September 5, 2018

Ms. Kristy Hunt
Environmental Manager, OhioEPA
Division of Environmental Response & Revitalization
2195 E Front Street
Logan, OH 43138-8637

Subject: Questions about your e-mail reply to Jefferson County Commissioner Tom Gentile of June 29, 2018

Dear Ms. Hunt,

We are writing to you as concerned citizens and in regards to your e-mail response, that we found on the internet, to Jefferson County Commissioner Tom Gentile. We are concerned about the apparent lack of attention by the OhioEPA to the potential, significant health and safety risks to the people, fish and wildlife that live, play and work near the Satralloy Site. As an involved manager in the Division of Environmental Response & Revitalization (DERR) we are asking you to respond within 28 days to this letter via your OhioEPA website and post the answers to our questions on the Satra Concentrates reports sections where other information related to the Satralloy Site is available.

We will first address the questions we have related to your e-mail response to Commissioner Gentile. The dark green text in bold italics is a copy of your June 29, 2018 response and the text immediately following each paragraph is our comments and questions to that specific response which we are seeking answers from you.

From: Hunt, Kristy
Sent: Friday, June 29, 2018 11:56 AM
To: 'tomgentile34@gmail.com' <tomgentile34@gmail.com>
Cc: 'marc@jchealth.com' <marc@jchealth.com>; Barbara Nielsen (barbaranielsen@fmi.com) <barbaranielsen@fmi.com>; Weiss, Kristopher <Kristopher.Weiss@epa.ohio.gov>
Subject: Former Satralloy site, Jefferson County

Commissioner Gentile,

Ohio EPA reviewed the June 25, 2018, news report by WTOV9 in Steubenville regarding potential chrome contamination in Cross Creek township related to the former Satralloy site. This news report indicated a concern regarding ground water contamination, particularly Chromium 6 (CrVI) in down-gradient drinking water wells. To clarify, the

site investigation determined there is no indication of CrVI-contaminated ground water leaving the site.

We are assuming the site investigation you are referring to is the report Golder Associates prepared for Freeport McMoRan titled Remedial Investigation/Feasibility Study for the Former Satralloy Site dated December 2016 (RI/FSforFSS or site investigation).

Our take away from Mr. Gentile's interview was his primary focus was on concerns for the health and safety of the people, fish and wildlife in and around the Satralloy Site and downstream of Cross Creek. There is a great deal of evidence of Hexavalent Chromium contaminated surface water as well as ground water leaving the Satralloy Site per data found in the RI/FSforFSS. This site investigation report includes multiple tables and lab reports that shows this to be the case. The authors of this site investigation report may claim there is no indication of Hexavalent Chromium contaminated groundwater leaving the Satralloy Site but hopefully if you asked your technical personnel within the OhioEPA who have studied this report they would not in any way agree with the misleading conclusions the authors of the RI/FSforFSS stated. At a minimum please personally look at the monitor well and surface water sampling lab results.

With the case of surface water which was not addressed in your response but was a significant point in Commissioner Gentile's interview, there is undisputed documentation in the site investigation of Hexavalent Chromium being discharged within the surface water into Cross Creek. Again you may not realize this but talk to your technical personnel with the OhioEPA who have studied this report and they should be able show you (If we found it so can they).

Continuation of Ms. Hunt e-mail responses of June 29, 2018:

The primary human health risk associated with the former Satralloy site appears to be through direct contact with slag and contaminated onsite soil and onsite ground water. The potential responsible party (PRP), Freeport McMoRan, has completed interim measures to address immediate threats such as removing slag from off-site areas, fencing the entire site, re-contouring portions of the site to assist in minimizing surface water run-off and providing 24-hour site security.

With all due respect, this is another misleading answer that oversimplifies and overstates the interim measures that Freeport McMoRan has done. If they have removed slag from off-site areas, why wasn't this effort detailed in the RI/FSforFSS? Did Freeport really have personnel and equipment remove slag from neighbors' property in the community? We have seen no sign of this taking place in the last 10 years. We challenge Freeport McMoRan to provide the OhioEPA of any documentation (outside of small soil sample collections) of this being done. If Freeport McMoRan had any kind of off-site slag removal program why are there slag piles and clear signs of slag in large multiple locations in their next door neighbor's property; the GKL Wildlife Association (GKL)? We know Freeport McMoRan personnel or their representatives have seen the slag on GKL's property because they have been on this property multiple times collecting well water samples and driven right past the very visible slag piles. GKL has families using this property for recreational purposes; kids are playing in the slag. Is this a potential health concern? If so could OhioEPA please take action to protect us, even if it is a letter to GKL and the other neighbors to warn them of the potential harm and dangers of coming into constant contact with the Satralloy Slag?

The entire Satralloy Site is not fenced, only a minor portion of it is fenced. The site is over 300 acres. It has a boundary of over 20,000 lineal feet and there is only the partial strip (~4,500lf) along County Highway 74 that has fencing. If you asked Freeport McMoRan via e-mail to honestly confirm, they would tell you, well less than 25% of the Site is actually fenced. The Site is completely open to foot traffic from its neighbors like the Cross Ridge, David & Tracy Polonchan, John McFall, T. Eddy, John Raymond, Matilda Giusto, Virginia Quinn, Kenneth Torok, James Zink, Kolmont Community Church and the GKL Wildlife Association. From any of these properties you can just walk or ride a dirt bike onto the property unencumbered. Again if you ask Freeport McMoRan via e-mail to honestly confirm this they will.

The 24 hour site security you mentioned is housed in a trailer that can only see a short, limited section of the fencing along County Road 74. They cannot see children playing at the Kolmont Community Church or GKL Wildlife Association (two locations on opposite sides of the property over ½ mile apart). The kids can easily cross over the property line unimpeded onto the Satralloy Site as can dirt bikes and other ATVs that come in off of Cross Ridge and other neighboring properties.

While Freeport statements about "addressing immediate threats" may go over well as a "sound bite" in reality it is just another example of their misleading and mischaracterization of the actual situation.

Ms. Hunt, prior to June 29, 2018, have you ever visited the Satralloy Site? Have you spent any time walking the boundary of the property? Have you noticed on drawings that Freeport McMoRan owns property on both side of Cross Creek? Have you noticed that there is no Freeport McMoRan installed fencing that prevents any person or animal from approaching either side of the shorelines of Cross Creek where they have property?

As far as minimizing surface water runoff it seems if you visit the site on a dry or wet day there are multiple discharge locations that have a 24/7 flow of water discharging into Cross Creek. During the wet season the surface flow rate off the site is prolific. We do not see how this statement "***re-contouring portions of the site to assist in minimizing surface water run-off***" can be made in good faith. Just look at the outfall points along Cross Creek as well as just surface run off flowing onto County Road 74 from the Satralloy Site. At these locations there are major build ups of a gelatinous material that tends to harden over time. Which means there is a whole bunch of some type of substance/chemical/material in the Stormwater runoff pouring into Cross Creek (on a 24/7 basis); as well as onto County Road 74 and neighbors property on a regular basis after a rain event. Are you telling us that this storm water is completely free of Hexavalent Chromium and other metals? If you go on Google maps and look at the Satralloy Site we so no signs of surface water runoff being minimized along the entire west, north, east or south sides of the massive slag piles on the plateau and next to County Road 74. Also, how is the runoff being minimized from the large slag areas around what Freeport McMoRan calls their site investigation the Slurry Tower area? We do not see any.

If Freeport McMoRan was really serious about minimizing surface water runoff why are there no retention ponds on the Satralloy Site? Is it because they are afraid OhioEPA will require them to draw samples from these ponds and potentially see lab results with high levels of Hexavalent Chromium?

Have you asked yourself, how is it that every other ferrochromium processing site in the United States, Europe and South Africa has elevated levels of Hexavalent Chromium in their retention

ponds but by some unexplained reason the Satralloy Site is not required to have retention ponds. Do you just blindly accept when Freeport McMoRan states that their site does not have this issue when there is documentation in their own site investigation that contradicts this? Could it have been a strategy by Freeport McMoRan and their Engineers not to install retention ponds so that they never had to test the water in the retention ponds? We guess, since Freeport McMoRan has never been required to test in the same manner all the other Ferrochromium Sites, then they can claim there is no risk. It reminds us of the television show, Hogan Heroes, where Sargent Shultz would say "I know nothing" if asked a question. If you do not seek answers to known potential problems you will never find out if there really is a problem. We the public would like the peace of mind to know that the OhioEPA is asking the right technical questions and getting them independently verified not just accepting some well parsed, partial answers from Freeport McMoRan and their Engineers.

Please, please, please talk to some of your technical personnel and read some outside literature abut Ferrochromium processing that has not been selected and sanitized by Freeport McMoRan or their Engineers. There is a two glaring omissions in your e-mail statement "***The primary human health risk associated with the former Satralloy site appears to be through direct contact with slag and contaminated onsite soil and onsite ground water.***" There is no mention in this statement of the tainted surface water draining into Cross Creek on a 24/7 basis and spilling onto County Road 74 and onto neighbors properties or the hundreds of thousands of pounds of Ferrochrome/Ferrochromium Furnace Dust stored in the North Mill building and also still laying all over and within hundreds of acres the Site. Their own site investigation states this dust contains significant amounts of Hexavalent Chromium.

The work done by Freeport McMoRan and their Engineers did very little deep sampling of slag (most of it was less than 3 feet deep). It appears they might have been concerned that deeper sampling may have resulted in less favorable results. Every TCLIP test result shown in the 2016 Freeport McMoRan Remedial Investigation Report related to Ferrochrome/Ferrochromium Furnace Dust (also often referred to as Baghouse Dust) had Hexavalent Chromium results exceeding regulatory safe health limits. Your own OhioEPA technical personnel will confirm this. Please ask yourself: why is it that Freeport McMoRan and/or their Engineers intentionally did not sample close to the known areas that Ferrochrome/Ferrochromium Furnace Dust has been dumped on the Satralloy Site. Was it because if you avoid the areas where there is a significant potential problem there will be no negative news? Said another way, with no sampling you can falsely state there is no threat from an area because there is no documentation of a threat. We will address this in more detail later in the letter.

> ***Continuation of Ms. Hunt e-mail responses of June 29, 2018:***
>
> ***Ohio EPA appreciates your concerns related to the former Satralloy site. If you have additional questions concerning this site, please contact the Public Interest Center's Kristopher Weiss, whom I've copied on this email.***

If OhioEPA really appreciates Commissioner Gentile's concerns related to the former Satralloy Site we hope you address the above points we have just made and challenge Freeport McMoRan to provide a balanced assessment of the Satralloy Site in their final issue of the RI/FSforFSS.

There are other questions in letters we have raised with the OhioEPA dating back to July 19, 2018, which we have not seen any response. Is there not a policy within the OhioEPA that a response is to a question from the public be generated within 28 days? As a manager in OhioEPA can you not enforce this policy? We asking questions about the RI/FSforFSS you received in December 2016. OhioEPA has had over 18 months to get familiar with it. We would expect OhioEPA would not need a longer time period to research some very, straight forward questions. If you are not familiar with what we have asked in the past, which we are still wanting a response, here is a recap of what we are now asking you to personally follow through on.

In the RI/FSforFSS, it gives the conclusion that there is no health concerns from the slag at the Satralloy Site. They summarize that any Hexavalent Chromium that is generated will be quickly converted to Trivalent Chromium by natural attenuation in the soil. The report cites as a reference to support this claim:

Palmer, C.D. and R. W. Puls 1994. Natural attenuation of hexavalent chromium in groundwater and soils. Environmental Research Brief. Environmental Protection Agency.

We looked up this publication and here is what the summary of the Palmer/Puls research states.

"Summary

Under certain conditions, toxic Cr(VI) can be reduced to the less toxic Cr(III) in soils and precipitated as an insoluble hydroxide phase. The possibility of relying on such "natural attenuation" of Cr(VI) is attractive because of the great expense of remediating chromium contaminated sites. Before such an option is adopted, however, it should be demonstrated that natural attenuation is likely to occur under the specific conditions at the site being investigated.

If natural attenuation is to be considered a viable option for chromium contaminated sites, then ideally, it must be demonstrated that:

1) *there are natural reductants present within the aquifer,*
2) *the amount of Cr(VI) and other reactive constituents do not exceed the capacity of the aquifer to reduce them,*
3) *the time scale required to achieve the reduction of Cr(VI) to the target concentration is less than the time scale for the transport of the aqueous Cr(VI) from source area to the point of compliance,*
4) *the Cr(III) will remain immobile, and*
5) *there is no net oxidation of Cr(III) to Cr(VI).*

The most difficult information to obtain is the time scales for the reduction and oxidation of chromium in the soil. Demonstrating Cr(VI) reduction in aquifer by mass balances that rely primarily on the aqueous concentrations from monitoring well networks are valid only if it is demonstrated that Cr(VI) precipitates are not forming in the aquifer. The monitoring network must be sufficiently dense that estimates of Cr(VI) are accurate."

Our question to the Ohio EPA is, did you ask Freeport McMoRan to demonstrate that the above 5 bullets of Palmer/Puls' criteria were addressed and proven to be the case for the soils and slag at Satralloy? If not; how can you accept the conclusions by Freeport McMoRan and Golder Associates that there is no risk at the Satralloy Site from the slag? If there is no risk than why are there elevated readings of Hexavalent Chromium in the monitor wells, surface soils and water, minerology and storm water discharge samples as reported by Golder Associates in the RI/FSforFSS?

In the RI/FSforFSS why are not all components of the slag matrix being addressed, including ferrochrome waste materials and dust, as the primary sources? Differences in transport mechanisms and exposure pathways relevant to each of these components should be addressed by the Site conceptual models. Do you agree these differences should be addressed? How can OhioEPA continue to allow the toxic nature of the Ferrochrome/Ferrochromium Furnace be completely ignored?

Why is the variability of geochemistry across the Site (e.g., pH) and its effect on predicting releases to exposure pathways not addressed in the RI/FSforFSS? Conceptual site models should recognize uncertainties about future leaching and continued rapid and complete Hexavalent Chromium reduction. Do you agree these uncertainties should be addressed?

The SPLP results should not be represented as indicating low leaching of Hexavalent Chromium from the Site, nor as an explanation for "low concentrations of chromium in surface water across the Site." Concentrations in SPLP results and on-site surface water samples are orders of magnitude above the applicable surface-water criterion for Hexavalent Chromium. Conceptual models of the Site should recognize that there are significant releases of Hexavalent Chromium to on-site surface water and Cross Creek surface water and sediment. In addition, claims that measured Cross Creek surface-water concentrations of Hexavalent Chromium are all below the applicable surface-water criterion are tenuous, considering the inexact distinctions among samples taken at discharge points, "mixing" locations, and "mixed" locations. We feel this uncertainty needs to be recognized, will OhioEPA require Freeport McMoRan to do this?

Why isn't the disruption of the areas containing slag included in conceptual models of the Site as an important mechanism that can enhance leaching and transport of Hexavalent Chromium (and other COPCs) from slag material, through secondary media (e.g., shallow groundwater and seep water) to Cross Creek addressed? The RI/FSforFSS mentions consolidating the slag and capping it. This would require a great deal of disturbance of the slag. This is important because future remediation or construction activities at the Site will need to account for this enhanced release mechanism. Does the OhioEPA agree?

Why is the presence of Hexavalent Chromium in background sediment samples and elevated levels of Hexavalent Chromium in Cross Creek sediment porewater not explained, including potential implications for future impacts? Will the OhioEPA ask Freeport McMoRan to explain this in the Final RI/FSforFSS?

Why doesn't the HHRA conceptual model include transport from shallow groundwater to seep water to Cross Creek sediment and surface water as a pathway, and not limit groundwater to just the drinking-water pathway? The potential for groundwater from the Interflow Zone to be a

source to Cross Creek sediment and surface water, and related recreational and ecological exposures in that vicinity, should be included. Does the OhioEPA agree?

Why doesn't the HHRA include a quantitative assessment of exposures and risk associated with recreational use of Cross Creek? Will the OhioEPA ask Freeport McMoRan to include this in the Final RI/FSforFSS?

Both Freeport McMoRan and Golder Associates personnel were aware of the Ohio EPA doing sampling and study work in Cross Creek in 2010 and that there would be a report produced from that work. They stated as such in the RI/FSforFSS. That work was published in April 2013 in a report called "Biological and Water Quality Study of the Cross Creek Basin and Selected Ohio River Watersheds". That seems like more than enough time to get it included in the December 2016 issued RI/FSforFSS. They just misstated it was not yet published and arrogantly ignored it. (See Volume 1, page 14 Section 2.1.6) Does not OhioEPA take offense to this? Will the OhioEPA ask Freeport McMoRan to reference this report and address those aspects of the OhioEPA report that are in conflict with Freeport McMoRan and their Engineers conclusions? Will this be included in the Final RI/FSforFSS?

Since Golder Associates listed at the end of the RI/FSforFSS a number of internet references that support their conclusions, why is it, when there are many published reports about the toxicity of ferrochrome/ferrochromium furnace dust, Freeport McMoRan and Golder Associates did not include any of these? Do you intend to ask Freeport McMoRan this question?

The technical reports that Freeport McMoRan and Golder Associates reference on baghouse dust are written outside the USA but they stay silent on key factors like both Canada's and other European and African nations Environmental regulatory agencies categorizing ferrochrome/ferrochromium arc furnace dust as a toxic material (Environment Canada 2010a waste K091). Why is it so many nations use valid scientific documentation to justify ferrochrome/ferrochromium furnace dust to be classified a toxic material but there is no mention of this by Freeport McMoRan or Golder Associates?

Based on the test data provided in the RI/FSforFSS would not any waste facility that was asked to receive this "stored dust" from the North Mill Building classify it as hazardous waste? Would OhioEPA make a few phone calls to Waste Facilities and get the answer?

We have a few former Satralloy employees in our concerned citizens group and they are certain there is drawings and permits that show where ferrochrome/ferrochromium furnace dust was buried and spread on the Satralloy Site. The have told us in the early years it was just taken by trucks, dumped and mixed in with the slag in the areas South of the South Mill Buildings and up on the plateau. In later years there was three more distinct areas they would haul it to and just dump it. Those areas are:

1) Follow the former haul road at the south end of the upper rail spur to the south end of the slag piles. There was a huge dump site there over at least a three acre area.
2) Just to the West of the what the site investigation calls the government chromite ore stockpile on the plateau, at least a 2 acre area
3) Just South of what the site investigation calls the government chromite ore stockpile on the plateau about another acre

These areas should be shown on permit applications that both OhioEPA and Freeport McMoRan must have. Could OhioEPA research and confirm this? Can OhioEPA have soil samples taken from these three above areas (at various depths) that Freeport McMoRan and their Engineers failed to draw from?

If you take an average depth of 20 feet for these three areas (5 acres) it equates to over 160,000cy (~200,000+ tons) and there must have been 2 times this much layered in with the slag before designated dumping of the ferrochrome/ferrochromium furnace dust started.

We did not see any testing of soil samples by Golder Associates near these areas. Why is that? Would it have hurt their conclusions? It seems as if the study intentionally avoided analyzing materials that would hinder their desired outcome (no risk) of the study.

Also in reading through the OhioEPA website there is a lot of information about CERCLA (Comprehensive, Environmental, Response, Compensation, and Liability Act of 1980 *(aka SuperFund))*. Is the OhioEPA managing the Satralloy Site per the CERCLA criteria?

We copied the following related to the CERCLA criteria from the OhioEPA website:

> ***302.4 Designation of hazardous substances.***
> *(a) Listed hazardous substances. The elements and compounds and hazardous wastes appearing in table 302.4 are designated as hazardous substances under section 102(a) of the Act.*
> *(b) Unlisted hazardous substances. A solid waste, as defined in 40 CFR 261.2, which is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b), is a hazardous substance under section 101(14) of the Act if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24.*

If the answer to our question about managing the Satralloy Site per the CERCLA criteria is yes; than per Table 302.4 would you please confirm that the Ferrochrome/Ferrochromium Furnace Dust that was generated for decades at the Satralloy Site falls under the qualifies as a hazardous substance K091 and/or K093?

Environmental Protection Agency § 302.4

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table] Hazardous substance CASRN Statutory code† RCRA waste No. Final RQ pounds (Kg) Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting the stay, EPA will publish a notice of the action in the FEDERAL REGISTER.)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous substance	CASRN	Statutory code†	RCRA waste No.	Final RQ pounds (Kg)
Emission control dust or sludge from ferrochromiumsilicon production				
K091		4	K091	10 (4.54)
Emission control dust or sludge from ferrochromium production-				
K093		4	K093	5000 (2270)

Will OhioEPA ask Freeport McMoRan and their Engineers to address why there was not one word about this mentioned in their draft RI/FSforFSS? Will the OhioEPA demand that this critical omission be addressed in the final RI/FSforFSS?

In this same section of the OhioEPA website it said the following about Public Outreach per the CERCLA process:

> ***Public Outreach:***
> *Public outreach would be essentially the same at this site whether work is done under RCRA or CERCLA. The CERCLA process anticipates and encourages public involvement throughout the investigation and cleanup, and requires public participation during the selection of response actions. EPA develops a community relations plan, and makes documents available to the public throughout the investigation and cleanup in a public document repository, typically in a public library in the affected community. During the investigation and cleanup, EPA may also facilitate the formation of a Community Advisory Group (CAG). When EPA presents the Proposed Plan to the public, the Superfund program holds a public meeting, and prepares a transcript to record the comments. The public may also submit written comments during the public comment period. EPA then prepares a responsiveness summary to respond to the public comments, and that becomes part of the record for the remedy selection. This public comment process is somewhat similar for RCRA proposed remedies but, in routine cases may not be as comprehensive.*

We are formally requesting that OhioEPA develops a community relations plan with regards to the Satralloy Site and makes all documents available in the Steubenville Library as the public document repository. In a presentation Freeport McMoRan made to First Responders at the Hilndale Fire Hall in 2013, the Project Manager for Freeport McMoRan said they would set up a website and that the public would have access to all the Satralloy investigation work being done on the Satralloy Site. To date (5 years later) that has never happened.

The Hellbender Salamander seems to be essentially ignored in the study work by Freeport McMoRan. The Ohio Division of Wildlife lists the Hellbender as ENDANGERED. There is a tremendous amount of literature available on the Hellbender in Ohio Rivers. One of them is "*A Conservation Plan for Eastern Hellbender in Ohio*" by Gregory J. Lipps. There are websites that are focused on the Hellbender. In reading thru this literature there is clear documented information that Hellbenders have been confirmed living upstream of the Satralloy facility but not downstream. Could it be because of the uncontrolled Hexavalent Chromium and other metal releases from the Satralloy facility?

There is no viable mention of the Hellbender in the 470 pages in Volume 1 and in the 965 pagers of Volume II that seems to cover risk assessments to human and aquatic life. We only found the word Hellbender used once in a table on page 61. There was no discussion in either of the volumes about the Hellbender. In fact it seems the report inadvertently or intentionally ignored the Hellbender. Can the OhioEPA accept this discrepancy without asking questions? It seems a bit convoluted to accept the logic that since no Hellbenders live downstream of the Satralloy Site Freeport McMoRan does not have to study them regardless of the potential fact that the discharges from the Satralloy Site may have killed off their habitat. Will the OhioEPA ask Freeport McMoRan to address the Hellbender in a thoughtful context?

We have copied below the section from the OhioEPA website under the tab "About US" it states:

The Ohio Environmental Protection Agency is a trusted leader and environmental steward using innovation, quality service and public involvement to ensure a safe and healthy environment for all Ohioans.

Ohio EPA's goal is to protect the environment and public health by ensuring compliance with environmental laws and demonstrating leadership in environmental stewardship.

So Ms. Hunt, in summary we are asking; are you going to act as a manager of the OhioEPA using your mission statement as a guide or act like Sargent Shultz?

We look forward to your complete responses to all our questions via the Satra Concentrates section of the OhioEPA Website.

Sincerely,

Friends of Kolmont

Cc: Kristopher Weiss
Maria Galanti