EXHIBIT 1

From: Koprowski, Paul [Koprowski.Paul@epa.gov]
Sent: 2/11/2016 9:05:49 AM
To: David Monro (MONRO.David@deq.state.or.us) [MONRO.David@deq.state.or.us]; grunow.greg@deq.state.or.us
Subject: FW: ENFORCEMENT CONFIDENTIAL - EPA Bullseye Glass Inspection 2/10/16 - Brief download

Here's Katie's initial report about the visit to Bullseye yesterday.

Paul

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From: McClintock, Katie
Sent: Wednesday, February 10, 2016 11:48 PM
To: Narvaez, Madonna <Narvaez.Madonna@epa.gov>; Koprowski, Paul <Koprowski.Paul@epa.gov>; Wroble, Julie <Wroble.Julie@epa.gov>; Hedgpeth, Zach <Hedgpeth.Zach@epa.gov>; Downey, Scott <Downey.Scott@epa.gov>; Fairchild, Susan <Fairchild.Susan@epa.gov>; Smith, Judy <Smith.Judy@epa.gov>; Elleman, Robert <Elleman.Robert@epa.gov>; Bray, Dave <Bray.Dave@epa.gov>; Dossett, Donald <Dossett.Donald@epa.gov>; Franklin, Richard <Franklin.Richard@epa.gov>; Dagseth, Renee <Dagseth.Renee@epa.gov>; Moon, Wally <Moon.Wally@epa.gov>; McArthur, Lisa <McArthur.Lisa@epa.gov>; Leefers, Kristin <Leefers.Kristin@epa.gov>; Skadowski, Suzanne <Skadowski.Suzanne@epa.gov>; Schuster, Cindy <Schuster.Cindy@epa.gov>
Cc: Kowalski, Ed <Kowalski.Edward@epa.gov>; Hastings, Janis <Hastings.Janis@epa.gov>
Subject: EPA Bullseye Glass Inspection 2/10/16 - Brief download - Enforcement Confidential

Note: This email is being sent to all epa contacts I have for bullseye including upper management so let's not respond a ton to this list, but I wanted you to all have access to the inspection we did late this afternoon. Paul Koprowski, can you please forward to anyone I missed? We intended it to be announced but because of technical and other glitches, it was unannounced.

Bullseye Inspection Initial (brief-ish) Summary: Enforcement Confidential
Date: 2/10/16, Time 4:00 – 6:00 pm
Inspectors: Zach Hedgpeth (EPA), Katie McClintock (EPA), Greg Grunow (DEQ)

Quick overview of facility and inspection notes:

- They have 20 furnaces. 3 are pots and 17 are tank furnaces. All tank furnaces are oxyfuel (oxygen is used instead of ambient air in combustion) except 1. They were almost all converted about a decade ago to reduce nox emissions. They are currently operating 15 of the 17 tank furnaces, there are always 2 that are being rebricked. The furnaces each have their own stack through the roof and to atmosphere.
- The furnace refractory DOES NOT contain chromium (they are going to send us purchase records for refractory back 3 yrs to prove no chromium based refractory has come into their shop). They don't use chromium refractory because once there is any degredation to a furnace and the furnace starts to break off into the batch, the batch will no longer have the consistent thermal expansion properties. Basically every glass they sell can be mixed together and there is a careful glass chemistry that goes into this that is essential to their business. If a refractory wears, then they must replace. As a result, they aren't trying to run these furnaces massively past the time where you'd expert deterioration and hope for a brick that could tough it out longer. I looked inside a cold furnace ready for rebuild (one of their two largest for clear glass) and there was only minor damage where the refractory contacts the glass and only a few visible cracks and no damage to the crown and superstructure. Chromium based refractory costs more and it makes sense why it doesn't buy them as much here as it does for glasses with different spec requirements.

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- Raw material handling appeared well controlled with a baghouse. The capture system takes air from the batch mixing process, the two batch blenders, and the color adding room. The batch mixing and blenders appeared to have a good capture system. There was the most potential for uncontrolled emissions in the color room and the staff in their wear complete face mask respirators at all time (though we and the plant managers went in and out without and there was no noticeable dust issue). They weren't actively mixing when we were there, but you could see dust on the ground. They mix small batch of colors here and then bring it out to the main batch mixing area to add it to the larger batch.
- The "Frit" process where they crush and grind finished glass into different sized powders (called "frit") was also very well controlled. In fact the frit room appeared at first glance to be a Permanent Total Enclosure. Everything from the room is routed to the baghouse and the frit crushing is hard piped as well. This was the focus of the recent mercury article, which definitely confused many air pollution issues, but this process appears it is likely controlled the maximum level currently.
- Bullseye uses metals in two different forms as colorants. They buy frit that has the metals (like a lead frit or cadmium frit) which is made in Mexico. They also add regular metal raw material. Both are added as raw material to distribute color throughout the batch. Bullseye wasn't sure if they add cadmium that wasn't frit, but they are going to look into it. This raises a few questions, see below.

Important Information:

- No chromium refractory according to Bullseye and my review of their material (AZS in tank and Flux mullite in superstructure) confirms that it is all silica based.
- No current use of arsenic or cadmium currently (even in frit). They have enough stock to sell for a bit and then will have trouble. Because of glass chemistry customers can't mix different competitors easily and it is a big issue for them and their business to not offer the whole rainbow.
- They are reformulating all of their arsenic containing glass and they think they will be able to eliminate arsenic in almost all. Cadmium has no alternative.
- They have hired an environmental consulting firm to design a control device to control 3 furnaces where they would make their cadmium products. We suggested they work closely with deq and epa on the design of this.
- They are clearly very surprised and shocked about all of this and want to do the right thing. They are scared and upset, but genuine and cooperative. The owner built this company from the ground up and passionately believes in the craft and hires staff who love glass too and does a glass show with all employee-artists.

Records requested: I asked for the following records. They are going to get me examples of the first 3 and hopefully the complete response to the last 3 by Friday and discuss a date for the remaining records based on the examples at that time. They understand that this information is more helpful to all as soon as possible. I suggested they might be interested in certifying their response as true and accurate and I could provide a form if that would be helpful.

- Plant Diagram – already received
- Refractory materials for tank and superstructure purchased for the last 3 years. Invoices from the supplier with MSDS on the material. (note: Since furnaces are all rebricked by every two years this will ensure it covers all material currently in use. They don't track which bricks go in each furnace.)
- Backwall temperature readings for each furnace back to 10/1/15 (note: useful for temperature that trivalent chromium could oxidize to hexavalent).
- Products run with all furnaces since 10/1/15. For each include the batch ticket, the furnace used and the date. (note: The batch ticket has the full recipe with all ingredient. We may want to ask for more dates but this seemed like a good start).
- Batch recipes with MSDS for each raw material for all products made since 10/1/15.
- Size of each furnace – holding capacity by furnace number on schematic.
- Schematic of a furnace (note: they are all the same except the one pot)

Conclusions/Questions:

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- Part 63 SSSSSS applies to furnaces that "operate continuously." These furnaces are hot continuously for a year and a half and then go down to rebrick. They are constantly in use and only have a few hours to heat back up to peak temperature between each new bath. It doesn't say glass has to be produced continuously. I think that may have been what they intended but maybe they really did mean smaller crucible furnaces that could heat and cool more than these can. I will check with the rule writer tomorrow.
- We need to investigate if the metals in frit will be emitted when the glass is melted. There is a paper from 2012 which says that once chromium is part of the glass, it is rigidly held in the silica structure and would not be released, even if the glass is later remelted. Since frit is ground finished glass we verify this fact for chromium and look at it for other metals in frit. If emissions are lower from frit, they could potentially switch to using all frit for metals addition. This theory may be disproved based on batch records if all they use is frit but we can correlate to ambient monitor readings. We will see.
- We should look into their compliance with CFR 61 subpart N. I don't doubt that they are in compliance with the limit but they may not be calculating emissions correctly.
- They brought up the level playing field many times and their concern that if they have problems, so do every one of their customers. We told him we understood and also suggested that a list of competitors might be helpful if they wanted to give it to us to speed up our process of separating to the smaller glass melters from the large ones. Given the levels we may have to look at all, but it would give us a priority list. He mentioned a few in virginia and north Carolina, I think but I didn't catch the names. He of course is most concerned locally with Uroboror in Portland as well as Spectrum in Woodinville.
- We need to investigate chrome use generally both the hexavalent chromium added to the batch and also trivalent chromium that can oxidize in the high temperatures in an oxygen furnace.

Next Steps:

- In a perfect world we would have had time to go to Uroboros too and I think we should plan to send a 114 to them asap. We would have to coordinate this with DEQ. I think we should have equal info for both.
- I think Zach and I should go inspect Spectrum as soon as possible.
- I will look forward to an update on the batch records on Frirday. Oregon also has msds for some raw materials already and we should try to get those. I've emailed Greg tonight.

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