

**PUBLIC HEARING**  
**REGARDING**  
**THE PROPOSED AIR QUALITY PERMIT RENEWAL**  
**FOR**  
**MATERION CERAMICS, INC.**

**JULY 12, 2012**

Hearing Officer:

Today is Thursday, July 12<sup>th</sup>, 2012. The time is approximately 5:36. The location is Sunnyside High School in Tucson, Arizona. I'm the Hearing Officer representing Pima County Department of Environmental Quality or PDEQ and I will be presiding at today's proceedings. My name is Mukonde Chama and I'm the PDEQ Air Permits Supervisor. Other PDEQ representatives here tonight are: Beth Gorman (she's in the back) she's the PDEQ Communications Senior Project Manager and, Karen Wilhelmsen, she's the Communications Program Coordinator. (she's on the table at the entrance).

At this moment, we are conducting a formal public hearing. As an air quality control district, PDEQ has jurisdiction over facilities requiring air quality permits in Pima County. The purpose of this hearing is to allow citizens the opportunity to enter into the record, oral or written comments regarding the proposed renewal of the air quality permit for Materion Ceramics, Inc. The facility is located at 6100 S. Tucson Boulevard here in Tucson.

By law, a public hearing must meet certain requirements. They are:

- 1) A minimum 30-day advance public notice must be given in two newspapers of general circulation. In Materion's case, the public notice was actually for a period of about 45 days. Notice was given on May 28, 2012 and June 4, 2012 in the Arizona Daily Star and The Daily Territorial.
- 2) The public must be given an opportunity to speak or to give written comments during the hearing. Tonight the public has the option for doing so.
- 3) A hearing must be conducted "on the record" which means that it is recorded in some way. Tonight's meeting is being recorded.

This hearing is considered a "formal public hearing" under state law. A formal public hearing is different than a public meeting. In a public meeting there is an opportunity for questions and answers between the general public and the department. That opportunity was held this past Tuesday in the Sunnyside High School cafeteria. As tonight is a formal

public hearing, the representatives of the department will not be formally answering any permit related questions. In other words, neither I nor anyone from the department will be answering any questions at this podium tonight. I can only repeat or clarify what I read. After the end of the public comment period, which is tomorrow, PDEQ will prepare a written response to all questions and comments entered into the record regarding the proposed renewal. If you have questions about the permit, please include them in your comments. All comments and questions about the renewal should only address the permit and air quality regulations.

The agenda for tonight's hearing is as follows: First, there will be a brief description about the facility and the proposed renewal of the air quality permit. I will then begin to call speakers in the order they are signed in, so as to begin taking public comment. As this is a very structured proceeding, please follow the instructions for making public comment. If you wish to comment, you must fill out a speaker slip if you have not already done so, and hand it to Karen Wilhelmsen. This procedure will allow everyone an opportunity to be heard and allow us to later match the name on the official record with the speaker on the recording. I will call individuals in the order that speaker slips were submitted. Please spell your name to help ensure that we transcribe it correctly in the record. I ask that comments be limited to about 3 to 5 minutes so everyone who wishes to make a comment is given the opportunity to do so. In lieu of speaking, you may also submit written comments this evening. Written comments can be submitted to Karen. If you wish to do so, you may make both oral and written comments tonight.

Once again, the purpose of this hearing is to receive comment from the public on the proposed renewal permit for Materion Ceramics. By law, all the comments made here or in writing are considered by PDEQ prior to making a final decision regarding the proposed air quality permit renewal. The department has a duty to evaluate and respond in writing to all written and verbal comments that are received. This document is known as a Response to Comments Summary. It will be available at the time the department makes a final decision regarding the proposed renewal. If you wish to be notified of the final decision made by the department, please be sure to indicate that on the sign in sheet in the back.

I will now give a brief summary of the facility and the proposed renewal of the air quality permit. For more detailed description of the facility and the permit we have permits in the back. We have more documents on our website those are available and accessible 24 hours a day.

The facility was constructed and began operations in 1980 at its current location. The facility manufactures materials used in various markets such as medical products,

aerospace and defense, electronics, telecommunications, solar energy, and oil and gas. As part of this manufacturing process, Beryllium oxide powder received at the plant is converted to parts using other additives and a variety of pressing processes. Metallization and sometimes nickel plating occurs as an end process.

Materion recently applied for a revision and installed an Aqua Regia process as an additional cleaning step to clean fired beryllium oxide components. Components are cleaned in the solution due to residue and other metal marks that are removed as part of this cleaning.

Materion is in the process of evaluating other products and markets and is currently undertaking research and development projects using Cadmium-Tin metal matrix for manufacture of solar equipment. Although some production has taken place, it is not yet in full production. There is no planned production for the near future and evaluations and process improvements continue. Once full production is established, Materion will be required to apply for a permit revision.

With regards to the air quality permit:

Materion Ceramics is seeking to renew its air quality permit for the operation of its Tucson-based Beryllium ceramics facility. Once the application process is finalized, the air quality permit will be a renewal of the initial five year permit issued to Materion.

The proposed permit is divided into three main parts. The first part consists of some administrative requirements pertinent to the Permittee; the Permittee is Materion. This is Part A of the permit. Part B consists of two parts which outline specific emission limits and standards for the beryllium processing and Aqua Regia acid cleaning specific conditions. The beryllium processing conditions include specific requirements for the installation, use, and maintenance of pollution control equipment, as well as adherence to emission prevention plans.

With regards to emissions:

Emissions from the facility consist primarily of fugitive emissions from solvent using operations in cleaning and binding agents. These would be VOC's. There are other minor non-fugitive emissions from natural gas fired equipment onsite, primarily boilers and dryers. These are emissions of nitrogen oxide and carbon monoxide, which are common with all natural gas-fired equipment. The pollutant of concern to the public is beryllium emissions. Annual stack testing has consistently shown that beryllium emissions have been at non-detect levels. What this means is that the equipment used to measure how

much beryllium is emitted from the stack while the plant is operating did not detect any beryllium from the stacks at the lowest detection limit of the equipment. Equipment used measures to units far below one-hundredth of a gram. The allowable federal emission standard set by the Environmental Protection Agency, or EPA, is 10 grams of beryllium/day.

With regards to monitoring:

The proposed air quality permit requires the facility to control particulates, in particular beryllium emissions, per federal standards and they're supposed to meet Pima County standards for particulate control. And this is throughout the life of the facility. Federal regulations prescribe a numerical limit of how much beryllium is allowed from all operations at the facility. The department supplements federal conditions where additional conditions are determined necessary to assure compliance with regulations or prevent emissions from the facility. All particulate generating production operations involving beryllium are controlled by operational procedures and a combination of ventilation, isolation, or enclosure. Captured particulate emissions are routed to the air pollution control equipment and HEPA filtered prior to exhausting through a single stack to the ambient air. The air quality permit also requires Materion to maintain and follow operations and maintenance plans for other emissions at the plant, such as the recently added Aqua Regia acid cleaning process. The acid cleaning equipment removes surface contamination, such as metal marks from the fired beryllium oxide. Materion is required to install, operate and maintain air pollution control equipment for this cleaning process.

With regards to testing:

Annual testing is required by the permit and has been completed every year. In addition, the permit also requires that Materion shall submit an Annual Beryllium Technology Assessment Report. This report is required to identify the following:

1. New technologies or techniques regarding continuous emissions monitoring for beryllium.
2. New technologies or techniques for field assessment for real time beryllium detection.
3. Applicability of technologies to Materion Ceramics, Inc. and their associated cost.

And we have received these assessments every year since the last renewal was issued and there have been no new technologies or techniques that have been implemented in the permit.

This marks the end of the facility and permit summary. We will now begin taking formal comment. I would again like to remind people that if you wish to speak, please complete one of the speaker forms and hand them to Karen. I'll shortly begin calling up speakers to take public comment. To ease transcribing the hearing later, please speak clearly and into the microphone. Begin by giving your name so it can be entered into the record.

And we will now proceed to the public comments:

Our first speaker is Rob Kulakofsky

Thank you very much. My name is Rob Kulakofsky that's K-u-l-a-k-o-f-s-k-y. I'm here speaking for an Environmental Justice Action Group and I'm also the point person for the local Sierra club for this beryllium plant. We did submit written comments and I'll just kind of breeze through this quickly as this is basically what we have submitted. First I would really like to thank the folks at PDEQ for including certain things in the permit that we asked for, one of them is for periodic checks of the powered exhaust vents, doorways, and the outside duct works for any evidence of emissions and we know that there are weekly inspections required. We still think it's to infrequent but we are grateful that it is in the permit and that there are regular periods that are included in the permit for inspections. Another thing is the requirement of photohelic gauges for continuous monitoring of pressure drops in the air handling system and an automatic shutdown included with that. I think that is not only really important for safety but also just really good general industrial practice when working with such a dangerous material. And also, as mentioned, the annual beryllium technology assessment is really welcome and we do think that eventually there will be a reasonably priced technology that will be able to do monitoring real time on beryllium emissions through the stack. And speaking of emissions, we are concerned that only 3 of the 7 powered vents for beryllium protection areas had actually been called eligible for testing. Not only that but that these would only be tested at the request of the Control Officer and instead we really believe that regular testing should be done on those vents and on all of the vents. And as mentioned on the technical support document only 5 of the 12 vents in the plant have ever been tested and that was way back in May of 2001. And although those tests did show no beryllium we, of course, don't know that there is no beryllium because it's below the detect level. We believe that if you were, as stated in the technical support document, if you extrapolate all of those powered vents that you actually do end up some beryllium emissions. And the TSD states that because there is no beryllium powder being used in those areas where the power vents, emissions are not a concern, however beryllium powder is being created by milling and lapping and firing of beryllium ceramic products in those areas, so there is powder that does have beryllium in those areas, so we do believe that is dangerous dust and it needs to be considered dangerous and therefore we want those vents to be checked on a regular basis. There is one discrepancy that we would like to bring to your attention and that is in our written comments and it says that PDEQ has required Materion Ceramics direct emissions from all operations that have the slightest potential for beryllium to release into the stack, however the powered exhaust vents do not go through the stacks, so we believe that's a misstatement and at minimum the

permit should state something to the effect that, with the exception of powered exhaust fans, PDEQ has required Materion Ceramics direct emissions from all operations that have the slightest potential to have beryllium release from the stack. However instead of that we would like it to say that, all of the exhaust fans are required to be tested on a regular basis. That's all I have to say and I would really like to thank PDEQ for listening to what we have to say and putting much of what we had asked for in the permit.

The next speaker is Eva Dong

Good Evening my name is Eva Dong. As a community member I just want to thank PDEQ for having this tonight and continuing to monitor the plant down the street here. As a community member for years as you all know I've been very concerned about the plant being so close to our community, so close to many of our schools, so I really appreciate PDEQ continuing to monitor and continuing to make sure that what has to happen is happening as far as the monitoring of the air. I appreciate also these guys for all their diligence and keeping an eye on and making sure all those technical things that is in the air permit is read and understood a lot more than what I can understand. I just want PDEQ and Brush Ceramics, the Materion facility, to understand that it is crucial that we continue to do the monitoring for the air and all the other pollutants that might be coming out of there, because it's not just beryllium now that is being manufactured, but others and I would hope that PDEQ would also make sure that the other materials that are now being manufactured there are also looked at and assured that none of that effects our community and in the air or in the water. Thank you

The next speaker is Brian Blank

My name is Brian Blank and I appreciate what PDEQ is doing to try to keep people safe, but the fact of the matter is, the only thing that they can test for and regulate is based on a 50 year old standard every other standard from lead and everything else has changed throughout the years. And for the beryllium standard, I believe it should be much lower. PDEQ may not have much choice about that, but I think the Board of Supervisors or the State or the Feds can actually change the standards if they want and I think the State can have a lesser and more stringent standard, as long as it's not worse than the Federal standard -- any less stringent.

Because of the toxicity, the potential toxicity of beryllium and it's not quite beryllium its beryllium oxide; it's a powder. It's a white powder that travels through the air and no matter how minute the particles are or the amount, the fact is once it goes in the air it lands somewhere and it doesn't turn into anything else; it stays beryllium oxide. It's like another white powder you may be familiar with. It's titanium oxide. It's what they put in white paint on your car if you have a white car. Titanium oxide stays titanium oxide it doesn't turn into anything else. It's not toxic however, like beryllium oxide. You notice this when the paint breaks down and the binder breaks down. You can brush your hand across an old car and get white powder on your hand. My fear frankly is that the minute quantities of beryllium that perhaps aren't being measured or is coming

through the powered exhaust vents go somewhere, no matter how small. They build up in layers, year after year, day after day, for decades, sitting in attic or rafters or crawl spaces in people's houses or large buildings like school buildings and where there is dead air where there are eddies and back currents and it never gets disturbed until some electrician goes up there and puts his hand in it and then...boom... you have a toxic release, all at once that exposure. Now the Department of Energy 13 years ago changed the standards because they did not know what it should be and their inspectors were getting sick, so the Department of Energy changed their standards by a factor of 10. It's 10 times more stringent than anyone else's standard because they didn't know what the standard should be, they think it should be zero but they can't make it zero, so they said we will make it 10 times more stringent than what it is. I think at the very least the standard PDEQ looks at should be 10 times less than it is. Oh, as background for the rule that they made in 1999 for the Department of Energy. They said that the new rule is unusual because it states exclusively that the government simply does not know what level, if any, is safe. I'll repeat that -- the government does not know what level, if any, is safe. The strategy to minimize exposure mimics the regulatory scheme for radiation in which the government sets ceilings, but demands that exposures be kept as low as reasonably achievable. Theoretically, the standards could be kept at zero except for the natural background which is not harmful. The beryllium in soil and natural background and lots is not the harmful kind of beryllium oxide. The best thing would be if the factory made nothing or if they went somewhere else, like an offshore drilling platform in the middle of the gulf might be a good way to keep most people away from the dust. I understand it is probably not practical because of the economy in Tucson needs good jobs but still, years from now the buildup that I have described in attics and crawl spaces and under people's sinks and wherever, could make people sick. And probably local officials and regulators will get the blame for not keeping the public safe. I don't know whose fault it would be. I know it won't be my fault because I've tried to call this to your attention.

The next speaker is Andres Cano.

Good evening everyone my name is Andres Cano and I want to say thank you to everyone for being here tonight. The last time this permit was being considered it was quite an emotional experience for me. My grandmother, Rosa Maldonado, was one of the 31 employees that were affected with chronic beryllium disease. This issue is very personal to me and to my family. But I also realize that, you know, sometimes workforce experience and the daily contact that my grandmother and her friends had on a daily basis can be a separate issue when talking about air quality, but the issues remain the same. We still care about our community. When you realize this is an urban area and there are schools that are surrounded by Materion and I just want to say that I'm very impressed with the department for putting in a few more tools to monitor the air quality in the region. However, I do have concerns, just as Mr. Blank had mentioned, and the Environmental Justice Action Group -- thank you by the way for your continued service in this. I have a philosophical difference with a plant like this being on the city's south side in such an urban area. But if we have protections in place, if we are working with local officials in the

School District, in particular, to make sure we don't find beryllium in our areas – particularly here at Sunnyside – again. That, I think this is a step in the right direction and I just want to say thank you to everyone who has been a part of this. Just to reiterate for the record that this can be mentioned, we do share EJAG's concerns about 3 of the 7 power vents in the beryllium production rooms; those are the only ones that are being tested right now. All of them should be tested, not just a select few. Those are my comments and I would like to say thank you to everyone.

[Mukonde] Is there anyone else?

[Brian Blank] Can I say something else? In addition – I forgot to mention something.

[Mukonde] Sure.

Thank you for reminding me about the powered air vents. I skipped over that. I couldn't read my own writing in my notes. Yeah, there shouldn't be any powered air vents from production areas. That's ludicrous. Everything should go through the stacks. Another branch of Pima County, the Wastewater Department, don't allow toxic discharges into the drain -- into the sewer system because they're afraid it might kill the bugs in the sewer plant. Well, I think people are more important than bacteria in a sewer plant and I don't think there should be any powered exhaust vents. It is the equivalent of pouring stuff down the drain unregulated. And Wastewater people are always fond of saying if we find a violator that does that, we are allowed to put concrete down their drain so that they can't use the sewer system anymore. I don't think, I think you guys could do a similar thing. PDEQ could just go cut the wires to the power exhaust fans and say these are a hazard to the community. Thank you.

[Mukonde] Any other comments? We still have some time before 6:30, so we'll go off record for a while and give time to others that may be on their way and want to give comment. If no one comes before 6:30, we will come back on the record and end the hearing. Thank you.

The time is now 6:29. We are back on the record to proceed with the hearing. Before closing, I would like to give a final opportunity for anyone who would like to make a comment. Seeing that no one is coming forward, there are no further commenters. I would like to remind people that the department's response to comments will be developed in the next two weeks. If you would like to see this document or if you would like it sent to you, please indicate that on the sign in sheet in the back. Make sure your name and address are clearly printed. We will mail it out to you. If you prefer e-mail please, write the e-mail address and we will e-mail it to you. At this point, I will now close the hearing. Your interest is appreciated and thank you for attending the hearing.

[Brian Blank] Question? How can we get a copy of the transcript of this hearing?

[Mukonde] Yes, you can get a transcript, if you indicate in the back that you would like a copy of the transcript.

The hearing is closed. Today's date is Thursday, June 28<sup>th</sup>. The time is 6:30. Thank you.

[Correction, wrong date was given. The actual date was July 12, 2012]