understand the scope of the problem, and that's why they ended up at the end of the rule making it into a monthly record that is kept, and it's based on purchases, because they recognized that it's so difficult to keep track of all these materials that there really was no other way to do it.

Q. In the Board's questions it makes reference to the possibility of a condition upon Royal if there was ozone action days in East St. Louis, how workable it would be to monitor those ozone action days and then take steps to limit VOM emissions or base the production for Royal on those days. From your experience in, you know, operating a -- or managing a facility, how difficult would that be to -- logistically to be checking for ozone action days every day and dealing with workers' schedules and things like that?

A. It would be the first time I have ever seen that applied to a composite shop in my years. I have a

client, the largest emitter of styrene in L.A., in the South Coast Air Quality Management District. That facility is subject to many programs to try to limit emissions during ozone events, and they have ozone events there all the time, and those ozone events probably would be affected by their VOC emissions, because there, they're VOC limited. They have lots of NOx, so it's the VOC that causes increases. Every single thing that they're subject to, that I'm aware of, at least, is voluntary, because South Coast recognizes that there's just no workable way a company can call someone up and then turn around and call all their employees and tell them, don't come. It's just not a workable solution. It's not practical to do that.

And I have one other thought about this as far as the purpose of it, even if you were to force the company to do it, okay? I'm not understanding the purpose. If the purpose is to try to somehow reduce the ozone in Jefferson County by having their workers stay home, recognize that it's the NOx coming over from St. Louis that's causing the problem, not the VOC from his facility. So let's say there is an event in East St. Louis, because there's a whole lot of NOx over there. That stuff's floating over here. There's plenty of VOC

around here. It's VOC dominated. So it's the NOx that's controlling it, so if these people stay home, they're going to have exactly the same impact because it's the NOx that's driving this area.

MR. GUARIGLIA: Thank you. I don't have any further questions.

HEARING OFFICER WEBB: Okay. Mr. Matoesian, do you have any questions?

MR. MATOESIAN: No questions.

HEARING OFFICER WEBB: Okay. Ms. Liu, I'm sure you have a few questions.

EXAMINATION

BY MS. LIU:

Q. Good morning, Doctor.

A. Good morning.

Q. Thank you for making the very long trip to be with us today and for the history of your background. That was fascinating to listen to that. It's nice to actually meet the person behind a lot of those USEPA numbers we see, so welcome. The last subject that you have been talking about deals with some sort of a way to limit operations during ozone action days, and that's kind of a condition that's a little bit of a wild card here. Illinois EPA has expressed an interest in perhaps

a voluntary way to do it, and you've also expressed the logistical difficulty in actually implementing something, whether or not it's a mandatory requirement or as a voluntary means of addressing it. One of the things that you mentioned was how difficult it would actually be to monitor the VOM emissions without having to go through some very tedious tasks that actually might impact product quality.

I noticed, though, in the first amended petition in Exhibit 2, there's a table, Exhibit C, that provides estimates of maximum hourly usage of certain materials depending on the type of pool, the type of coating and the type of phase that it is in production. I was wondering if logistically it might be simpler to have an idea of what the facility was planning to do that day and to simply go to the table to get an idea of how much they would be emitting that day other than doing measurements around the facility that might actually impact product quality. I don't know if you're familiar enough with the daily operations to say whether or not that would be logistically possible or not.

A. I just was -- didn't know if you were finished asking the question or not. Yeah, if -- first of all, that table, I asked them to prepare that for me

because I was trying to get a grip on how much material they actually -- how much gelcoat they actually use. That's -- was really the initial emphasis of this, because it was the gelcoating operation that led to the violation notice, and I really wasn't comfortable, because they had just changed their gelcoating operation, that I knew what the number was. You'll notice that the number went up significantly from when I first started to when we did the last bid, and that wasn't an oversight. It was just they didn't know, so I asked them to actually measure those numbers, and they went to a lot of trouble to come up with that data. It was a one-time thing. It wasn't done --

Q. It's very complete.

A. Yeah. It wasn't done every day. It was, you know, do this, do that. It was very difficult for them to come up with that data, and I thank you for doing it, because it helped. What you're referring to is what I typically call the bill of material approach, okay? I got into this in Arkansas with the boat manufacturer and the Arkansas DEQ, for example; you know how many boats you're building, you know what boats are -- what boats take on the average, so can't you come up with some way that you're keeping track of what you're making that you

can't keep track of your emissions, and that's the bill of material approach. In their case --

Q. Bill and material?

A. Bill of material.

Q. Bill of material?

A. You see, every boat has a bill of material, you know, how many cleats and seats and, you know, speedometers and also how many pounds of gelcoat and how many pounds of resin, so it's sort of logical that you could use the bill of material to come up with a scheme for doing, you know, emissions on a daily basis, okay? The problem in Arkansas was that their bill of material was horrible, that the bill of material had been just sort of created on the fly as a guess, and so it was so inaccurate, there were these huge discrepancies between the boats they build and how much material they use, which is, you know, a real problem for a lot of reasons beyond just emissions. So there's that problem with it. It's just if you try to say that, okay, Royal is -- builds 14 pool models, they also do it in a number of different colors, so we're going to have to deal with the fact that there are different colors and different model sizes; let's just develop a pounds per day for each one of these pools, and if we know what you're making today,

we can just estimate the emissions. It sounds logical. That's why I call it the bill of material approach. The problem is they don't build a pool a day. They might build two little pools in one day, but more likely they're going to build a part of a pool today, they may gelcoat a large pool today, and then they may do part of the resin tomorrow and then they may do a little bit more of the resin the next day and then they finish it the fourth, or they may make a pool and a half in one day and then do another pool in a day. So they don't make a part that you can attribute to a day, so the bill of material won't work because I don't know what part of the bill of material got used in the day I'm trying to add up. That's just, I think, impossible just because of how they're making their stuff there. That's why that approach won't work.

Q. It would be very intensive on a personnel level, wouldn't it, to have someone there for the sole purpose of tracking --

A. Material.

Q. -- the forecast as well as what they were going to do that day just to make sure it was at a certain --

A. I don't even think -- What you've suggested

is -- I do follow you and I understand where you're headed with that. It isn't just intensive. I don't think they have a way to do it.

Q. Okay.

A. Here's why. When they add resin to the -- The gelcoat they do in an hour or thereabouts. That's why I had them focus on that, because it was clear. There's another thing too. Oftentimes the EPA will suggest that, well, why don't you chop your operation up into parts and that way you can deal with our rule and we don't have to deal with you. You know how many times I've been told to put in 20 guns because we have a rule on a gun, and if we have 20 guns, you can do it; I don't care if you use them, as long as they're there. It's, you know, that type of thing to get around a difficult rule. This is a very difficult rule for them, for the Illinois EPA. They created this rule some time ago, and in my conversations with them, it's an extraordinarily difficult rule. I would guess that there are hundreds, perhaps thousands of companies that are violating this rule right now. You just haven't found them yet, and if they were all here today, you'd be having one hearing after another after another after another asking for an adjusted standard on this rule.

And Illinois is not alone. Ohio EPA is struggling with exactly the same thing, and I'm involved intimately with their 840 rule. They're on the verge of getting rid of that rule because they've found it to be unworkable as well. At least they have an off ramp. They call it a G(9)(g) where you can do a study and get out of it without going through the Board. So it's an extraordinarily difficult rule for a small fabricator to deal with anyway, and the states have trouble with it.

So, you know, I'm looking for a way to make this work. The problem here in particular that just makes it impossible, makes it clearly impossible and there's just no way around it, is the fact that they have to apply all of this gelcoat at one time, and the rule doesn't allow you to chop it up into different guns. It's just that much from the unit. So they're putting -- as you see, putting down all of this gelcoat on this large part. They don't have a choice. They can't put a little bit over here and a little bit over there, a little bit over here, or put it on with ten guns somehow. They've got to put it on in one hour because it's the finish and it can't have any gaps or seams on it, and so because of that -- and that's why that document was prepared, to show you the scope of the problem. They're in order of

magnitude greater -- more than in order of magnitude greater of the eight pounds, and there's just no way around it.

And just to go a bit farther, just -- I told him to shut me up, but, see, I didn't tell you that, so just -- you can tell me I've said enough if you'd like. There's another problem that's greater, actually, than their issue, and I'm sort of talking for the association now. People want to build wind blades. People want to build underground storage tanks. People want to build large boats, or will hopefully some day want to build large boats again in this state. You can't do any of that in composites in Illinois. I've had at least one company come to me that wanted to site a wind blade facility here, and I told them, don't do it because you'll be in front of the Board and it's going to cost you $50,000, and so they went to North Dakota. It's -- You've created a barrier for anybody to make large composites parts in the state of Illinois that's impossible to meet, because who wants to come here and deal with this? Who wants to hire Dale and me to sit in front of the Board for -- how many years now is it again, Dale, we've been doing this? And it -- so it's a barrier, and if you look at the documents and see the

issue and -- you'll understand it's a barrier. It's not just something I'm saying. It really is a problem, because you got to put gelcoat on the part all at once. It's in about an hour, and if you make anything bigger than a bathtub, you can't meet it.

MS. LIU: Thank you very much, Doctor. Thank you.

FURTHER EXAMINATION

BY MR. GUARIGLIA:

Q. I have one follow-up question, Dr. Haberlein. With regard to the condition that was proposed in the Board's follow-up questions with regard to checking ozone in East St. Louis and limiting the amounts of production, would such a limitation have any negligible effect on ozone formation --

A. I -- As I've explained --

Q. -- in your opinion?

A. As I've explained in all my rambling testimony here, I don't see how it would have any real impact on -- that's why I said I thought it was negligible.

MR. GUARIGLIA: Thank you.

HEARING OFFICER WEBB: Alisa, were you done? Did you have anything else?

MS. LIU: I don't have any further questions for you, Doctor, but I do have some for the Agency as a follow-up to what they had filed yesterday, but thank you again so much for --

DR. HABERLEIN: Thank you very much.

MS. LIU: -- going to the depth that you did. Thank you.

HEARING OFFICER WEBB: Before we get to those, Mr. Guariglia, do you have anything else you would like to present before we move on to the Agency?

MR. GUARIGLIA: Let me follow up with a few concluding remarks, unless we're going to do --

HEARING OFFICER WEBB: I -- Yeah, we'll do that, but, yeah, we'll do closing statements at the end.

MR. GUARIGLIA: I'll just stick it in at the closing.

HEARING OFFICER WEBB: All right. Mr. Matoesian, you do not have anything you had planned to present today, but you do have a witness --

MR. MATOESIAN: Yes.

HEARING OFFICER WEBB: -- who may be able to answer some of the questions that --

MR. MATOESIAN: Maybe some questions.

HEARING OFFICER WEBB: Okay. Well, if we

could call your witness to the stand, please, if that would be all right, and the court please swear in the witness.

(Witness sworn.)

HEARING OFFICER WEBB: Okay. I guess we'll go ahead and begin with Ms. Liu, unless anybody else -- unless you care to --

MR. GUARIGLIA: No.

HEARING OFFICER WEBB: Okay.

MR. GUARIGLIA: As long as I can reserve the right to ask questions in follow-up.

HEARING OFFICER WEBB: Absolutely.

ANDREW J. RUSSO, produced, sworn and examined on behalf of the Agency, testified as follows:

EXAMINATION

BY MS. LIU:

Q. Good morning, Mr. Russo.

A. Good morning.

Q. Thank you for coming today.

A. You're welcome.

Q. The Agency's recommendation -- excuse my voice -- included five proposed conditions. I believe Royal proposed three and the Agency proposed five. There's a condition D on page 7 of the recommendation,

and I'll restate it. It says, "The relief granted in this proceeding shall be limited to the emissions activities at Royal's Dix facility as of the date of this filing." Royal's original petition indicated that they had a production level of around 220 pools per year but there was a desire to go to 400 pools per year as a cap. I just was wondering if you could please clarify whether or not the Agency's proposed condition to limit the emissions activities actually related only to the types of emissions activities or was it meant to relate to the level or the amount of emissions?

A. I can't answer that today, but we'll get back to you in writing on that.

Q. Okay.

HEARING OFFICER WEBB: Before we continue, I think we -- did we remember to mention on the record who this witness is? I think we may have jumped into the question, so if we could -- that's okay. My fault. Not yours.

MS. LIU: Was he sworn in?

HEARING OFFICER WEBB: He was sworn, yes, but you are -- your name, sir?

MR. RUSSO: My name is Andrew Russo.

HEARING OFFICER WEBB: And your position

with the IEPA is?

MR. RUSSO: I'm an environmental protection engineer with the Bureau of Air, Division of Pollution Control, air quality planning section and regulatory unit.

HEARING OFFICER WEBB: And your role in this proceeding was?

MR. RUSSO: To consult with the petitioner and review their petition prior to their filing it.

HEARING OFFICER WEBB: All right. Did you have any other questions? Okay. Thank you.

Q. (By Ms. Liu) Thank you for hanging in there with me. Yesterday the Illinois EPA filed a response to some of the pre-hearing questions that we had had, and in the response to question 21(d) of the hearing officer order, the Agency talks about the scaling factors and whether or not it was appropriate to use those when applying the ozone increment, and the Agency makes the statement that it doesn't endorse the use of scaling factors that are based on steady-state assumptions, and then it goes on to say that ozone is not steady-state. I was wondering if there was a contradiction there, if it needed to be clarified. Did the Agency mean that they didn't endorse scaling factors for non-steady-state

assumptions other than steady-state?

A. I don't know the answer to that, and if possible, we'd like to reply in writing.

Q. Okay. Further on in that response, on page 3, it talks about a combined ozone increment and ozone design value of 72 parts per million. Just wanted to make sure, I think they meant parts per billion?

A. I think you are correct about that.

Q. And then the other question I had was they do talk about the ozone design value being 73 parts per billion, but then they talk about a combined ozone increment and ozone design value of 72, and I was wondering how it goes down when you combine the two, or was that an oversight?

A. The air quality analysis or impact analysis that has been provided, questions regarding that can be answered in writing, and we will be happy to do that.

MS. LIU: Okay. If you will bear with me, I thank you very much for all your answers. Was there any follow-up that Royal's counsel wanted to --

MR. GUARIGLIA: We do not have any questions. I don't think we have any questions of this witness.

HEARING OFFICER WEBB: You do not have any

questions? No one has any further questions for this witness? Okay. Thank you, sir. Okay.

MR. RUSSO: If I could have a comment off the record?

HEARING OFFICER WEBB: Well, we don't usually do that. Why don't you talk to your lawyer first. We'll go off the record for a moment so you can talk to your lawyer.

(Discussion held off the record.)

HEARING OFFICER WEBB: We've just had an off-the-record conversation about some procedural matters. Because the EPA -- IEPA did not have their witness here who was able to answer some of the Board's questions, the parties have agreed that the IEPA will file written responses to Ms. Liu's questions based on the language that is in the transcript. We will be getting the transcript by November 9, and the Board will get that up on our web site as quickly as possible. The IEPA will file written responses to the Board's questions by November 16, and the petitioner is planning to file any response to the IEPA's written answers in the same document as a post-hearing brief by December 7, so petitioner -- by December 7, petitioner will file a document that will constitute their post-hearing brief

and their rely to the IEPA's written answers. The IEPA's post-hearing brief will also be due by December 7, and, Mr. Matoesian, you will let me know if the Agency decides not to file a post-hearing brief --

MR. MATOESIAN: Sure.

HEARING OFFICER WEBB: -- is that correct?

MR. MATOESIAN: Yes.

HEARING OFFICER WEBB: All right. So just to summarize, the transcript is due by November 9; the IEPA's written answers are due by November 16; petitioner's post-hearing brief and responses to the IEPA's written answers are due by December 7; and the Agency's post-hearing brief is also due by December 7. Okay. The public comment deadline is November 12. Any public comment must be filed in accordance with Section 101.628 of the Board's procedural rules. Would the petitioner like to make a closing argument?

MR. GUARIGLIA: Yes, we would, Your Honor.

HEARING OFFICER WEBB: Okay.

MR. GUARIGLIA: The -- Thanking again the Board for their time and for your time, specifically your personal time in hearing our petition, and for obviously reading our briefs and spending time on those and thinking through these issues.

The -- You know, part of the request for an adjusted standard is to show that the rationale or the justification for this is that factors relating to our situation, to Royal's situation, are substantially and significantly different than the factors that the Board looked at when proposing the eight pound per hour rule, and although it's hard to know what the Board exactly was thinking 35 years ago when they proposed the eight pound per hour rule, I'm sure there was very good reasons for it at that time. However, I think at that time they probably were not contemplating the fact of operations like Royal where you have, you know, three things going on that are significant. One is that you're dealing with very large parts that are being manufactured. These are not, you know, small like, you know, motorcycle helmets where you could enclose them in a small container in a small production facility to control the emissions off of those. You also have -- It is a batch operation as opposed to a continuous operation. That makes controlling those emissions a lot more difficult too.

And the biggest issue here is just, you know, 30 years ago there wasn't a worker protection standard that there is now for styrene, and so Royal in order to protect its workers needs to have a significant amount of

airflow coming through those bays when they are manufacturing their pools, because OSHA would not be too kind if we decided to make the entire bay a containment area and then vented the emissions out through a stack and then put all the employees in a self-contained breathing apparatus. OSHA would find that to be illegal since we are supposed to use -- Royal's supposed to use engineering controls to control exposure to workers rather than trying to put people in personal protective equipment, and so that's why the open bays need to be open to the air and have a significant amount of air that goes through there.

The -- Royal is currently regulated under the EPA composites MACT standard, and the EPA has spent, you know, quite a bit of time and energy in looking at this industry and regulating it in order to control emissions of hazardous air pollutants, and so we are, you know, reluctant and would be adverse to additional restrictions that would place Royal at a competitive disadvantage to other pool manufacturers throughout the country that would not have to comply with, you know, very specific requirements as suggested in some of the Board's questions; that we would rather have a level playing field, and that's what we think the EPA set forth in the

MACT standard for all types of boat -- or I'm sorry -- all types of pool manufacturers throughout the United States.

As Dr. Haberlein testified, you know, there are just significant technical and regulatory constraints from -- yeah, technical, regulatory and just economic constraints on either trying to manufacture pools in a different method than the open mold method, which is the current method that all manufacturers in the United States manufacture fiberglass pools, and that -- just the extreme high cost -- up-front cost for doing any kind of end-of-stack controls we were talking about. You know, it's over $700,000 just to put those controls in, another $470,000 per year to operate them. You know, in just taking out to the base level, it would -- Royal would close the facility if they had to add those type of controls on this facility and just close up business and leave the state and either leave manufacturing altogether or move to a different state such as Missouri and start its operation up, which is not really going to ultimately affect -- you know, there won't be a significant change in the emissions in the United States; it would just be moved to a different state.

The -- We are -- You know, we just really ask the

Board to grant this adjusted standard. We know that the Board did grant a similar adjusted standard for Crownline Pools just three years ago, and we have crafted our request for an adjusted standard based upon the language that the Board granted for Crownline, and we would hope that that same type of adjusted standard would be issued here; that there wouldn't be additional restrictions placed upon Royal in this situation, particularly where there seems to be, you know, no scientific basis for restrictions such as contacting, you know, East St. Louis to see if there's an ozone action day and then having to go through the hoops of change operations when Dr. Haberlein has testified that such a restriction -- such a limitation on Royal's permit would really have a negligible effect on ozone in the long run. So we hereby, you know, request again that the Board would grant the adjusted standard as we have proposed in our petition, in our first amended petition. Thank you.

HEARING OFFICER WEBB: Thank you very much. Mr. Matoesian, do you have any final comments?

MR. MATOESIAN: Just briefly that we thank the Board for their time and effort and that based upon the information we have received, we would recommend that the Board grant this adjusted standard as well. Thank

you.

HEARING OFFICER WEBB: Thank you. At this time I will again note that there are no members of the public present to make any statements on the record. I find all of the witnesses testifying today to be credible, and at this time I will conclude the proceedings. We stand adjourned and I thank everyone for their participation.

(Hearing adjourned.)

STATE OF ILLINOIS)
) SS
COUNTY OF BOND)

I, KAREN WAUGH, a Notary Public and Certified Shorthand Reporter in and for the County of Bond, State of Illinois, DO HEREBY CERTIFY that I was present at the C.E. Brehm Memorial Public Library, Mt. Vernon, Illinois, on October 28, 2009, and did record the aforesaid Hearing; that same was taken down in shorthand by me and afterwards transcribed, and that the above and foregoing is a true and correct transcript of said Hearing.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my Notarial Seal this 8th day of November, 2009.

_____

Notary Public--CSR

#084-003688