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Submitted via electronic mail
publiccomment@epa.ohio.gov

Re: Comment on Heritage Thermal Services, Inc.'s Draft Hazardous Waste Renewal Permit and Draft Title V Renewal Permit

To Whom It May Concern:

On behalf of Save Our County, Inc., we respectfully submit the following comments on Ohio EPA's concurrent issuance of 1) a Draft Hazardous Waste Renewal Permit; and 2) a Draft Title V Renewal Permit to Heritage Thermal Services ("Applicant," "HTS," or "Heritage").

The Director should deny the Applications because the draft permits themselves and the history of compliance of the facility do not meet the criteria for permit application approvals or renewals. The renewal of the permits and the continued operation of the facility constitute an endangerment to the East Liverpool community; the Applicant has a history of past and continuing violations of its Title V permit and its RCRA permit that indicate an inability or lack of intention to comply with the applicable laws and regulations; the draft permits impermissibly relax emissions standards or limitations that the Applicant has had a history of non-compliance with; and the Draft Permits do not ensure the health and safety of the community and the environment.

A. The Director Should Deny the Applications Because the Draft Permits are not Adequate to Protect Human Health and the Environment.

Ohio Revised Code Section 3734.44, regarding the issuance or renewal of a permit, provides:

> Notwithstanding the provisions of any law to the contrary, no permit or license shall be issued or renewed by the director of environmental protection or a board of health:
>
> **(A)** Unless the director or the board of health finds that the applicant, in any prior performance record in the transportation, transfer, treatment, storage, or disposal of solid wastes, infectious wastes, or hazardous waste, has exhibited sufficient reliability, expertise, and competency to operate the solid waste, infectious waste, or hazardous waste facility, given the potential for harm to human health and the environment that could result from the irresponsible operation of the facility….

From its inception, the design and siting of the hazardous waste incinerator in East Liverpool has been inadequate to protect human health and the environment and has caused harm and potential harm to both. The location of the Incinerator alone is inappropriate for one of the largest hazardous waste incinerators in the world. The World Health Organization recommends that "[a]reas near the incinerator should not be populated, e.g., containing housing, athletic fields, markets, or other areas where people congregate."[1] The World Health Organization recommends that, even for small scaled units, that a buffer of 500 to 750 meters (1,640.42 to 2,296.59 feet) from populated areas is advisable. The HTS Incinerator that is proposed to be re-permitted by the Ohio EPA is only approximately 320 feet from the nearest neighborhood, which is a low-income, minority neighborhood, and this Incinerator is one of the largest hazardous waste incinerators in the world. The top of the stack of the incinerator sits at roughly *the same elevation* as part of the surrounding community. The river valley around the incinerator has steep slopes and hills along either side, making it susceptible to inversions leading to pollutants being trapped close to the ground. If the Ohio EPA's primary purpose is to protect the citizens of Ohio and East Liverpool from potential harm to human health and their environment, these statements alone should be enough to deny these renewal applications.

Furthermore, there has never been any reliable assurance that the Incinerator is not causing serious health and ecological impacts. The risk assessments and trial burn for the Incinerator have never accurately reflected, or adequately considered, the impacts from the Incinerator. This is largely due to the uncertainties and impacts of various pollutants for which both the state and federal EPA are unable effectively monitor and verify safe levels. Moreover, even in relation to the parameters for which the risk assessments accounted, the EPA failed to account for

[1] World Health Organization, Best practices for incineration, found at: http://www.who.int/water_sanitation_health/medicalwaste/en/smincinerators3.pdf

cumulative emissions impacts from nearby industries in conducting their risk assessments.[2] Peer reviews also noted significant data gaps in the risk assessments, for both human health impacts and ecological risks.[3] In addition, both the Ohio EPA and the U.S. EPA have failed to properly characterize the variability and uncertainty in their risk assessments for dioxin/furan exposure from the Incinerator's emissions. These failures and uncertainties mislead the public into a false sense of precision from the risk assessments, when in reality the most harmful emissions, such as dioxin/furan emissions, were never proven safe.[4]

Indeed, a United States District Court, after hearing from experts from all sides on the facts of this Incinerator, held that:

> This risk for *one year* of emissions is four times higher than any analogous acceptable risk for *lifetime* emissions. When this is considered along with the non-cancer effects, this Court finds it clear that the operation of the [HTS] facility during the post trial burn period clearly may cause imminent and substantial endangerment to health and the environment. It is patently unsafe to subject the population exposed to the facility's emissions to the risks involved in incineration while the USEPA determines what the risk is and what risk is acceptable.[5]

In 2000 many of these concerns were echoed by the national ombudsman for the Environmental Protection Agency, who declared "[i]t is neither protective of human health and the environment nor of public safety to allow the [HTS] facility to continue unrestricted operations."[6] The ombudsman went on to state that "[l]egitimate concerns must be addressed as to the resulting inconclusive nature of the prior trial burn and the ensuing uncertainties surrounding the risk assessment for the [HTS] facility."[7] The ombudsman's Report noted erroneous and misleading stack test data, and recommended that the plant be shut down pending an accurate trial burn. The ombudsman noted that the "recommendations are significant, as the [HTS] facility is in close proximity to residences and an elementary school."[8]

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[2] See Report on US EPA Technical Workshop on WTI Incinerator Risk Assessment Issues, 1996. Can be found at: https://nepis.epa.gov.

[3] *Id*.

[4] See *Health Risks from Dioxin and Related Compounds, Evaluation of EPA Reassessment*, National Research Counsel, 2006 at p. 4, found at: http://www.ejnet.org/dioxin/nas2006.pdf.

[5] *Greenpeace v. Waste Technologies Industries*, N.D.Ohio Case No. 4:93CV0083, 1993 U.S. Dist. LEXIS 5001, at *60-61 (Mar. 5, 1993).

[6] *See* http://www.nytimes.com/2000/11/04/us/the-2000-campaign-a-promise-the-refrain-of-a-bitter-town-where-was-al.html.

[7] The referenced Preliminary National Ombudsman Report-Waste Technologies Industries (WTI), East Liverpool Ohio, dated October 20, 2000 is attached as Appendix A and incorporated herein.

[8] *Id*.

Neither the Ohio EPA nor the U.S. EPA has ever followed this recommendation. Instead, the EPA conducted ambient air quality sampling that provided a mere snap shot of some ambient air pollutants, rather than accurately measuring or addressing the concerns from chronic exposure to various toxic emissions from the facility, and their cumulative impacts. Concerned citizens and various groups in the community, including Save Our County, have continually expressed their view that the facility should be shut down until proven safe, instead of using the community as an experiment for the unknown effects from the Incinerator's emissions.

The feared future high cancer rates and other health concerns are no longer a prediction; many feel that these concerns have unfortunately come to fruition. The Ohio Department of Health has noted that East Liverpool has a "strikingly high incidence rate of overall cancer, but also for bladder, colon & rectum, esophagus, lung & bronchus, multiple myeloma, and prostate cancer when compared to Ohio and the U.S.[9] The EPA and the Ohio EPA have also continually ignored calls for continual monitoring of air, soil, and crops at numerous sites within the vicinity of the Incinerator in order to assess impacts and presence of carcinogenic pollutants such as dioxin/furan over time. This has resulted in a situation where the community itself is questioned and even blamed for having high cancer rates, even though many in the community have been adamant that having industrial emissions like those of the Incinerator would have exactly this result. The Ohio EPA should stop hiding behind unknowns and conduct a full comprehensive health study to determine whether the Incinerator's permitted air emissions are a cause or contributor to the health concerns in East Liverpool, including the high cancer rates, before re-permitting a facility that is known to emit cancer causing pollutants and that continues to violate emissions limitations on those pollutants.

For these reasons and the reasons that follow, the Director should deny the renewal applications and not issue the RCRA and Title V Draft Permits because the conditions are inadequate to protect the environment and human health.

1. Dioxin/furan emissions should no longer be tolerated by the Ohio EPA because the risks constitute an endangerment to the East Liverpool community.

The U.S. EPA acknowledges that dioxins are "highly toxic and can cause cancer, reproductive development problems, damage to the immune system, and can interfere with hormones."[10] Moreover, once dioxin is released, it breaks down very slowly, and remains extremely persistent in the environment.[11] This makes any addition of any dioxin into the environment potentially dangerous to humans, and there is likely no safe level of dioxin with respect to its carcinogenic effect.

The dioxan/furan limitation in the draft Title V permit is 0.20 ng TEQ/dscm, corrected to 7% oxygen.[12] The Ohio EPA has previously justified allowing dioxin and furan emissions from the

[9] Letter from the Ohio Department of Health, dated August 19, 2010, attached as Appendix B.
[10] From *Dioxin Key Facts* found at: https://www.epa.gov/dioxin/learn-about-dioxin.
[11] *Id*.
[12] Draft Permit at p. 50 of 121.

Incinerator by stating that dioxin "is controlled through rapid temperature reduction of the flue gas in the air pollution control units and via the facility's Enhanced Carbon Injection System (ECIS)."[13] Accordingly, in order to show compliance with their dioxin standard, Heritage was required in its original permit to establish operating limits such as establishing and maintaining a maximum flue gas flowrate,[14] as well as establishing and complying with a minimum carbon feed and injection rate limit.[15] Heritage also has limits on their carbon feed pressure and minimum carrier fluid flowrate or pressure drop in order to show compliance with their dioxin/furan and mercury standards.[16] Moreover, Heritage is required to establish and maintain a minimum combustion chamber temperature operating parameter limit in order to comply with their dioxin/furan standard.[17]

As described more fully in Section B of this Comment, EPA recently cited heritage for significant and repeated violations of each and every one of these standards.[18] EPA previously noted violations of the dioxin limitation in performance tests in 2010.[19] In addition, as described more fully below, a review of the most recent compliance reports shows that these operating limits are still being violated. Violating the dioxin standard was clearly never corrected, and emitting this highly toxic pollutant into the community of East Liverpool should be unacceptable to the Ohio EPA, and grounds for denial of both the Title V and RCRA renewal applications to Heritage.

B. The Applicant has a History of Past and Continuing Violations of its RCRA Permit and its Title V Air Permit That Indicate an Inability or Lack of Intention to Comply with the Applicable Regulations.

All Permittees have an obligation to comply with all conditions of their permit absent an emergency authorization.[20] Noncompliance is grounds for permit revocation or modification, or denial of an application.[21]

Ohio Revised Code Section 3734.05(H)(2) provides that:

> The director **shall not** issue a renewal permit unless the director determines that the facility under the existing permit has a history of compliance with this chapter, rules adopted under it, the existing permit, or orders entered to enforce such requirements that demonstrates sufficient reliability, expertise, and

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[13] Responsiveness Summary Von Roll America, Inc., Ohio EPA Permit No. 02-15-0589, Page 7 of 179, found at: http://www.epa.state.oh.us/portals/32/pdf/VonRollRespSummary.pdf

[14] *See* U.S. EPA FOV dated March 23, 2015 at p. 8, attached as Appendix C, citing 40 C.F.R. § 63.1209(j)(2), (m)(2), (n)(5), and (o)(2).

[15] *See Id*. at p. 12, citing 40 C.F.R. § 63.1209(k)(6)(i) and (l)(3).

[16] *See Id*. citing 40 C.F.R. § § 63.1209(k)(6)(ii) and 63.1209(l)(3).

[17] *See Id*. at p. 9, citing 40 C.F.R. § § 63.1209(j)(l) and (k)(2).

[18] *See generally Id*.

[19] EPA Finding of Violation No. EPA-5-10-OH-16, dated June 18, 2010, attached as Appendix D.

[20] OAC 3745-50-58(A).

[21] *Id*.

> competency to operate the facility henceforth under this chapter, rules adopted under it, and the renewal permit. (Emphasis added).

Moreover, R.C. § 3734.44(D) mandates that no permit shall be renewed

> [u]nless the director or the board of health finds that the applicant has a history of compliance with environmental laws in this state and other jurisdictions and is presently in substantial compliance with, or on a legally enforceable schedule that will result in compliance with, environmental laws in this state and other jurisdictions.

The Incinerator has *never* been in full compliance with its air permits, including the most recent Title V air permit, and the long history of violations should be well known to the Ohio EPA. **The EPA has listed HTS as a High Priority Violator of the Clean Air Act and the Incinerator's Title V air permit for 12 of the last 12 quarters of operation.**[22] This shows clear noncompliance with the facility's Title V permit, and a renewal is, therefore, inappropriate. Although Heritage's history of violations is much more than what is outlined in this comment, Save Our County wishes to bring to Ohio EPA's attention the most recent unaddressed violations, and their potential consequences.

1. The Incinerator has a history of non-compliance with its Operating Parameter Limits.

In July of 2013, approximately 761 pounds of incinerator ash exploded from the stack of the facility and covered the nearby neighborhood and residences. This is an event that no community in this country should be required to tolerate. An investigation into the causes of this explosion unearthed a troubling amount of permit violations that have led to this and other combustion incidents at the facility. Yet, the Ohio EPA issued a mere $34,000.00 civil penalty, which is even less than the maximum penalty amount for a single violation under the Clean Air Act.

The U.S. EPA found that on 39 days from November 18, 2010 to December 31, 2014 the facility experienced over pressurization events such as the one that caused the July 2013 explosion, known as "clinker fall events."[23] The U.S. EPA used the information to note well over 200 violations of Heritage's permit related to the combustion events in a Findings of Violation dated March 23, 2015. The numerous violations and combustion events are not just aesthetically displeasing, as the U.S. EPA noted they lead to dangerous emissions of pollutants such as organic hazardous air pollutants, including PCBs, dioxin/furans, metals such as manganese and antimony, mercury and lead, arsenic and chromium, hydrogen chloride, and chlorine gas.[24] It is important to highlight that for dangerous metals such as mercury and lead, and cancer causing

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[22] *See* Detailed Facility Report, Enforcement and Compliance History Online, found at: https://echo.epa.gov/detailed-facility-report?fid=110027242320

[23] U.S. EPA FOV dated March 23, 2015 at p. 6.

[24] *Id*. at pp.16-18.

toxins such as dioxin/furans, there are no continuous monitors at the facility, and the Ohio EPA (and the community subjected to the Incinerator's emissions) relies on operating parameter limits to ensure compliance with limiting emissions of these pollutants. Thus, these violations reflect an endangerment to the community.

Furthermore, these violations have not ceased since EPA's citation and there has been no formal resolution by the EPA via consent decree or enforcement order. Quarterly compliance reports from the first quarter of 2015 (January 1, 2015) through the first quarter of 2016 (March 31, 2016) submitted to Ohio EPA show that HTS exceeded its kiln temperature limitations in addition to the U.S. EPA's FOV on the following dates:

- 01/06/2015
- 02/09/2015
- 02/13/2015
- 02/18/2015
- 04/24/2015
- 06/02/2015
- 06/18/2015
- 06/21/2015
- 8/15/2015
- 09/18/2015
- 12/28/2015
- 3/16/2016

Quarterly compliance reports show that HTS exceeded its minimum SCC temperature on the following dates:

- 01/06/2015
- 02/09/2015
- 02/13/2015
- 02/18/2105
- 04/14/2015
- 04/24/2015
- 06/02/2015
- 06/05/2015
- 06/18/2015
- 06/21/2015
- 12/28/2015

It should be stressed again that temperature limits for the Rotary Kiln and the Secondary Combustion Chamber are necessary to meet the destruction removal efficiency and dioxin/furan emissions standards for the Title V permit, especially since dioxin/furan is not continuously monitored. Therefore, the Incinerator's history of continued and uncorrected violations of these operating parameter limits make its continued operations a clear endangerment to the

community, and the Ohio EPA should deny the Title V renewal application for such noncompliance.

1a. At the very least, the Title V Permit should require continuous emissions monitoring for metals.

The current Draft Title V Permit has no continuous emissions monitoring system ("CEMS") requirement to determine compliance with metals emissions limitations for the Incinerator. There is no acceptable reason that Heritage should not be required to continuously monitor and report emissions of metals capable of being measured using multi-metal CEMS. Metals capable of being monitored include lead, mercury, arsenic, manganese, barium, beryllium, cadmium, chromium, cobalt, nickel, and selenium. The Incinerator's metals emissions limitations of mercury, lead and cadmium, arsenic, beryllium, and chromium are monitored by periodic emissions testing that is unspecified in the Draft Permit, but for the most part these harmful emissions are currently proposed to be controlled and monitored through "applicable Operating Parameter Limits" rather than any type of continual sampling or monitoring.[25] This is despite the fact that continuous emissions monitoring technology is a monitoring capability that is available for the Incinerator. Moreover, these pollutants should be of high concern to the Ohio EPA. Mercury is recognized by the U.S. EPA as having negative effects to the central nervous system and potentially causes kidney damage. Lead in humans, especially children, can have serious impacts to the central nervous system, blood pressure, and the kidneys.[26]

As noted in the Draft Permit, some factors that permitting authorities may consider when determining appropriate monitoring are 1) the variability of emissions from the unit in question; 2) the likelihood of a violation of the requirements; 3) the type of monitoring or control equipment data already available for the emissions unit; and 4) the type and frequency of the monitoring requirements for similar emission units at other facilities.

In justifying relying almost exclusively on operating parameter limits for all of these metals, Ohio EPA seems to suggest that monitoring required in the permit is sufficient to assure compliance with these standards.[27] The Ohio EPA admits that the Incinerator's feed has high variability but that the *emissions* from the Incinerator have less variability because of the combustion process. However, this does not mean that emissions do not have high variability. The resulting emissions are still going to vary highly depending on the waste streams being fed into them. The Ohio EPA next brushes over the factor regarding the likelihood of a violation with little explanation. However, analysis into this factor should raise significant concerns. As referenced in the section of this comment above, Heritage has a history of recent, and continuing violations of the operating parameter limits that are designed to control these pollutants. Furthermore, when

[25] Draft Title V Permit at p. 77.
[26] *See* U.S. EPA FOV dated March 23, 2015 at p. 17.
[27] *See* Draft Title V Permit at p. 13.

looking at other hazardous waste incinerators, Ohio EPA admits that the monitoring technology is available, and does not seem to have much or any knowledge of other commercial hazardous waste Incinerator requirements, but also recognizes a specific example of the Veoli, Sauget, IL Incinerator installing muli-metal CEMS.[28]

Moreover, the U.S. EPA's Citgo decision regarding compliance monitoring requirements in Title V air permits states that:

> If there is some periodic monitoring in the applicable requirement, but that monitoring is not sufficient to assure compliance with permit terms and conditions, permitting authorities must supplement monitoring to assure such compliance. 40 CFR 70.6(c)(1).

Overall, the Draft Permit represents a clear example of some periodic monitoring, but it is certainly not enough to determine compliance with the emissions limitations for an EPA listed High Priority Violator Incinerator. Therefore, if the Ohio EPA feels that it should issue the Draft Permit, which we feel is wholly inappropriate given the Incinerator's location and compliance history, the Ohio EPA should at least require continuous emissions monitoring for metals emissions.

2. The Title V Air Permit should not be renewed because HTS has shown that it is unable or unwilling to comply with the Total Hydrocarbon limit.

Heritage is required to continuously monitor total hydrocarbons ("THC") to show compliance with standards related to organic hazardous air pollutants. These pollutants include polycyclic aromatic hydrocarbons ("PAHs") and polychlorinated biphenyls ("PCBs"), which are both human carcinogens, and described by Ohio EPA as "considered toxic, persistent and bioaccumulative."[29] Organic hazardous air pollutants also include dangerous pollutants such as benzene, methane, propane, chlorinated alkanes, phenols and chlorinated aromatics.[30] These pollutants can cause damage to immune systems, as well as neurological, reproductive, developmental, respiratory, and other health problems.[31]

Heritage has *always* been unable to comply with their total hydrocarbon emissions limit of 10 parts per million by volume over an hourly rolling average. The U.S. EPA recently cited HTS for approximately 195 instances where this standard was violated from November 2010 to December of 2014.[32] These violations have not been corrected since EPA's citations. A review of quarterly excess emissions reports from the first quarter of 2015 (January 1, 2015) through the

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[28] *Id*.
[29] U.S. EPA FOV dated March 23, 2015 at p. 16.
[30] *Id*.
[31] *Id*.
[32] *Id*. at pp. 7-8.

first quarter of 2016 (March 31, 2016) submitted to Ohio EPA reveals that THC emissions were exceeded on the following dates:

- 01/01/2015
- 01/03/2015
- 01/08/2015
- 01/08/2015
- 01/09/2015
- 02/01/2015
- 02/13/2015
- 02/22/2015
- 03/04/2015
- 03/05/2015
- 03/14/2015
- 04/02/2015
- 04/05/2015
- 04/07/2015
- 04/08/2015
- 04/16/2015
- 04/17/2015
- 04/20/2015
- 04/24/2015
- 04/26/2015
- 05/02/2015
- 05/06/2015
- 05/13/2015
- 05/16/2015
- 05/27/2015
- 05/28/2015
- 06/03/2015
- 06/18/2015
- 06/21/2015
- 06/27/2015
- 07/12/2015
- 07/13/2015
- 07/14/2015
- 07/18/2015
- 07/20/2015
- 07/22/2015
- 07/23/2015
- 07/24/2015
- 07/25/2015
- 07/29/2015

- 08/01/2015
- 08/03/2015
- 08/04/2015
- 08/05/2015
- 08/11/2015
- 08/12/2015
- 08/17/2015
- 8/18/2015
- 08/19/2015
- 09/07/2015
- 09/13/2015
- 09/22/2015
- 09/25/2015
- 10/01/2015
- 10/02/2015
- 10/29/2015
- 11/24/2015
- 11/26/2015
- 1/27/2016
- 3/29/2016

Save Our County does not currently have in their possession the most recent quarterly excess emissions reports beyond the first quarter of 2016, but the pattern of exceedences and violations is obvious. Indeed, on May 25, 2017 Ohio EPA issued a Notice of Violation for Heritage's violation of their THC emissions limitation on March 25, 2017.[33] Therefore, since Heritage has shown that they are unable to comply with this vital permit standard, the Ohio EPA should not renew Heritage's Title V Air Permit for the Incinerator.

3. Heritage has been unable to comply with their short-term permit limitations for nitrogen oxides and sulfur dioxides.

Heritage also has a clear history of violations for short-term limitations of nitrogen oxides ("NOx"), sulfur dioxides ("SO2"), and to a lesser extent, opacity. Heritage's draft permit contains emissions limitations of 28.36 pounds per hour of NOx and 11.34 pounds per hour of SO2. These limits are proposed to be the same as the currently expired Title V permit.[34] Ohio EPA has continuously cited Heritage for violations of these standards, and Heritage has shown that they are unable to comply with such standards. As examples, the Ohio EPA has issued the followings NOVs for NOx, SO2, or both:

[33] *See* Notice of Violation, dated May 26, 2017, found at: http://edocpub.epa.ohio.gov/publicportal/edochome.aspx.
[34] Draft Title V permit at p. 49 of 21.

- On November 16, 2009, Ohio EPA issued Heritage an NOV for SO2 exceedances for the third quarter (July 1–September 30) of 2009.[35]
- On June 14, 2010, based on the 2010 first quarter (January 1-March 31) Excess Emissions Report, Ohio EPA issued Heritage an NOV for exceedances of short-term emissions limitations for SO2, NOx, and total hydrocarbons ("THC").[36]
- On April 19, 2010, Ohio EPA issued Heritage an NOV for exceedances of SO2, NOx, THC, carbon monoxide ("CO"), hydrochloric acid ("HCl"), and opacity limitations.[37]
- On February 15, 2011, based on the 2010 fourth quarter (October 1–December 31) Excess Emissions Report, Ohio EPA issued Heritage an NOV for exceedances of short-term limitations for NOx and THC.[38]
- On June 3, 2011, based on the 2011 first quarter Excess Emissions Reports, Ohio EPA issued Heritage an NOV for exceedances of short-term limitations for NOx, SO2, THC, and opacity limitations.[39]
- On January 21, 2016, based on the second quarter 2015 Excess Emissions Report, Ohio EPA issued Heritage an NOV for excess emissions of NOx.[40]

Although Ohio EPA eventually stopped the frequency of issuing NOVs for these standards, Quarterly Excess Emissions Reports up to 2016 reveal **hundreds of violations** for **each** of the SO2 and NOx emissions limitations.

Excess NOx in the ambient air can cause serious human health problems. Excess emissions of NOx increase the amount of acid rain and ground level ozone, which can cause respiratory inflammation, difficulty breathing, and lung damage. NOx emissions also contribute to fine particles in the atmosphere, water quality deterioration, and visibility impairment.[41] Additionally, NOx reacts with ammonia and moisture to form small particles. These particles penetrate into sensitive parts of the lungs and cause or worsen respiratory disease.[42]

Excessive sulfur dioxide emissions can cause significant impacts to human health. Excess emissions of SO2 increase the amount of acid rain and public exposure to harmful levels of SO2. SO2 also reacts with chemicals in the air to form tiny sulfate particles. Long term exposure to high levels of SO2 gas and sulfate particles can cause respiratory illness, aggravate existing heart disease, and lead to premature death. Courts have recognized that SO2 emissions are "a medically recognized threat to human health."[43]

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[35] Ohio EPA Notice of Violation, dated November 16, 2009. Each of these NOVs can be found at: http://edocpub.epa.ohio.gov/publicportal/edochome.aspx.
[36] Ohio EPA Notice of Violation, dated June 14, 2010.
[37] Ohio EPA Notice of Violation, dated April 19, 2010.
[38] Ohio EPA Notice of Violations, dated February 15, 2011.
[39] Ohio EPA Notice of Violation, dated June 3, 2011.
[40] Ohio EPA Notice of Violation, dated January 21, 2016.
[41] *See* http://www3.epa.gov/airquality/nitrogenoxides/.
[42] *See* http://www3.epa.gov/airquality/nitrogenoxides/health.html.
[43] *Ohio Power Co. v. US EPA*, 729 F.2d 1096, 1097-1098 (6th Cir. 1984).

Heritage's continued non-compliance with these emissions limitations should no longer be tolerated, and these violations, along with the other compliance issues outlined in this Comment should be grounds for the Ohio EPA to deny the Title V permit application renewal.

3a. The Title V permit impermissibly relaxes permit limits for pollutants for which HTS has had a history of violations.

To make matters worse, instead of finding ways to comply with these standards, Heritage requested that the Ohio EPA to allow them to submit their monitoring data as three-hour block averages, instead of the required one-hour rolling average. Inexplicably, Ohio EPA granted this modification in the latest draft Title V permit.

A three-hour block average is unquestionably a more relaxed standard than the previous rolling one-hour average requirement. Such a modification has allowed Heritage a greater number of lower, in-compliance continuous monitoring measurements to be weighed against emissions spikes that take Heritage out of compliance with their hourly emissions standards. This assertion is supported by Dr. Ranajit Sahu, an environmental and mechanical engineer, who explained:

> A change in exceedance by expanding the hours over which measured emissions are averaged (i.e., from 1-hour to 3-hours), while leaving the numerical value of the limit the same, in effect, smooths out and hides instances when the same numerical limit would have been exceeded had the shorter averaging period been used. The longer the averaging period, the lower the stringency, if the numerical value of the limit is unchanged….[44]

This reality has been experienced in HTS's most recent Excess Emissions Reports for these pollutants. For instance, Heritage submitted a report to Ohio EPA containing three-hour block averages of Continuous Emissions Monitoring results for SO2 for a period covering January 1, 2013 through December 31, 2014, and the data showed that, under this vastly different reporting scheme, there was only one exceedance of the SO2 limit.[45] However, the Excess Emissions Report using the required rolling one-hour average standard showed that Heritage actually exceeded their short-term hourly emission limitation for SO2 approximately 23 times during that same period. Indeed, an expert's review of more recent Excess Emissions Reports using the three-hour block average compared to actual CEMS data showed hundreds of additional exceedances of these pollutants using a rolling one-hour average as compared to the three-hour block average.[46]

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[44] Amended Expert Report of Dr. Ranajit Sahu at p. 6 (Appendices omitted), attached as Appendix E.
[45] NOX_SOX 3-HR Block Excess Emission Report, dated January 15, 2015.
[46] *See* Amended Expert Report Dr. Ranajit Sahu, at p. 12.

It is wholly inapposite of the purposes of the CAA to allow a facility to come into compliance by simply relaxing the compliance reporting and averaging standards. Save Our County and their members are especially troubled to find that a facility that has had consistent compliance issues with a wide range of permit limitations should be permitted to hide violations of its permit and come into "compliance" by merely diluting its reporting requirements and making violations less visible to the public. The Title V permit applications should ultimately be denied due to HTS' unresolved compliance issues, but at the very least HTS should be required to continue to report their violations using the more accurate rolling one-hour average standard.

4. Heritage has had a history of non-compliance with its RCRA Permit.

HTS has been in significant non-compliance with its RCRA Subtitle C permit for 3 of the past 12 quarters.[47] In making this non-compliance determination, the U.S. EPA relied on inspections performed and violations found by the Ohio EPA.[48] According to an electronic document search on the Ohio EPA's website, the Ohio EPA has cited HTS for Notices of Violations on at least 20 occasions since March of 2007 for the state-issued RCRA Subtitle C permit renewal at issue.[49] These violations coupled with the violations of their Title V Permit show a clear disregard by HTS for its RCRA permit standards and the applicable regulatory requirements, and such repeated and consistent violations result in damage to the environment and pose a threat to the health and safety of the surrounding community. By way of example, on December 6, 2011, the Ohio EPA issued a notice of violation to HTS when they mistakenly incinerated containers of light bulbs causing HTS (then known as "WTI") to exceed their permitted limit for mercury emissions, among other things.[50] As another example, in November of 2009 the Ohio EPA issued a notice of violation to HTS because observations of bulk solid waste sampling "revealed no attempt to take samples below the surface or collect a large volume of waste material."[51]

These examples illustrate typical, ongoing and potentially dangerous compliance issues at the facility and given the history of violations with its environmental permits, and the unconscionable location of the Incinerator in such close proximity to the surrounding neighborhood, the Ohio EPA should not renew or reissue the facility's RCRA Permit or its Title V Air Permit.

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[47] *See* Detailed Facility Report, found at: https://echo.epa.gov/detailed-facility-report?fid=110027242320

[48] *See* https://echo.epa.gov/detailed-facility-report?fid=110027242320#pane3110027242320 (State listed as the Lead Agency for most inspections).

[49] Notices of Violation by the Ohio EPA for HTS can be found at: http://edocpub.epa.ohio.gov/publicportal/edochome.aspx.

[50] Ohio EPA, Notice of Violation to Heritage-WTI, Inc., dated December 6, 2011. This NOV can be found at: http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=51579.

[51] Ohio EPA, Notice of Violation to Heritage-WTI, Inc., dated November 24, 2009, at 2. This NOV can be found at: http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=58650.

C. The facility is located in an Environmental Justice Community and the permitting process, therefore, requires heightened public participation and scrutiny.

As a recipient of federal funding, the Ohio EPA is under a legal obligation to comply with Title VI of the Civil Rights Act. Under the US EPA's Title VI implementing regulations, states may not use methods of administering their environmental programs that have the effect of subjecting individuals or communities to disproportionate environmental consequences because of their race, color, or national origin. Central to this mission, the EPA's Environmental Justice ("EJ") program defines "environmental justice" as the fair treatment and meaningful involvement of all people with respect to the development of environmental laws, regulations, and policies.[52] EPA requires that particular emphasis should be placed on public health and environmental conditions affecting minority, low-income, and indigenous populations because they frequently bear a disproportionate burden of environmental harms and risks.[53]

By now the EJ concerns of East Liverpool, especially those closest to the Incinerator, are well known. Most of the residents of East Liverpool have incomes at or near the poverty level. The majority of the town's minority residents live in the immediate vicinity of the HTS facility.[54] Moreover, children and the elderly, two groups that are more susceptible to health risks created by pollution, make up a large number of the town's total population.[55]

Compliance with meaningful involvement standards for EJ communities requires something "beyond the minimum requirements of standard notice and comment procedures…."[56] When considering actions affecting EJ communities, such as the community where the HTS facility is located, the EPA suggests consideration of, among other things, 1) whether the action supports or enhances compliance assurance; 2) whether the action supports enforcement against violators; and 3) whether the action promotes transparency and meaningful involvement.[57]

Although the Ohio EPA does not have a separate EJ office and has not released guidance related to EJ standards, it is required to meet its legal obligations and implement federal guidance in the technical review of, and in public involvement activities on permit applications.[58] Among the community benefits recognized by the Ohio EPA as beneficial to EJ communities are "[i]ncreased

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[52] The definition of Environmental Justice can be found at:
http://www.epa.gov/oecaerth/environmentaljustice/basics/index.html
[53] US EPA, Interim Guidance on Considering Environmental Justice During the Development of an Action, 2010, at 3-4.
[54] University of Michigan, Environmental Justice Case Study: Waste Technologies Industries, Inc. and the Fight Against A Hazardous Waste Incinerator in East Liverpool, Ohio, found at:
http://www.umich.edu/%7Esnre492/mcormick.html#Demographics
[55] *Id.*
[56] *Id.* at 9.
[57] *Id.* at 10.
[58] *See* Ohio EPA and Environmental Justice, found at:
http://ohioepa.custhelp.com/app/answers/detail/a_id/1097/~/ohio-epa-and-environmental-justice

inspections of companies and resolution of neighborhood concerns" and "[b]etter assurance to the neighborhood that companies are in compliance with their environmental permits."[59]

Therefore, the Director must provide more than "the minimum requirements of standard notice and comment procedures" as well as undertake an enhanced review of the applications and account for all of the concerns that this particular Environmental Justice Community faces, including the fact that the facility is in significant noncompliance with their Title V permit and the history of pollution and environmental concerns that the community has faced and continues to face.

At the public hearing regarding the RCRA and Title V permit renewals that was held August 10, 2017 in East Liverpool, the Ohio EPA gave community members only three minutes to voice their concerns about the Incinerator and the draft permits. Because the Ohio EPA provided no notice prior to the hearing that community members would only have three minutes to speak, individuals who had spent significant time preparing comments (and who have decades' worth of direct experience with the Incinerator) were not able to tailor their remarks in such a way that would communicate their most critical concerns. Attendees were also told they could not give their time to other speakers in order to provide a particular community member with more time to speak. Thus, community members were yet again left feeling voiceless and unable to adequately express the problems that have plagued them for decades to the agency responsible for governing their environmental health.

This failure to give the residents of East Liverpool adequate time to express their concerns, or at the very least, to notify community members of the limited time available to them so they could prepare accordingly, is just one example evidencing that the Ohio EPA has not provided more than just the minimum requirements of standard notice and comment procedures in its review process for these renewals. Moreover, East Liverpool residents speaking at the hearing specifically mentioned the difficulty they had in posting and sharing notification of the hearing to their fellow community members due to Heritage's strong influence in their community. This is yet another way the Ohio EPA did not go above the minimum notice and comment requirements in order to ensure community concerns were adequately addressed and accounted for in their review process.

East Liverpool residents have already endured countless adverse impacts as a result of the industrial activities in the area, none more troubling and impactful than the activities at HTS's hazardous waste incinerator located just 300 feet from their community. The Ohio EPA must undertake a comprehensive evaluation of the applications and, in doing so, the Director should finally disapprove the Applications for the reasons outlined in this comment. At a minimum, the Director should conclude that the Application and the Draft Permit are incomplete and inadequate in their monitoring and in that they have relaxed certain reporting requirements for which HTS has a history of violations.

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[59] *Id.*

D. Heritage's repeated citations by the Occupational Health and Safety Administration Demonstrate a Culture of Noncompliance and Disregard for Applicable Regulations.

The draft permits do not ensure the health and safety of the community, including Heritage's own employees. Heritage has a history of citations by the U.S. Department of Labor's Occupational Health and Safety Administration ("OSHA") for willful, serious, and repeat violations that have caused employee injury and death from exposure to hazardous chemicals.

In August 2012, following the December 2011 death of a Heritage employee who was killed at the facility by a metal dust deflagration, OSHA cited Heritage for 11 health violations, including one willful violation for Heritage's failure to review and annually certify operating procedures for the process safety management of hazardous chemicals.[60] Willful violations are issued for violations committed with intentional knowing or voluntary disregard for the law's requirements or with plain indifference to worker safety and health. The remaining violations were classified as serious, meaning there was substantial probability that death or serious physical harm could result from a hazard about which an employer knew or should have known. These serious violations included, among others, the failure to address problems found in process hazard analyses, failing to conduct a process hazard analysis on the kiln, and failing to provide documentation proving the kiln complied with recognized engineering standards.

In February 2016, OSHA cited Heritage for four repeat violations and one serious violation, following an investigation into the toxic exposure of an employee to aniline.[61] The exposure resulted in the employee becoming disoriented while pumping hazardous wastes from drums into an outdoor kiln for incineration and led to his transport to a hospital for treatment. In 2012, three other workers also became ill and were hospitalized following unsafe aniline exposure. Speaking on the incident, OSHA's area director stated the employee "suffered needlessly because Heritage Thermal again failed to provide adequate personal protective equipment to its workers tasked with toxic chemical disposal." The OSHA citations stemming from the incident included violations for failing to monitor work areas and implement a decontamination procedure, amongst others.

These OSHA violations further demonstrate Heritage's culture of noncompliance and disregard for applicable regulations as well as its general disregard for human health and life in its vicinity. They provide additional evidence that the facility's disregard for the law should lead the Director to disapprove Heritage's permit renewal applications or at the very least ensure that more stringent monitoring and inspection requirements, including the ones suggested in this Comment, are included in any permit.

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[60] OSHA Region 5 News Release – 12-1563-CHI (Aug. 7, 2012), US Labor Department's OSHA cites Heritage-WTI for deficiencies in process safety management program, other violations; fines total $126,000.

[61] OSHA Region 5 News Release – 16-288-CHI (Feb. 24, 2016), Service technician hospitalized after toxic chemical exposure at Ohio hazardous waste incineration facility *OSHA cites Heritage Thermal Services in East Liverpool*.

E. Conclusion

For the reasons stated in this comment, the Director should disapprove of Heritage's RCRA and Title V permit renewals and deny the facility's permit applications to renew or reissue its permits.

Respectfully submitted,

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Appendix A

PRELIMINARY NATIONAL OMBUDSMAN REPORT – WASTE TECHNOLGIES INDUSTRIES (WTI) EAST LIVERPOOL, OHIO. – OCTOBER 20, 2000

TO: Timothy Fields Jr.
Assistant Administrator

Francis X. Lyons
Regional Administrator

George T. Frampton, Jr.
Chairman, White House Council on Environmental Quality

FROM: Robert J. Martin
National Ombudsman

Summary

I am writing to submit my preliminary recommendations in connection with my investigation of the Waste Technologies Industries (hereinafter "WTI") facility in East Liverpool, Ohio. The investigation has been comprised of several months of intensive review of documents from the Administrative Record as well as voluminous responses to interrogatories from all of the parties, including the Environmental Protection Agency (EPA). A public hearing was also held last month in East Liverpool, Ohio, at which I and U.S. Representative James Traficant heard witnesses on the record with respect to WTI matters. A transcript of the hearing is attached for your review.

This formal dimension of the investigation was accompanied by informal meetings with WTI and citizens in August in Ohio at my request and ex parte meetings with WTI, Mr. Fields, Mr. Lyons and other representatives of the Administration and the Agency and with citizens and their representatives, not at my request, in February of this year.

The ostensible purpose of the ex parte meetings was to affirm that Mr. Frampton's commitment to "an expedited and independent Ombudsman review of the WTI hazardous waste incinerator would be supported with adequate resources by EPA and would be conducted in accordance with Ombudsman standards embodied within resolutions of the American Bar Association, the United States Ombudsman Association and the EPA Ombudsman Handbook. See, Letter from George T. Frampton, Jr., Acting Chair, White House Council on Environmental Quality, to Ms. Theresa Swearingen, Tri-State Environmental Council and Mr. Rick Hind, Greenpeace Toxics Campaign, dated January 31, 2000. Agreement was also reached that upon submission of the preliminary recommendations, EPA would distribute the report to all parties simultaneously and make decisions on the recommendations within 2 weeks.

U.S. Representative Dennis Kucinich wrote EPA to support the investigation in February

of this year, opining that the lack of environmental monitoring at the WTI facility "completely undermines the credibility of EPA's hazardous waste program." He urged that EPA "accept the Ombudsman's recommendations as you have in the cases of Brio, Texas; Times Beach, Missouri; Lock-Haven, Pennsylvania; and most recently . . . in Denver, Colorado." See, Letter from U.S. Representative Dennis Kucinich, to EPA Assistant Administrator Timothy Fields, Jr., dated February 16, 2000. U.S. Representative James Traficant also wrote President Clinton and Vice President Gore in support of the investigation in February and in later correspondence on the issue of funding opined that the federal government had spent more "to vaccinate dogs in Haiti" than it had committed funding to support this investigation to determine if the health of citizens in East Liverpool was being protected by EPA." See, Letters from U.S. Representative James Traficant to President Clinton and Vice President Gore, dated March 8, 2000 and May 19, 2000 respectively.

Indeed, health and safety of the public was a primary concern voiced during the Ombudsman hearing, regarding operation of the WTI facility. East Liverpool Mayor Delores Satow noted that the local government had "relied almost solely on the EPA" for assurances on safety and risk-management." See, Hearing Record at pg. 99-100. Councilman Wycoff observed that "we most certainly do take it very seriously about the safety of our community." See, Hearing Record at pg. 120. Councilman Hogue, articulating that "safety being our foremost concern" went on to opine that "if there's a possibility . . . that the facility is not as safe as the company claims that someone needs to be there in the middle to steer the course." See, Hearing Record at pg. 122-23.

In view of the need to ensure that timely decisions are made with respect to decision-making on the recommendations of this case and to serve the interest of safety and protecting human health and the environment; I set this case down for expedited review once promised resources became available in May of this year. The investigative process for this case along with guidelines, procedures and a schedule was distributed to parties on May 4, 2000.

Working allegations were distributed to the parties in June of this year to ensure that issues were addressed and to continue to move the investigative process forward. As noted for the benefit of the parties at that time "[t]he only conclusion to be drawn from the working allegations is that these are the issues I have determined this moment will be investigated. No conclusions about what I will find or what recommendations I make are warranted. Those decisions will be made during the investigative process."

Obviously, the question of what issues are involved in this case, in general, and what issues will be considered in this preliminary report, in particular, are of major significance and have been the subject of debate about Ombudsman jurisdiction. In order to address this matter squarely, I requested briefs from the parties by June 19, 2000 regarding issues of jurisdiction. I have thoroughly reviewed the arguments. I have determined that this Ombudsman function has the authority to take cognizance of and to make recommendations upon the WTI case.

Ombudsman jurisdiction over the WTI case, therefore, is appropriately pending, and will continue. See, Jurisdiction, Section III. The narrow issue addressed in this preliminary report is whether, in view of new information of compromised and insufficient environmental monitoring data affecting both the WTI trial burn and the risk assessment, is it protective of human health and the environment and of public safety to allow continued unrestricted operation of the WTI incinerator? My considered presumption is that it is neither protective of human health and the environment nor of public safety to allow the WTI facility to continue unrestricted operations in the face of such new information about insufficient and compromised data.

Legitimate concerns must be addressed as to the resulting inconclusive nature of the prior trial burn and the ensuing uncertainties surrounding the risk assessment for the WTI facility. Consistent with EPA authority, guidance and National Ombudsman precedent in such cases, therefore, my principal recommendation is that EPA and Ohio EPA restrict operations at the WTI facility immediately by: (1) Halting the feeding of waste to the incinerator for a period of no less than six months; (2) Make preparations for a retest of the trial burn or a new trial burn in 2001 as a necessary step in the consideration by Ohio EPA of permit renewal for the facility next year; and (3) With new data from the new trial burn, perform a new Addendum to the risk assessment for the WTI facility.

This should be a collaborative effort between EPA Region V, the EPA Environmental Response Team, the Ohio Environmental Protection Agency, the Ohio Department of Health, Waste Technologies Industries and their technical advisors, the City of East Liverpool Board of Health and the Tri-State Environmental Council and their technical advisors.

EPA Region V supports the Ombudsman investigative process that yielded this recommendation: "Region V supports this review process. It's been our experience that similar reviews such as those performed by the General Accounting Office and the EPA Inspector General have resulted in program improvements." See, Statement of Gary Victorine at Hearing Record pg. 222-223. The Ombudsman investigative process will continue until the issuance of a Draft Final Report on April 1, 2001. Additional interrogatories will be posed as well as several more interviews on the record among the parties. The Draft Final Permit will contain a broader set of recommendations. A final public hearing will be held to gather the views of the public on the record before issuance of the Ombudsman Final Report.

Of course, this schedule anticipates the provision of adequate resources from the EPA to bring to conclusion the Ombudsman investigative process for the WTI case. Until the issuance of my final report, my preliminary recommendations should be considered rebuttable presumptions, that is, initial findings that can be overturned upon the showing of sufficient proof. As U.S. Representative Traficant noted in the Ombudsman public hearing last month in East Liverpool: "So I think its time for some closure. It's time to stop it. It's time to find out what's right, what's wrong." See, Hearing Record at pg. 170.

I commend the findings, analysis and recommendations of this preliminary Ombudsman report to you for prompt decision-making. In accordance with your commitment to the citizens of East Liverpool, Ohio made during the February meeting, I welcome review and comments from the parties over the next two weeks prior to your decisions on these recommendations. I trust the Ombudsman investigative process will continue to remain open, independent and supported by EPA, financially and otherwise.

Authority

The Office of Ombudsman was established by the Congress within Section 2008 of the Resource Conservation and Recovery Act. Section (a) of the law authorized the Ombudsman to "receive individual complaints, grievances, and requests for information submitted by any person with respect to any program or requirement under this Act." Subsection (b) authorized the Ombudsman to "make appropriate recommendations to the Administrator." EPA established the Office in 1986 pursuant to the Congressional mandate. Following sunset of the mandate in 1989, EPA decided to make the Office of Ombudsman and its functions permanent because "Congress has chosen this solution for dealing with such problems in the hazardous waste programs EPA

administers." See, Hazardous Waste Ombudsman Handbook at pg. 1-1.

Thus, "[b]oth the statutory language and its legislative history confirm the importance Congress places on the public assistance function of the Office of Ombudsman. By centralizing these functions in the Office of Ombudsman, Congress intended to improve EPA's responsiveness to the public with respect to the increasingly complex RCRA and Superfund programs . . . the charge of the Ombudsman to provide assistance with problems, complaints, or grievances, is an extremely broad one." See, Handbook at pg. 2-2,3. Notably, the authority and framework of the Office of Ombudsman did not originate with EPA; EPA merely elected to make permanent an institution that the Congress had required in the law and for which the mandate had expired.

The Office of Ombudsman has undertaken several cases within the past six years in which significant EPA decisions have been reviewed and modified. In the Vertac case, the Office of Ombudsman responded to a petition from citizens affected by operation of a Superfund incinerator. Working closely with EPA Region VI officials, an independent expert from EPA Region X reporting to the Office of Ombudsman and the EPA Criminal Investigation Division; significant recommendations were made to complete a new engineering assessment, to replace kiln seals and to implement new Standard Operating Procedures for the site. All the recommendations were adopted by EPA Region VI. A subsequent criminal referral was made by the Office of Ombudsman and accepted by the EPA Inspector General. Following the Ombudsman Vertac case, the EPA ceased operations at the facility before completion of the incinerator.

In the Brio case, the Office of Ombudsman responded to a petition from citizens affected by the prospect of an operating Superfund incinerator in their community near Houston, Texas. EPA Administrator Carol M. Browner addressed the concerns about the remediation of the Brio Superfund site with Governor Ann W. Richards of Texas in a letter dated March 4, 1994. The Administrator noted that "I have been made aware of the issues associated with the site, have discussed the issues with senior managers within the Agency, and believe we are making significant progress in addressing your concerns . . . ." Regarding the Office of Ombudsman report discussed by Governor Richards, the Administrator remarked that "I am in the Superfund Revitalization Office and the OSWER Ombudsman of the Environmental Protection Agency Headquarters . . . . I understand that EPA Region VI has already undertaken steps to implement some of the recommendations contained in the draft report . . . . We are planning to have the final report finished in the near future, and we will continue to work with EPA Region VI and the State to resolve all issues."

The Office of Ombudsman Final Report in the Brio case made several recommendations in connection with, among other issues, site characterization, fugitive emissions and the air monitoring system. EPA agreed to implement all of the Ombudsman recommendations made in the Final Report. After issuance of the Final Report, the Office of Ombudsman helped facilitate a dialogue between the petitioning citizens, EPA Region VI officials and the responsible parties for the Brio site. A Focused Feasibility Study was undertaken. The incineration remedy has not been pursued at the Brio site. The Incinerator was never built, rather, a contaminant remedy with a gas collection system is being implemented.

In the Times Beach case, the Office of Ombudsman responded to citizens petitioning about the effects of the incineration remedy selected by EPA at the Times Beach Superfund site in Missouri. Once again, the Office of Ombudsman, within the context of Interim and Final Reports, addressed such issues as risk assessment, fugitive emissions and the air monitoring

system. Ultimately, the Office of Ombudsman had no discretion to recommend continued operation of the incineration remedy at Times Beach without another Dioxin Stack Test. Violations of EPA chain of custody legal requirements necessitated, in the view of the Office of Ombudsman, a complete re-test of the Dioxin Stack Test for the incineration unit. Other recommendations were made to improve the air monitoring system. To address public confidence in the incineration remedy and for other reasons, EPA agreed to implement all of the recommendations made in the Final Report. The EPA Environmental Response Team was tasked to work with the petitioning citizens and the parties in a technical mediation role. Subsequent to release of the Office of Ombudsman Times Beach Report, the U.S. Attorney for the Eastern District of Missouri empanelled a criminal grand jury to address, among other issues, the issues raised in the report.

In the Drake case, the National Ombudsman addressed several issues going to the operation of a Superfund hazardous waste incinerator near residences, a shopping center and a nursing home in Lock Haven, Pennsylvania. EPA Region III agreed to several Ombudsman recommendations, which resulted in operation improvements, such as, improved site characterization (including better detection of BNA in the air monitoring system) control of fugitive emissions and addressing deficiencies in the risk assessment (gathering 5 years of meteorological data instead of relying upon less data).

In the Shattuck case, arising from a petition by affected citizens in Denver, Colorado; as well as requests from Governor Bill Owens of Colorado, Mayor Wellington Webb of Denver, Congresswoman Diana DiGette and Senator Wayne Allard of Colorado to undertake an Ombudsman case; the central issue addressed was whether it was protective of long-term human health and the environment to allow radioactive waste to remain entombed within a Superfund containment remedy in the city of Denver?

Based upon expert testimony in the Ombudsman public hearings that the containment remedy would last 10-15 years, not 200-1000 years as required by law, the lack of site characterization and other evidence, the EPA decided to accept a National Ombudsman recommendation last year that the Shattuck waste be removed, completely reversing a prior Record of Decision.

In the Stauffer case, recently brought up for National Ombudsman consideration by petition of affected citizens from Tarpon Springs, Florida and U.S. Representative Michael Bilirakis, EPA Region IV accepted an Ombudsman recommendation to withdraw the consent decree lodged with a federal district court. The basis for withdrawal and acceptance of the Ombudsman recommendation was evidence adduced in the Ombudsman public hearings that the Stauffer Superfund site had not been adequately characterized for the existence of sinkholes, the effect of migration of waste on the Floridian aquifer and other hydrogeological concerns. All parties concurred with the National Ombudsman recommendation for withdrawal of the consent decree, pending more scientific work and adequate characterization of the site.

A body of precedent has long been established, therefore, regarding acceptance of National Ombudsman case recommendations by the EPA and other parties, including members of Congress, state governments, citizens and responsible corporations. Such cases have also squarely addressed the merits of this particular case, i.e., operation of a hazardous waste incinerator encompassing issues such as air monitoring, stack monitoring, risk assessment, trial burns, fugitive emissions and waste characterization.

Jurisdiction

A challenge has arisen from WTI regarding whether the National Ombudsman has jurisdiction to hear this case and to make recommendations thereon. That challenge was raised in the May 26, 2000 response of WTI to my request for issues, witnesses and other information and reads as follows:

> "WTI respectfully submits that the Ombudsman does not have jurisdiction to consider complaints that amount to a collateral attack on the RCRA permit itself, which is a final agency action that was previously subject to review by the Administrator and the courts. The RCRA statute and EPA's regulations provide specific procedures for the issuance, revocation, and renewal of RCRA permits, including the opportunity for a public hearing and public comments, and appeal procedures to the Administrator and the U.S. Court of Appeals. See 42 U.S.C. §§ 6925, 6976(b); 40 CFR Part 270. It is a very important doctrine of law that permits should not be subject to collateral attack in administrative or judicial actions that are outside the permit procedures set by Congress in the statute. See *Palumbo v. Waste Technologies Industries*, 989 F.2d156 (4th Cir. 1993); *Greenpeace Inc. v. Waste Technologies Industries*, 9 F.3d 1174 (6th Cir. 1993). Therefore, the complainants should not be entitled to raise issues for the Ombudsman's investigation that amount to an improper collateral attack on the issuance, revocation or renewal of the WTI permit."
>
> "Von Roll WTI is the target of a class-action lawsuit pending in the Court of Common Please, Columbiana County, Ohio, brought by some of the complainants herein (Swearingen and Spencer), which challenges the siting, legality, operation, and permitting of the East Liverpool facility, and seeks money damages and attorneys' fees. Counsel to complainants herein also represent them in this pending class-action lawsuit. The matter is scheduled for trial in September 2000.
> "In framing the issues to be considered, the Ombudsman might wish to consider the appropriateness of utilizing public funds essentially to underwrite the investigation and development of complainants' and their counsels' private lawsuit for money damages and attorneys' fees. In that regard, the Ombudsman could contact the following persons for information. (List omitted.) From them the Ombudsman could learn the issues raised by the plaintiffs, the plaintiffs' private litigation for money damages with plaintiffs'/ complainants' demand for a publicly funded investigation by the Ombudsman's office."

Following this challenge to jurisdiction by WTI, I asked for briefs on this issue from the parties before ruling on the question of jurisdiction in this Ombudsman preliminary report. In the WTI brief, they argued:

> "In summary, it is not the Ombudsman's non-binding 'recommendations' that would constitute an improper collateral attack. It is the conduct of an investigation by an official of the U.S. EPA into permit-related issues that Congress intended be raised by complainants only within certain time limitations and only in the RCRA permitting and judicial processes. For the Ombudsman to investigate again the EPA permit actions made

years ago, and to conduct an investigation into those same issues that either were or should have been raised on a timely basis by the complainants in the permitting and judicial reviews, is clearly a collateral attack that is contrary to Congress's intent and to the proper administration of the RCRA statute."

First, the matter of the class action litigation discussed above. I dismiss the suggestion by WTI that the Ombudsman investigation is serving an improper purpose. The allegation that this investigation constitutes an improper use of public funds to "underwrite the investigation and development of complainants' and their counsels' private lawsuit for money damages and attorneys' fees" is without basis. WTI has offered no evidence to support this allegation. Moreover, this aspect of the challenge is moot for two reasons: (1) ABA standards of practice for Ombudsman specify that Ombudsman findings and recommendations may not be adopted by a court as such, but the court must consider such matters de novo, if at all, and (2) In any event, on June 28, 2000, the Columbiana County Court of Common Pleas granted WTI's motion for summary judgement, thus terminating the case subject only to appeal.

Second, the matter of Ombudsman Jurisdiction constituting an "improper collateral attack" on the RCRA permit of WTI. The brief of EPA Region V is helpful in addressing this issue:

> "We agree that the OSWER Ombudsman can investigate and make recommendations with respect to the federal portion of WTI's hazardous waste permit, but cannot issue decisions or order that the recommendations be adopted. In contrast, the two cases cited by WTI, namely Palumbo v. Waste Technologies Industries, 989 F.2d156 (4th Cir. 1993), and Greenpeace Inc. v. Waste Technologies Industries, 9 F.3d 1174 (6th Cir. 1993), each involved lawsuits seeking a judicial order enjoining operation of the incinerator. In both cases, the petitioners failed to file a timely challenge to WTI's federal permit in the US Court of Appeals and were instead seeking injunctive relief from federal district courts. These cases, therefore, are inapposite to the Ombudsman's current investigation of WTI. However, we can't answer whether this was an improper collateral attack, since we don't know what WTI means by that phrase."

The brief of Cohen, Milstein and Hausfeld is more helpful in understanding the collateral attack issue, while agreeing with the position of EPA Region V that the National Ombudsman has jurisdiction to hear this case and make recommendations. Their analysis of these issues provides as follows:

> "Von Roll's attack on the Ombudsman's jurisdiction is baseless. Von Roll misconceives both the rule precluding collateral attack on a RCRA permit and the nature of an Ombudsman review.
>
> First, as set forth in the cases cited by Von Roll, the rule against collateral attack on a RCRA permit only precludes *judicial review by a federal district court* of the decision to issue a permit by requiring such a challenge to be made by appeal to the EPA Administrator and then directly to a U.S. Court of Appeals within 90 days of the

Administrator's decision. See Greenpeace Inc. v. Waste Technologies Industries, 9 F.3d 1174, 1178-82 (6th Cir. 1993); Palumbo v. Waste Technologies Industries, 989 F.2d 156, 160-61 (4th Cir. 1993). Nothing in the rule prohibits the EPA itself from taking action to enjoin or prevent activity by a permitted entity that endangers human health or the environment. Nor does anything in the rule prohibit any person from requesting EPA to take such action. In fact, by its very nature the rule, where it applies, routes citizens to the EPA to exhaust their administrative remedies prior to seeking judicial review in the proper forum. Such a rule cannot support Von Roll's claim that the Ombudsman--an arm of EPA--has no jurisdiction.

Second, EPA unquestionably has the legal authority to terminate a RCRA permit at any time. See C.F.R.§ 270.43; Letter of T. Branigan (May 25, 2000) at 3. The citizens' request to the Ombudsman that he call upon EPA to exercise this authority is not a collateral attack on a RCRA permit but a direct attack under the precise procedure established for doing so. Again, in this proceeding the citizens are seeking recommendations for EPA action and are not seeking that a court order EPA to act. See also Appendix A attached hereto (summarizing termination procedures).

Third, Von Roll's pending permit renewal application makes this the ideal time for raising concerns regarding the propriety of allowing Von Roll to continue operating under a RCRA permit. Von Roll's RCRA permit expired on January 25, 1995. See Letter of T. Branigan (May 25, 2000) at 1-2; Letter of F. Lyons (Apr. 4, 2000) at 1. Von Roll submitted an application to renew that permit in July, 1994 that has not yet been acted upon and thus is scheduled to be acted upon by the State of Ohio under a schedule EPA terms "aggressive" and "accelerate[d]," i.e., in October, 2001, over six years after its submission. See Branigan Letter at 2 ("the Ohio EPA has recently agreed to move aggressively forward" to decide in 2001); Lyons Letter at 3 (state agreed to EPA request to "accelerate its renewal decision" and comment on the renewal application and on draft permits prepared by the State of Ohio and to take action to terminate the Ohio-issued permits if the State fails to address EPA's comments. See Lyons Letter at 4. Portions of the renewal application will call for EPA comments. See Lyons Letter at 4. Portions of the renewal application will call for EPA action under programs that have never been delegated to the State of Ohio. See Branigan Letter at 2. Furthermore, as Mr. Fields acknowledged at the meeting on February 18, 2000, EPA has the authority to "take back the permit" so as to take control of the renewal process. The permit renewal process provides an opportunity to take into consideration the citizens' position that the WTI incinerator poses an unacceptable threat to human health and the environment. And the Ombudsman Review provides an opportunity to help ensure that the renewal process is fair and impartial.

Fourth, EPA retains a variety of enforcement tools wholly apart from permitting decisions. In particular, EPA has authority under 42 U.S.C. § 6973 to issue orders and commence legal proceedings upon receipt of evidence that "the past or present handling, storage, treatment, transportation or disposal of hazardous waste may present an imminent or substantial endangerment to health or the environment." Additionally, EPA can issue administrative compliance orders, administrative penalties, civil suits for injunctions, civil suits for penalties, interim status corrective action, or criminal prosecution seeking fines or jail sentences when there are violations. See 42 U.S.C. §

6928. EPA is not a toothless tiger.

Finally, WTI misconceives the nature of the Office of Ombudsman. The Ombudsman is a neutral arbiter that hears complaints by any person who is aggrieved by agency action or inaction and that makes recommendations to the agency to resolve the complaint. The Ombudsman is not a court and cannot order the agency to take action. Rather, the Ombudsman's authority arises from his or her ability to provide sound and fair guidance to the agency in situations where aggrieved persons believe the agency has failed to act in a lawful or proper fashion.

The rulemaking establishing the EPA RCRA Ombudsman states:

> It is the function of the Office of Ombudsman to receive individual complaints, grievances, and problems submitted by any person *with respect to any program or requirement under the Resource Conservation and Recovery Act* (RCRA). The establishment of the Office of Ombudsman *shall not affect any procedures for grievances, appeals, or administrative matters in any other provision of law, or any Federal Regulation*. The objective of the RCRA Ombudsman program is to ensure that the general public is provided assistance with complaints or problems.

51 Fed. Reg. 42297 (daily ed. Nov. 24, 1986) (emphases added). Thus, the Ombudsman's jurisdiction over RCRA programs and requirements is unlimited and does not even 'affect' other procedures. See also American Bar Ass'n, Ombudsman Comm. App. A[3] at Point 1 ("The ombudsman is an independent government official who receives complaints against government agencies and officials from aggrieved persons, who investigates, and who, if the complaints are justified, makes recommendations to remedy the complaints"); Dean M. Gottehrer & Michael Hostina, Essential Characteristics of a Classical Ombudsman[4] at C9 ("The Ombudsman may not make binding orders."). Even if the Ombudsman were to issue findings that the original issuance of the RCRA permit was contrary to law or otherwise improper, that finding would serve an important truth-finding function that is within the proper role of the Ombudsman to provide justice to aggrieved persons and make recurrences less likely.

In short, Von Roll's attack on the Ombudsman's jurisdiction is at odds with clear law and, if accepted, would severely undercut the institution of the Ombudsman as well as the ability of EPA to exercise its statutory authority under RCRA[5].

EPA has the authority to terminate a RCRA permit at any time. 40 C.F.R. § 270.43. Grounds for termination are: (1) noncompliance by the permittee with any condition of the permit, (2) the permittee's failure in the application or during the permit issuance process to disclosure fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time, or (3) a determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination. 40 C.F.R. § 270.43(a). EPA must follow the procedures in Part 124 of Title 40 or follow State procedures in terminating any permit. 40 C.F.R § 270.43(b).

The procedures of Part 124 require a written request by any person to terminate a RCRA permit. 40 C.F.R. § 124.5(a). The Regional Administrator is denominated as "the Director" and is responsible for making the initial decision on the request. See 40 C.F.R. §§ 124.2 ("Director means the Regional Administrator."); 124.5(b) (the Director makes initial decision). If the Regional Administrator denies the request, the denial may be appealed to the Environmental Appeals Board ("EAB"). 40 C.F.R. § 124.5(b). If the EAB takes no action on the appeal within 60 days, the appeal shall be considered denied and the requestor may seek judicial review. Id.

If the Regional Administrator tentatively decides to terminate, he or she must issue a notice of intent to terminate, which is declared to be a "type of draft permit which follows the same procedures as any draft permit prepared under § 124.6." 40 C.F.R. § 124(d)(1). In addition, unless the termination is at the permittee's request, the Regional Administrator must prepare a complaint under 40 C.F.R. §§ 22.13, 22.44 subject to the procedures of Part 22 of Title 40. Id. At (d)(2). A notice of intent to terminate must be based on the administrative record as defined in section 124.9 40 C.F.R. § 124.5(e).

No public notice is required if the Regional Administrator declines to terminate. 40 C.F.R. § 124.10(a)(2). Public notice is required for any decision to terminate. 40 C.F.R. § 124.10(a)(ii). A 45 day public comment period is also required. 40 C.F.R. § 124.10(b). Any person may submit comments, which shall be considered by EPA, and any person may request a hearing in writing. 40 C.F.R. § 124.11. A hearing must be held if there is a significant degree of public interest in the proposed termination. 40 C.F.R. § 124.12(a). After the close of the public comment period, the Regional Administrator is required to issue a final decision whether to terminate. 40 C.F.R. § 124.15(a). If the Regional Administrator decides to terminate, any person who provided comments or participated in the hearing may petition the EAB within 30 days for review but review is discretionary. 40 C.F.R. § 124.19(a), (c). A motion for reconsideration of the Regional Administrator's final order can be filed with the EAB within ten days of service of the final order but such motion does not stay the final order unless the EAB so directs. 40 C.F.R. § 124.19(g). Judicial review of a final order is available in a U.S. Court of Appeals within 90 days of EAB review is complete or if EAB has declined review. Greenpeace, Inc. v. Waste Technologies Indus., 9 F.3d 1174, 1178-82 (6th Cir. 1993).

[1]The Greenpeace court's broad application of the rule to any citizen suit challenging "permitted activity" under the RCRA endangerment provision, 42 U.S.C. § 6972(a)(1)(B), has fallen into disfavor and is highly questionable. See Glazer v. American Ecology Envtl Servs. Corp., 894 F. Supp. 1029, 1039 (E.D. ex. 1995) (stating "[d]efendant's reading of Greenpeace, that a plaintiff may not maintain an action against any defendant holding a permit under section 6972(a)(1)(B), is unfounded" and holding that while decision to issue permit may not be challenged in district court, citizens may challenge in district court "the operation of the facility when, in violation of its permit, it operates in a manner that endangers human health and the environment"); see also Ashely Schannauer, RCRA Endangerment Actions: Is a Permit a Defense?, 21 Colum. J. Envtl L. 287, 323 (1996) (criticizing Greenpeace for failing to distinguish between issues not considered in permit process and issues considered in permit process). In any event, the Ombudsman is not a court and thus the rule is inapplicable.

[2]For further information on RCRA procedures relevant to the Von Roll matter, the Citizen-Petitioners respectfully refer the Ombudsman to the Greenpeace and Glazer decisions, the Schannauer law journal article, and the letters of Mr. Lyons and Mr. Branigan. As the Greenpeace court observed, "'the EPA's graphic on the RCRA permitting process looks something like the organization chart of the Prussian army, with no less than twenty-six notable loci of decision.'" Greenpeace, 9 F.3d at 1179 (quoting 4 William H. Rodgers, Jr., Environmental Law § 7.13, at 113 (1992)). Any response that would do justice to the Ombudsman's request for explication of RCRA procedures for issuance, revocation, and renewal of RCRA permits and for public hearing, public comment and appeal would constitute a significant tome that could never approach the quality of scholarly works already available. It is respectfully suggested that WTI's attack on the Ombudsman's jurisdiction does not warrant such a major detour and that the authorities and EPA letters cited herein provide a sufficient summary of the relevant RCRA provisions for the task at hand.

With respect to the Ombudsman's request for the regulatory history of the WTI facility, assembling a full regulatory history would constitute a major undertaking that is not warranted by Von Roll's baseless attack on the Ombudsman's jurisdiction. Much of that history already has been assembled in the GAO Report. See Hazardous Waste: Issues Pertaining to an Incinerator in East Liverpool, Ohio, GAO/RCED-94-101 at 12-18, 21-24, 50-56. The Ombudsman's central concern with respect to this history ("Specifically, what role remains for EPA in this process?") has been addressed in the body of this letter, supra."

In finding that National Ombudsman jursdiction over this case is proper, I dismiss the argument that the Ombudsman investigative process is a collateral attack on the WTI RCRA permit. The RCRA permitting process and the Ombudsman investigative process are different in nature and cannot be so equated. The Ombudsman investigative process while being different in nature, however, is complementary to the ministerial and discretionary processes of the EPA. Over the course of many years, the whole line of Ombudsman cases establish the precedent that case recommendations serve to bring about "programmatic improvements" in EPA and to execute the statutory charge of protecting human health and the environment.

During the National Ombudsman hearing convened last month in East Liverpool, Ohio, counsel to WTI made the following point: "So I want to be very clear that what we're suggesting is that the Ombudsman look into unanswered questions, questions about compliance or subsequent issues, but not go back and try to answer yet again questions that were already decided in those various permit appeals and decisions." See, Statement of David Case, hearing Record at pg. 135.

Without reaching fundamental issues of permit revocation, modification or renewal, at this juncture, therefore, the focus of this preliminary Ombudsman report will be on the quality and weight of environmental monitoring data critical to the trial burn and compliance monitoring, uncertainties surrounding the risk assessment and operational deficiencies which may threaten human health and the environment if not corrected.

Notwithstanding the argument of WTI, issues relating to siting and location of the facility, ownership and health effects to the surrounding community will be addressed in the

Draft Final Report. Before that time, the working allegations will be amended. Until at least 90 days after the last Ombudsman public hearing on the WTI case, Ombudsman jurisdiction will be of a continuing nature.

EPA Region V History and Chronology

In order to continue to establish the framework of this case to move the Ombudsman Investigative process forward; the following represents EPA Region V's summary of actions to date that in their view are relevant to the disposition of this case. In addition to the regulatory chronology, the summary addresses the WTI RCRA permit, and the status of the decision to renew or to not renew that permit, along with a note on the review of the State of Ohio RCRA program by EPA. The National Ombudsman makes no representation as to the completeness of the history or the chronology.

WTI's RCRA Permit

U.S. EPA issued the RCRA permit for this facility on June 24, 1983. Due to petitions for review of that permit decision, the permit did not become effective until January 25, 1985. Because the permit itself specified a 10-year effective period, the expiration date became January 25, 1995.

Waste Technologies Industries submitted a timely new application to Ohio EPA and U.S. EPA on July 20, 1994. Documents in our files show that in January 1995, Mr. Bob Kin, Ms. Harriet Croke, and Mr. Gary Victorine of U.S. EPA Region 5 jointly performed a completeness check, which concluded that the application was complete.

In a state that is authorized to operate a state RCRA program, U.S. EPA's regulations at 40 CFR § 270.519(d) and the Administrative Procedures Act at 5 U.S.C. § 558 (c) provide that the conditions of an expired federally-issued RCRA permit continue in force until the effective date of the issuance or denial of a state-issued RCRA permit, provided the permittee has submitted a timely and complete application for a new permit. Because WTI submitted an application for renewal that Region 5 considered to be timely and complete, the RCRA permit issued by U.S. EPA in 1983 remains in force at this time, as required by 40 CFR § 270.51(d).

Status of the Decision to Renew or not to Renew WTI's RCRA Permit

After WTI's federally-issued RCRA permit became effective in 1985, U.S. EPA authorized the State of Ohio to operate to state hazardous waste program in lieu of the federal RCRA regulatory program. Upon authorization, the State of Ohio assumed primary responsibility for implementing the RCRA hazardous waste program, effective June 30, 1989. U.S. EPA is currently reviewing several federal environmental programs that are operated by the State of Ohio. This is in response to a petition requesting that the authorizing or delegation to operate those programs be withdrawn. Under regulations, EPA may conduct investigations of the allegations in the petitions to determine whether cause exists to commence withdrawal proceedings. At this time, EPA is conducting the review and has not made any decision. Authorization of the Ohio RCRA program remains effective and valid unless and until U.S. EPA issues a final order to withdraw it.

This included the responsibility for new RCRA permit decisions and for RCRA permit renewal decisions based on the authorized provisions. Except as described below, U.S. EPA generally may not issue new RCRA permits in the State of Ohio.

The RCRA regulations have been revised a number of times since the State of Ohio received its initial authorization, including the addition of numerous new RCRA program elements. The State of Ohio has been authorized to administer some, but not all, of the new RCRA program elements. When the State of Ohio has been authorized to administer some, but not all, of the new RCRA program elements. When the State of Ohio issues or renews a RCRA permit containing only those provisions of the federal RCRA regulatory program enacted pursuant to the Hazardous and Solid Waste Amendments of 1984 (HSWA) for which the State of Ohio has not received authorization. In these circumstances, the RCRA permit is a joint State/ U.S. EPA permit that consists of both the state-issued portion of the permit and the federally-issued portion.

The State of Ohio, rather than U.S. EPA, has the primary responsibility to make decisions regarding the renewal of WTI's RCRA permit. We have preliminarily determined that if the State of Ohio were to renew the permit at this time, the state-issued portion of the RCRA permit would implement all applicable RCRA regulatory provisions except for those contained in 40 CFR Part 264 Subpart BB and Subpart CC (these deal with emissions of volatile organic compounds from pipes, valves, flanges, and from hazardous waste tanks and containers) and certain requirements of 40 CFR Part 268 (implementing RCRA's land disposal restrictions). These are HSWA provisions for which the State of Ohio has not yet been authorized under RCRA. Simultaneously with the State's issuance of the majority of the RCRA permit, U.S. EPA would issue a portion of the RCRA permit to address these regulatory provisions. If the State decided to deny the permit instead of renewing it, U.S. EPA would not need to act regarding the Subpart BB, CC and Part 268 standards.

The State had previously advised us that its RCRA renewal decision is tied to the renewal decision for WTI's hazardous waste installation and operation permit issued under State law. That permit has not yet expired. Even though that State permit does not expire until mid-2002, the Ohio EPA has recently agreed to move aggressively forward with an earlier renewal decision. The Ohio EPA anticipates a renewal decision in 2001.

Chronology of WTI Permit Process to Date

The following history developed by EPA Region V, excerpted from a more complete chronology of the regulatory history of WTI, demonstrates that the permit was issued in 1983, was subsequently appealed, and eventually became effective in 1985. The history also lists information about additional public comment periods, public hearings and meetings that were held, and provides information about appeals and legal challenges to the RCRA permit. The history is not exhaustive. The National Ombudsman makes no representations as to completeness.

09/04/81	WTI applies for permit
11/13/82	U.S. EPA opens public comment period regarding draft permit, which remains open until 01/03/83.
12/15/82	U.S. EPA holds public hearing in East Liverpool regarding draft permit.
06/24/83	U.S. EPA issues RCRA permit and Response To Comments.

08/09/83 State of West Virginia petitions for review of permit decision. Many other petitions for review from citizens also submitted.

03/19/84 Administrator remands permit pending final decision on petitions

04/19/84 U.S. EPA issues public notice of second public comment period for the State of West Virginia.

12/17/84 Administrator denies other petitions for review.

01/25/85 U.S. EPA makes permit effective on this date.

09/90 WTI breaks ground on facility, including test piles, grading, and relocation of underground utilities.

08/23/91 U.S. EPA opens public comment period regarding WTI's proposed addition of a spray dryer.

09/24/91 U.S. EPA and OEPA jointly hold public information meeting in East Liverpool.

09/25/91 U.S. EPA and OEPA jointly hold public hearing in East Liverpool regarding permit modification to add spray dryer. Hearing has to be canceled due to disruption by protestors.

02/03 U.S. EPA issues permit modification to add spray dryer and to add the Columbiana County Port Authority as an additional owner.

03/05/92 The State of West Virginia, the City of Pittsburgh, the Columbiana County Port Authority, and several others appeal Region 5's issuance of the 2/92 permit modification.

04/21/92 The Attorney General of West Virginia files suit against WTI, U.S. EPA, and the Ohio EPA in Federal District Court for the Northern District of West Virginia (Wheeling), because of alleged violations of RCRA requirements and alleged endangerment of human health. The City of Pittsburgh and several citizens groups intervene.

07/09/92 U.S. EPA issues Phase 1 of two-phased Risk Assessment

07/09/92 U.S. EPA grants temporary authorization to operate spray dryer for 180 days.

07/24/92 U.S. EPA Environmental Appeals Board (EAB) rules regarding spray dryer and addition of the Port Authority. The spray dryer modification is upheld. Port Authority issue is not upheld and is remanded to Region 5 for resolution.

07/30/92 WTI completes construction

09/01/92 In the West Virginia case, WTI stipulates to give 7-day notice to all parties before receiving any hazardous waste on site. Temporary Restraining Order is lifted.

09/22/92 U.S. EPA meets with concerned citizens at Region 5 offices.

10/02/92 U.S. EPA opens 30-day public comment period on issues related to ownership and operational control.

10/08/92 Judge in the West Virginia case dismisses U.S. EPA and Ohio EPA.

11/12/92 Judge in the West Virginia case allows WTI to begin shakedown period under its permit.

11/13/92 WTI begins receiving hazardous waste and begins the shakedown period.

01/12/93 Greenpeace and others file suit in Federal District Court for the Northern District of Ohio (Cleveland) against U.S. EPA, Ohio EPA, and WTI to prevent the trial burn from proceeding; a Temporary Restraining Order is requested.

01/15/93 Federal District Court (N.D. Ohio) issues Temporary Restraining Order against proceeding with the trial burn.

03/05/93 District Court lifts Temporary Restraining Order, allows trial burn to proceed, but

places preliminary injunction against any limited commercial operation after the trial burn until the U.S. EPA reviews and approves the results.

03/22/93 United States Supreme Court Justice John Paul Stevens denies an emergency request to overturn the Sixth Circuit Court stay.

05/06/93 U.S. EPA meets with concerned citizens and representatives of Greenpeace in Region 5 offices.

05/06/93 Greenpeace/Swearingen/Spencer file Environmental Appeals Board petition to review the matter of the U.S. EPA's 04/06/93 authorization letter, and halt limited commercial operation. (EAB 93-7)

05/11/93 City of Pittsburgh/State of West Virginia file EAB petition to review the matter of the U.S. EPA's allowing post-trial burn operation. (EAB 93-9)

06/18/93 Ohio Attorney General's Office issues the results of its investigation into the background of WTI, including its opinion that the partnership had dissolved.

06/21/93 EAB denies review of petitions by (1) Greenpeace/Swearingen/Spencer, and (2) City of Pittsburgh/State of West Virginia for lack of jurisdiction. (EAB 93-7 and EAB 93-9)

07/19/93 Greenpeace/Swearingen/Spencer file in the D.C. Circuit Court of Appeals regarding the U.S. EPA's 04/06/93 decision to allow post trial burn operation.

07/23/93 City of Pittsburgh files in Third Circuit Court of Appeals (Philadelphia) regarding the U.S. EPA's decision to allow post trial burn operation (one petition challenging 04/06/93 decision and a second petition challenging EAB's 06/12/93 denial on the basis of lack of jurisdiction).

08/24/93 U.S. EPA approves Class 1 permit modification adding Von Roll (Ohio), Inc., as an additional operator; announces a tentative decision and public comment period regarding adding VRA as owner; and files an enforcement action for failure to notify of operator change and certain minor storage violations.

08/30/93 Start of 30-day public comment period regarding adding VRA to permit.

09/22/93 City of Pittsburgh appeals to EAB permit modification to add Von Roll (Ohio), Inc., as addition operator. (EAB 93-11)

10/06/93 Court grants motion to transfer Third Circuit appeals to the D.C. Circuit.

10/28/93 Court grants motion to consolidate Pittsburgh's transferred Third Circuit appeals (Nos. 93-1682 and 1683) with Greenpeace's D.C. Circuit appeal (No. 93-1458).

11/19/93 Sixth Circuit Court of Appeals overturns the 03/05/93 Cleveland District Court preliminary injunction.

11/29/93 WTI appeals to the EAB the U.S. EPA's Class 2 permit modification of 10/28/93. (EAB 93-16)

04/29/94 U.S. EPA announces 60-day public comment period, starting on May 2, 1994, regarding the 6 Plans which are attachments to the RCRA permit.

07/12/94 U.S. EPA opens 2-week comment period regarding Permittee's request to replace slag quench tank. Comment period runs through 07/28/94.

09/15/94 U.S. EPA Region 5 sends nine officials to East Liverpool to present information on the Contingency Plan, Closure Plan, Waste Analysis Plan, Inspection Plan, Training Plan, and Trial Burn Plan. This meeting was in response to a request from three citizens' groups in the East Liverpool area, and was meant to assist the community in participating in the public comment period on these plans. Although the 60-day period ended in early July, comments were taken for an

	additional two weeks after this public meeting. None of the representatives of the citizens' groups attended the meeting.
10/12/94	U.S. EPA announces a two-week public comment period regarding WTI's proposal to be allowed to feed aqueous waste to the kiln and to increase total waste feed rate to the quantity demonstrated during the February 1994 trial burn.
01/13/95	D.C. Circuit Court of Appeals dismisses the consolidated petitions for review by Greenpeace and the City of Pittsburgh.
01/23/95	EAB denies the City of Pittsburgh's petition for review (RCRA Appeal No. 93-11) of the Region 5 permit modification to add VonRoll (Ohio), Inc., to the RCRA permit. Majority opinion is that the Region employed, with slight variations, a U.S. EPA-initiated modification under 270.41(b)(2), and that the Region's action was a permissible exercise of its authority.
01/27/95	EAB denies RCRA Appeal No. 93-16. This was WTI's petition for review of certain additional, unrequited, requirements inserted into the facility RCRA permit on October 28, 1993, concurrent with the approval of the addition of the enhanced carbon injection system.
01/11/96	Meeting of scientific peer review panel with the U.S. EPA and the public in Washington, D.C., regarding the draft of the comprehensive risk assessment.
04/24/96	Dr. Robert Huggett, Assistant Administrator of Research and Development meets with the East Liverpool community, as well as touring the WTI plant and meeting with the Mayor.
7/25/96	U.S. EPA issues written Response to Comments document regarding the August 24 public meeting held by Dr. Huggett.
07/31/96	Timothy Fields, U.S. EPA's Deputy Assistant Administrator for the Office of Solid Waste and Emergency Response, and David Ullrich, Deputy Regional Administrator for U.S. EPA Region 5, hold two public meetings in East Liverpool, tour the WTI plant, and meeting with community leaders.
04/16/97	U.S. EPA mails Response to Comments document (dated 04/8/97) responding to questions and comments raised at the July 31, 1996, public meeting.
05/08/97	U.S. EPA presents results of the detailed risk assessment in East Liverpool.
08/14/97	U.S. EPA holds availability session regarding risk assessment.
03/02/98	U.S. EPA approves permit modification to reflect change of ownership to Von Roll America, Inc.
06/19/98	U.S. EPA issues Response to Comments on issues associated with the ownership of the incineration facility by Von Roll America, Inc.
07/15/98	U.S. EPA issues Response to Comments received at August 14, 1997, public meeting regarding the risk assessment.
12/14/98	U.S. EPA and OEPA hold joint hearing regarding request by WTI to handle lab packs.

Findings of Fact

- According to a topographic quadrangle map dated 1994, the town of East Liverpool, Ohio is situated along the west-northwest flank of the Ohio River. The East Liverpool site consists of two stream terraces separated by moderate to steeply sloping embankments. The general relief from the map is from approximately 700 feet 1,200 feet

above sea level. Elevation onsite range from about 710 to 670 feet. Normal river level is 665 feet above see level.

- The WTI facility is located on 21.5 acres of land adjacent to the Columbiana Port Authority Facility property. The area immediately surrounding these properties is zoned medium-high-density residential use. Much of the local residential property, which includes an elementary school, is located on a terrace approximately 1,000 feet north of the site and at a ground elevation approximately 50 feet higher than that of the site. See, Risk Assessment, Vol. II, pg. II-1. The closest residents are approximately 300 feet from the incinerator. The East Elementary School is approximately 1,100 feet from the incinerator.

- The general area surrounding East Liverpool is largely rural, including beef, dairy, and mixed agricultural farms. A number of small industrial facilities including an asphalt roofing plant and a china manufacturer, are located within two miles of the WTI facility. Industrial operations located within 10 miles of the WTI facility include specialty steel operations, petroleum storage facilities, nuclear and coal-fired power plants, and a large refinery. See, Risk Assessment, Vol. II, pg. II-1.

- There are 4 state parks, 1 state forest, and 3 major wildlife management areas located within approximately 12.5 miles of the WTI facility. In addition to the Ohio River, there are approximately 90 non-intermittent rivers and streams, and approximately 50 wetland areas greater than 10 acres within 12.5 miles of the facility. See Risk Assessment, Vol. II, pg. II-1.

- According to the 1990 census, the population of East Liverpool is approximately 14,000, and the population of neighboring Chester, West Virginia (approximately one mile southeast of the site across the Ohio river) is approximately 3,000. The total population based upon the 1990 census within one, three, five, and ten miles of the site is estimated to be approximately 3,800; 23,400; 36,600; and 72,300 respectively. See, Risk Assessment, Vol. II, pg. II-2.

- The WTI Plant site is located adjacent to the Ohio River in East Liverpool. The site was used periodically for foundry operations (1920s-1930s) and for disposal of construction debris and rubble fill. From 1955 to 1984, the site was used as a bulk storage terminal for distributing a wide range of petroleum products. The bulk storage terminal consisted of 10 large capacity, above ground storage tanks and a metal transfer pipeline 10 inches in diameter. The transfer pipeline connected the storage tanks to a barge terminal in the Ohio River, and also to a truck load-out terminal north of the tank area. See, Remediation Plan for the WTI Site, Engineering-Science, March 1990, pg. 1-1.

- In 1983, 19,000 gallons of xylene were reportedly spilled at the site from a crack in xylene storage tank. In 1984, the FBI investigated a 200,000 gallon chemical loss at the site, which had been reported by the Charter Oil Company as theft. During the investigation, pipelines leading from the storage tanks to the truck load-out area were

found to be badly corroded. The storage tanks and transfer pipeline were dismantled and the old foundry buildings on the eastern edge of the site. See, Remediation Plan for the WTI Site, Engineering-Science, March 1990, pg. 1-1.

- U.S. EPA issued the RCRA permit for this facility to build and operate a hazardous waste incinerator (the WTI facility) on June 24, 1983. Due to petitions for review of that permit decision, the permit did not become effective until January 25, 1985. Because the permit itself specified a 10-year effective period, the expiration date became January 25, 1995. See, May 25, 2000 Response from EPA Region 5 to National Ombudsman.

- The WTI incinerator consists of a rotary kiln, waste feed mechanism, a secondary combustion chamber, a heat recovery boiler, air pollution control devices, a flue stack, solid residue removal equipment, and computerized process control and instrumentation systems. The rotary kiln is a refractory-lined cylindrical shell 15 feet in diameter and 43 feet in length. Hazardous wastes enter the rotary kiln and are oxidized at temperatures of approximately 1,800°F to 2,200°F. Gasses produced during the oxidation consist primarily of carbon dioxide (CO_2), nitrogen oxides (NO_x), and water, along with smaller quantities of organic compounds (including products of incomplete combustion), metals, and acid gases (such as hydrogen chloride and sulfur oxides). Non-combustible wastes generally melt at the high temperatures in the kiln and form a residual viscous material known as slag. The gases from the kiln pass to the secondary combustion chamber to provide for greater destruction of residual organic compounds present in the gas stream. See, Risk Assessment, Vol. I, pg. II-3.

- The secondary combustion chamber is 61 feet high, 21 feet long, and 22 feet wide, and is intended to enhance the destruction of organic compounds. Combustion gasses exit the secondary combustion chamber at a temperature between approximately 1,350°F and 1,500°F, and pass through a heat recovery boiler to generate steam for use at the WTI facility. See, Risk Assessment, Vol. I, pg. II-3.

- After cooling in the heat recovery boiler, the combustion gases pass to the air pollution control system. The air pollution control system consists of a spray dryer, an enhanced carbon injection system (ECIS), an electrostatic precipitator, a flue gas quench, and a four-stage wet scrubber system. The purpose of the air pollution control system is to reduce the concentrations of organics, metals, acid gases, and particulate matter in the combustion gas stream. The resulting flue gas is discharged into the atmosphere from a 150-foot stack. See Risk Assessment, Vol. I, pg. 1-1.

- In addition to the kiln, other major system components and ancillary facilities include but are not limited to: air pollution control devices, waste transfer, handling and storage areas, an on-site laboratory for waste testing; and associated administrative buildings. The facility began limited commercial operations in April 1993, after completion of an initial incinerator trial burn. See, Risk Assessment, Vol. I, pg. 1-1.

- In 1992, U.S. EPA Region 5 performed a preliminary assessment of the potential human

health risks posed by inhalation exposure (i.e., direct exposure) to emissions from the incinerator stack at the WTI facility. In 1993 and 1994, U.S. EPA's Office of Research and Development (ORD) performed two screening-level analysis of the potential human health risks posed by exposures to specific chemicals (polychlorinated dioxins and furans) that may deposit from the air onto soil and vegetation, and accumulate in the food chain (i.e., indirect exposures).

- The results of the risk assessments performed during 1993 and 1994 by Region 5 indicated that the potential risks through indirect exposures were believed to be higher than those through direct inhalation. However, limited site-specific data were available in those preliminary assessments, which therefore relied on generic, non-site specific assumptions regarding both facility emissions and the potential for human exposure.

- In May 1993, U.S. EPA initiated a larger-scope site-specific risk assessment, which was concluded by EPA in 1997 for the WTI facility to better define risks from the facility. A project plan for the WTI Risk Assessment was developed by U.S. EPA, and then subjected to external peer review by independent experts in the fields of combustion technology, atmospheric dispersion modeling, exposure assessment, toxicology and risk assessment.

- U.S. EPA's regulations at 40 CFR § 270.51(d) and the Administrative Procedures Act at 5 U.S.C § 558(c) provide that the conditions of an expired federally-issued RCRA permit continue in force until the effective date of the issuance or denial of a state-issued RCRA permit, provided the permittee has submitted a timely and complete application for a new permit. Because WTI submitted an application for renewal that Region 5 considered to be timely and complete, the RCRA permit issued by U.S. EPA in 1983 remains in force at this time, as required by 40 CFR § 270.15(d) See, May 25, 2000 Response from EPA Region 5 ORC to National Ombudsman.

- After WTI's federally issued RCRA permit became effective in 1985, U.S. EPA authorized the State of Ohio to operate a state hazardous waste program in lieu of the federal RCRA regulatory program. Upon authorization , the State of Ohio assumed primary responsibility for implementing the RCRA hazardous waste program, effective June 30, 1989. This included the responsibility for new RCRA permit decisions and for RCRA permit renewal decisions based on the authorized provisions. See, May 25, 2000 Response from EPA Region 5 ORC to National Ombudsman.

- The RCRA regulations have been revised a number of times since the State of Ohio received its initial authorization, including the addition of numerous new RCRA program elements. The State of Ohio has been authorized to administer some, but not all, of the new RCRA program elements. When the State of Ohio issues or renews a RCRA permit for a facility, U.S. EPA issues, as necessary, a supplemental portion of the RCRA permit containing only those provisions of the federal RCRA regulatory program enacted pursuant to the Hazardous and Solid Waste Amendments of 1984 (HSWA) for which the State of Ohio has not received authorization. In these circumstances, the RCRA permit is a joint State/U.S. EPA permit that consists of both the state-issued portion of the permit

and the federal-issued portion. See, May 25, 2000 Response from EPA Region 5 ORC to National Ombudsman.

- Since the start of commercial operation in November 1992, through the end of 1999, the WTI facility has processed approximately 310,000 tons of waste, and currently is processing approximately 60,000 tons of waste per year.

- On February 16, 2000, Congressman Kucinich (Ohio) sent a letter to Timothy Fields, Assistant Administrator of the Office of Solid Waste and Emergency Response. This letter cited a wide range of ongoing problems/violations at the facility. Congressman Kucinich stated in the letter that, "I am convinced that a permit renewal for WTI is not justified." A number of the Congressman's issues are summarized below:
    - Beginning in late 1994, WTI had been making payments on the side to every employee of the North Ohio Valley Air Authority (NOVAA). Serving as the eastern Ohio air monitoring system arm of the state EPA, NOVAA was responsible for monitoring the air emissions from the WTI facility.
    - Sometime between 1994 and 1997, while it was operate by NOVAA, the state-of-the-art ambient air monitoring system outside the WTI incinerator had been gutted. The computers that made sure the air quality readings were accurate had disappeared.
    - The Continuous Emission Monitor (CEM) in WTI's smoke stack, intended to provide regulators with continuous and immediate access to emission data, had been programmed in a way that prevented them from providing regulators with correct data.
    - WTI's federal RCRA permit expired in 1995; notwithstanding, it continues to burn toxic waste and threaten the health of children, some of whom live 320 feet from the facility and attend school nearby. Having the WTI facility continue to burn 5 years after the expiration of its permit completely undermines the credibility of EPA's hazardous waste program.

- On June 2, 2000, EPA Region 5 notified WTI that "This letter is in regard to the number and serous nature of hazardous waste violations identified at your facility. Because of these violations, your facility has been classified as a Significant Non Complier (SNC). According to our Hazardous Waste Enforcement Response Policy, all SNCs must be addressed with a formal enforcement action that includes payment of an appropriate penalty." See, June 2, 2000 Letter from Paul Little, Region V, to Fred Sigg, WTI.

- During inspections at the WTI faculty dating back to 1996, "During each of these inspections, EPA's Division of Hazardous Waste Management, Northeast District Office (DHWM-NEDO) has discovered numerous violations of Von Roll's hazardous waste facility installation and operation permit and Ohio's hazardous waste laws. These violations include improper hazardous waste container management, receipt and treatment of hazardous waste not authorized under Von Roll's permit, storage of incompatible wastes without proper safeguards, and inadequate response to leaking hazardous waste tank systems. Many of these violations are repeat violations.

Furthermore, Von Roll has experienced fires at the facility's storage tanks which appear to be the result of Von Roll's storage of reactive hazardous wastes in these tanks in violation of the terms and conditions of the permit."

- In a letter dated March 22, 2000, Ohio EPA sates that "Currently, we are discussing with your staff the need for WTI to conduct a trial burn/risk assessment for the renewal as a result of changes in waste feed at the facility. If a trial burn is determined necessary, it could be conditioned in the renewal permit or the renewal would be delayed until the completion of the risk assessment (October 2002)."

- On September 23, 2000, a Hearing was held in East Liverpool, Ohio by the EPA National Ombudsman, Robert Martin. Congressman James Traficant also hosted this meeting to listen to representatives from the community, EPA Region 5, WTI, and technical experts/ peer reviewers. Although requested, Ohio EPA did not attend the hearing.

Issues

As previously noted in the discussion on jurisdiction, the principal issues addressed here will be: (1) the quality and weight of environmental data critical to the efficacy of the trial burn and subsequent regulatory compliance; and (2) resulting uncertainties surrounding the risk assessment for the WTI facility.

1. Monitoring Issues

There have been and continue to be several kinds of air monitoring at the WTI facility, including stack monitoring, continuous emissions monitoring, and ambient air monitoring. See, EPA Region V Response to Interrogatories, dated July 14, 2000; for a complete discussion of the nature of this air monitoring. This discussion focuses on stack testing and ambient air monitoring at the WTI facility during the trial burn and in the years following while raising significant concerns regarding the weight to be accorded the resulting data, given the role of the now defunct North Ohio Valley Air Authority (hereinafter, NOVAA) and other personnel.

It would be useful to initially discuss the WTI trial burn and how that was conducted and then proceed to a discussion of NOVAA and other personnel.

As noted in the chronology, the WTI incinerator began limited commercial operation in 1992 pursuant to its RCRA permit. In order to receive approval for full-scale operation, the RCRA permit required WTI to conduct an eight day trial burn to give EPA Region V data with which to impose final permit conditions for the WTI facility.

The trial burn was conducted pursuant to a trial burn plan approved by Region V on January 8, 1993. The January 8 approval letter provided in part:

> Following the trial burn, WTI must submit for U.S. EPA review and approval a certification of compliance with permit emission limits for carbon monoxide (Condition

> C.13 of the permit) and particulate matter (Condition C.4 of the permit). Such certification must include sufficient preliminary test data to document compliance. Until the U.S. EPA approves such certification, WTI is not authorized to burn hazardous waste pursuant to Condition C.13 of the permit.

Letter from Valdus Adamkus, Regional Administrator, Region V to WTI, dated January 8, 1993, at 2.

WTI conducted the trial burn testing during the period between March 10 and March 18, 1993. On March 24, WTI submitted the certification required by the January 8 approval letter. Region V (and Ohio EPA) requested that one of the test burns be repeated, and it was on March 30. Data from this run were submitted to Region V on April 2.

On April 6, 1993, Region V issued a letter indicating that it had reviewed the emission certifications and found them in compliance with the January 8 approval letter and applicable permit conditions. Accordingly, the letter stated that "WTI is hereby approved to begin the post-trial burn period of operation, subject to the limitations of Conditions C.4, C:13, C.15, and all other applicable conditions of the RCRA permit." As previously noted, the Greenpeace *et al*. Petition for review relates to this approval.

On April 12, 1993, Region V sent another letter to WTI. As stated in that letter, the Region was unaware, at the time of its April 6 letter, of a problem concerning the destruction and removal efficiency ("DRE") of carbon tetrachloride, one of the three principal organic hazardous constituents ("POHC"), during condition 2 of the trial burn, involving burning of aqueous waste. Data included in an April 2 letter from WTI indicated that during condition 2, the required 99.99% DRE for carbon tetrachloride was not achieved. (The DRE was achieved or surpassed for carbon tetrachloride under other trial burn conditions and for the other POHCs under all conditions.)

In light of this information, Region V determined that the following action must be taken "pursuant to Condition C.13(d) of the effective RCRA permit":

> Since WTI has not demonstrated that it can achieve the DRE performance standard of Condition C.4 for each POHC tested in the aqueous waste, WTI shall cease feeding aqueous waste to the incinerator.
>
> Since WTI has not demonstrated that it can achieve the DRE standard of Condition C.4 for each POHC tested at the maximum total feed rate of 32,708 lb/hr, WTI shall not feed the incinerator for a total rate *greater* than 20,375 lb/hr (*i.e*., the total feed rate demonstrated during trial burn condition 3).

Letter from Valdus Adamkus to WTI, dated April 12, 1993, at 1-2.

For context, the regulatory provisions governing the test burn and subsequent operation are found at 40 C.F.R. § 270.62. According to 40 C.F.R. § 270.62(b)(10), operating requirements in the final permit shall be based on the trial burn test results and established as a permit modification pursuant to § 270.42. In the interim, § 270.62(c) provides, in part:

> For the purposes of allowing operation of a new hazardous waste incinerator following

> completion of the trial burn and prior to final modification of the permit conditions to reflect the trial burn results, the Director may establish permit conditions, *including but not limited to allowable waste feeds and operating conditions sufficient to meet the requirements of §264.345 of this chapter,* in the permit to a new hazardous waste incinerator. These permit conditions will be effective for the minimum time required to complete sample analysis, data computation and submission of the trial burn results by the applicant, and modification of the facility permit by the Director.

(Emphasis added.)

During the WTI trial burn and afterwards, NOVAA had primary responsibility for all air monitoring. See, Letter from EPA Region V Regional Administrator Valdus Adamkus to East Liverpool Health Commissioner Gary Ryan, dated February 28, 1994; which notes that "Region V EPA's role in environmental monitoring is to provide assistance to the lead agency for air monitoring, which is the NOVAA."

As WTI observed in their July 7, 2000 response to Ombudsman interrogatories on the issue of NOVAA involvement related to the WTI incinerator and its emissions:

> "From the beginning of operations at VRA through September 30, 1997, NOVAA (the North Ohio Valley Air Authority) was the agency responsible for compliance assurance, permitting issues, and enforcement relating to Ohio EPA's air program. OEPA and NOVAA had a signed contract delegating the above authority from OEPA to NOVAA for a six county region, which included Columbiana County.
>
> In this role, NOVAA had oversight over operations at VRA relating to stack emissions monitoring, monitoring equipment certification and calibration, stack emissions testing, and ambient air monitoring on- and off-site. NOVAA employees witnessed trial burn testing as well as quarterly stack emissions testing, gave input into quarterly stack testing protocols, reviewed the stack testing reports, and audited ambient air monitoring stations."

The foregoing account by WTI is corroborated by testimony in the Ombudsman public hearing held last month in East Liverpool, Ohio. In response to a National Ombudsman question in connection with responsibility for collection and compilation of air monitoring data, Mr. Bailey of WTI responded: "Yeah. It was done largely by us, by contractors and some by NOVAA." See, Hearing Record at pg. 177.

In response to a National Ombudsman question with respect to retrieval of data from monitors and the role of NOVAA, Mr. Victorine of Region V stated: "It's possible. I don't know what NOVAA staff might have been involved." See, Hearing Record at pg. 269. The issue of which NOVAA staff were involved is fully elaborated on in the Deposition of Vincent R. Zumpano, taken February 23, 1999. See, State of Ohio v. Vincent R. Zumpano. Case No. 97-CR-114. Judge Charles F. Knapp (Sitting by Assignment) Appendix A.

Within the context of his sworn testimony regarding a meeting between NOVAA and Mr. Zelik and Mr. Parkes of WTI, Mr. Zumpano stated "—let's get things straight. I don't know anything technically about the operation of WTI . . . . The only thing I did for NOVAA was took

air samples . . . . I must have worked for NOVAA for five years, and ever since I worked at NOVAA, all I heard was problems up at WTI. And Patsy [DeLuca] would make them run trial burns, whatever that meant, over and over again . . . . And they were always in the news making mistakes." See, Deposition at pg. 17-18 Appendix B.

Mr. Zumpano went on to offer an explanation of how air monitoring was not done in the context of the WTI trial burn:

"Q. Was there ever a time when you noticed that monitoring equipment or things of this nature was not functioning properly or not turned on properly at WTI? A. Yes, there was one time when me and Mike Walosky Jr. went up to change the filters the machines were turned off. So, at that time, when we came back into the office at NOVAA, when Dan Zorbini was, you know, the technician – not the technician, the engineer in charge, we told him about it. And he said, 'Don't worry about it.' Q. Now who said that? A. Dan Zorbini. So that meant there was no air sampling for that day, and they were doing a trial burn. So, I proceeded along with Mike Walosky, and we told Pat DeLuca. And Pat DeLuca went back and raised hell with Danny about doing this. But why he did it, I don't know. All I know Danny Zorbini lived up at WTI. Q. And what do you mean by that? A. He was up there every day. Q. Dan Zorbini would have been an employee of NOVAA? A. Right. Him and Bucky really. Q. But would that have been part of their assignment to be up at WTI? A. That, I don't know. I could never understand how one individual could be at one place five days a week. Q. Would Mr. DeLuca have any comment about that, that you know? Why they are up there that much? A. Well, he used to raise hell with Danny all the time about things he's done. I know several times when I was there the State – Ohio EPA would reject documents that Danny would send them because they were all wrong. Q. If there was a trial burn – I mean, to the best of your knowledge, I realize you are not an engineer, if there was a trial burn, then that type of equipment should have been on it; am I correct? A. Yeah, from the way I understood, it should have been on, but it wasn't. Q. And are you indicating that you don't know why it was off? A. No, they didn't give me no explanation." See, Deposition at pgs. 32-34. Appendix ___.

The kind of air monitoring Mr. Zumpano was most likely offering sworn testimony about was ambient air monitoring, which, according to EPA Region V, "is the kind of monitoring that NOVAA used to do." See, EPA Region V Responses to Ombudsman Interrogatories, dated July 14, 2000. As the Region went on to note in their response "[a]mbient monitoring involves sampling the air, off-site near a facility (or in some cases actually on-site) such as WTI. Rather than focusing on what is coming out of the stack, ambient air monitoring focuses on <u>what pollutants are arriving at ground level off-site</u>, where people might be exposed to it." See, Region V Response, at pg. 4. July 14, 2000.

Interestingly, EPA Region V does not believe that NOVAA performed "the continuous emissions monitoring or the stack test" during the WTI trial burn. See, Region V Responses at pg. 4. July 14, 2000. This seems inconsistent with the position expressed by WTI, which was that NOVAA:

> had oversight over operations at VRA relating to <u>stack</u> emissions monitoring, monitoring equipment certification and calibration, <u>stack-emissions testing</u> and ambient air monitoring on- and off-site. NOVAA employees witnessed trial burn testing as well as quarterly stack emissions testing, gave input into quarterly stack testing protocols, reviewed the stack testing reports, and audited ambient air monitoring stations.

See, WTI Response to Ombudsman Interrogatories, dated July 7, 2000.

Such an understanding also seems inapposite to NOVAA's status as "lead agency" for environmental monitoring, as noted by former Regional Administrator Adamkus in 1994.

It also cannot be reliably established that the stack testing during the WTI trial burn was not compromised. Mr. Zumpano, in his sworn testimony, merely did not elaborate on what other "monitoring equipment or things of this nature" were "not functioning properly or not turned on properly at WTI." See, Deposition, infra. See also, Appendix A.

As EPA Region V has found regarding stack testing:

> it involves collecting discreet samples of the combustion gases in the stack or in the ductwork leading to the stack over a period of several hours, then taking those samples to a laboratory for analysis. This is the most accurate way of determining emissions, and for many contaminants is the only way the emissions can be quantified. This kind of testing is generally done annually at WTI, and it is the kind of testing that is done during a RCRA trial burn."

See, EPA Region V Response to Ombudsman Interrogatories, at pg. 2-3, dated July, 14, 2000.

Stack testing of the WTI facility, therefore, is of critical importance for protection of human health and the environment and public safety. It is an indispensable aspect of the RCRA trial burn and the RCRA permit. And, as Region V observed, "it is the RCRA permit that is the U.S. EPA's main vehicle for ensuring protection of human health and the environment from such a facility."

As noted in the finding of fact relating to stack-testing, in particular, the Ohio Environmental Protection Agency Conditional Permit to Operate an Air Contaminant Source required WTI to do such testing for lead emissions specifically. The concerns originating in how the stack testing was done in the trial burn, are amplified by the manner in which quarterly testing for lead was done by WTI in the stack. Regarding this matter, Tammy Hilkens of the Ohio EPA communicated to Mr. Harold Strohymeyer of NOVAA on August 27, 1996 that:

> "Historically, the company has not exactly been forthright in using data to establish compliance under worst case scenarios, for example they were required to do quarterly testing for Pb [lead]. More than 3 quarters of testing went by before we realized that they were not feeding any Pb into the incinerator during the compliance testing and then they had the nerve to brag about their 'low' Pb emission rates once the tests were submitted. . . . I suspect that in most of the situations, the compounds in questions were below the detectable because waste being fed into the incinerator during the tests did not contain any of the compounds being sought."
>
> In the same letter, Hilkens states, "Eventually we are going to have to discuss 'worse case' compliance demonstration. It does no good to test for the listed compounds if WTI is not feeding any material into the kiln that contains the specified metal or POHC. We keep putting off this discussion, yet it has been more than 3 years since the last trial burn. I recommend that this paragraph be expanded to include the requirement to conduct a full trial burn by the end of 1997."

See, Appendix C.

The National Ombudsman Hearing record shows that an Ohio State government inspection of NOVAA "resulted in guilty pleas of two individuals and that was concluded." See, Statement of Terrance Branigan, EPA Region V Counsel, hearing Record at pg. 269. EPA Region V also noted in their answer to Ombudsman interrogatories that the nature of those guilty pleas, among other matters, was "felony public corruption." See, EPA Region V Response to Ombudsman Interrogatories at pg. 10-11. Dated July 14, 2000. A briefing from the EPA Criminal Investigation Division has been requested. See, memorandum from National Ombudsman to Director D' Amico, EPA CID, dated October 4, 2000. No reply to the briefing request on NOVAA involvement with WTI has been provided by EPA CID, pending the release of the preliminary Ombudsman Report.

It is clear that there are significant data problems surrounding the trial burn for the WTI facility and compliance testing thereafter, due to irregularities in the stack testing and the ambient air monitoring, at a minimum. EPA was most likely not aware of such problems during the trial burn itself or the subsequent compliance testing for lead required by the RCRA permit for WTI.

The gravamen of such new information, which goes to the very heart of how safe the WTI facility is and whether it is truly protective of human health and the environment, is that the entire trial burn for the WTI facility is inconclusive at best.

EPA Guidance on Trial Burn Failures specifies what constitutes an unsuccessful trial burn, in general, and an inconclusive trial burn, in particular. That Guidance provides:

> An inconclusive trial burn occurs when data problems have arisen such that neither conformance nor nonconformance with the performance standards can be shown. The results of an inconclusive trial burn may not be used to establish final permit operating conditions. Following an inconclusive trial burn, the permitting authority should take one or more of the following actions, as appropriate: (1) take steps to restrict operations; (2) begin processing a denial of the facility's permit application (for an interim status facility); (3) initiate proceedings to terminate the facility's permit (for a new facility); (4) authorize a trial burn retest.

See, Guidance on Trial Burn Failures, from Michael Shapiro, Director, Office of Solid Waste, to EPA Hazardous Waste Management Division Directors Regions I-X. Dated, July 5, 1994 at pgs. 5-6.

The Guidance further provides that:

> [a]s opposed to a trial burn test failure, an inconclusive test would not necessarily require changes to be made to the process prior to allowing a retest. The test could be repeated under the same conditions as the previous test, but with special attention paid to the situation that caused the original test to be inconclusive. During the retest, all attempts should be made to prevent that situation from reoccurring."

See, Guidance at pg. 7.

Finally, the Guidance provides that "[p]ermitting authorities should move expeditiously, in appropriate cases, to restrict operations (to the extent that regulatory and statutory authorities allow) after receiving information that a facility conducted an unsuccessful trial burn (i.e., a trial burn failure or an inconclusive trial burn)." See, Guidance at pg. 8. For incinerators, the Guidance contemplates that "the permittee shall cease feeding hazardous waste to the incinerator." See, Guidance at pg. 9.

Clearly, it is within the discretion of the EPA and the Ohio EPA to revoke the WTI RCRA permit in view of the new information regarding irregularities in the stack testing and the ambient air monitoring during the trial burn and in compliance testing at the facility thereafter.

Mr. Terance Branigan, counsel to EPA Region V, testified in the National Ombudsman public hearing last month in connection with the EPA policy on such a circumstance: "Most often my understanding is that the Agency prefers to work with permittees to bring permittees back to compliance with their permits or to resolve situations which may pose unacceptable threats to a community . . . And that's the general approach that the Agency has with respect to permittees. And it would be unfair, it seems to me, to apply a different standard in this particular situation." See, Hearing Record at pgs. 242-45.

The EPA most definitely has the authority under the Omnibus provision of RCRA to change permits to protect human health and the environment. See 42 U.S.C. § 6925(c)(3). See also, In the Matter of : Ecolotec, Inc. RCRA Appeal No. 871-14; In the Matter of American Cynamid Co., RCRA Appeal Nos. 88-22 and 89-9. In the Matter of: LCP Chemicals, RCRA Appeal No. 90-4. It is also clear that the federal government is not in any way bound by laches, that is, the neglect for an unreasonable and unexpected length of time under circumstances permitting diligence, to do what in law, should have been done. See, United States v. Summerlin, 310 U.S. 414 (1940).

Notably, the Times Beach case, upon which Office of Ombudsman recommendations were fully accepted several years ago, relating to necessity of retesting a hazardous waste incinerator due to Ombudsman findings of irregularities in the Dioxin Stack Test) offers firm guidance here.

In Times Beach, sampling irregularities involving chain of custody for dioxin prompted an Office of Ombudsman recommendation for a new Dioxin Stack Test of the hazardous waste incinerator, directed and monitored by the EPA Environmental Response Team. In so recommending, I agreed with the EPA Office of General Counsel that two relevant factors were "loss of public confidence" in the operations of the incinerator and "significant problems with the original test" such that "an additional test would provide significant relevant information unavailable through other means." See, Times Beach Final Report at pg. 25. December 20, 1996. In the Industrial Excess Landfill case, recently tendered to the EPA Region V for deliberation on Ombudsman recommendations, it is also significant that the EPA Science Advisory Board commended EPA Region V for invalidating rounds of site characterization data plagued by "imperfections in the chain of custody." As the Science Advisory Board noted, "the invalidation decision that becomes necessary, and inevitable when breakdowns in the chain of custody occur" and "EPA was correct in invalidating such rounds." See, National Ombudsman Preliminary Report on IEL Case at pg. 10. Dated October 20, 2000.

On Friday October 20, 2000 the National Ombudsman held an on the record interview with Kathleen McGinty. Ms. McGinty was the former Director of the White House Counsel of Environmental Quality and Environmental Advisor to the President. In that interview, Ms. McGinty said in her official capacity, she was familiar with the WTI incinerator case, and had

conversations with key EPA officials related to that case during her tenure at the White House. She stated unequivocally that at no time did any EPA official bring to her attention, any of the testing, sampling, and monitoring irregularities identified by the National Ombudsman.

Recommendation

EPA has the authority to revoke the WTI RCRA permit in view of irregularities with stack test and ambient air sampling during the prior trial burn and in subsequent compliance testing required by the permit. EPA should, at a minimum and consistent with the EPA Policy on Trial Burns, for inconclusive trial burns, cease feeding waste into the incinerator for a period of no less than six months and schedule a re-test of the trial burn.

Coordination must be assured with the Ohio EPA if a new trial burn is ordered next year as part of their permit renewal schedule. This is also consistent with the recommendation of OEPA staff for a new trial burn. The re-test or the new trial burn should be directed and monitored by the EPA Environmental Response Team in coordination with EPA Region V, the Ohio EPA and the Ohio Department of Health, the East Liverpool Board of Health, WTI and its technical advisors and the citizen petitioners and their technical advisors.

1. Risk Assessment Uncertainties

EPA decided to conduct a detailed risk assessment "as a check on the protectiveness of the regulations and permit." See, EPA Region V Response to Ombudsman Interrogatories, at pg. 7, dated July 14, 2000. EPA completed the scientific peer review process and issued the risk assessment in May 1997. As the Region observed, "that assessment did not predict significant or unusual risks associated with operation of the plant" and WTI subsequently began full commercial operation. See, Response, infra.

The Risk assessment cannot serve as an effective "check on the protectiveness of the permit" given the very same data irregularities and uncertainties around environmental monitoring. For example, EPA Region V has determined that "[t]he risk calculations in the detailed risk assessment were based almost entirely on stack emission testing" (emphasis Region V). See, EPA Region V Response to Ombudsman Interrogatories at pg. 12, July 14, 2000.

The virtual total reliance of the risk assessment on stack testing is of critical importance. For example, Region V observed that predictions relating to blood lead levels in the community were made in the risk assessment relying upon such data: and ambient air monitoring data as well. See, EPA Region V Response to Ombudsman Interrogatories, July 14, 2000.

First, the reliability of the stack testing at the WTI faculty is questionable. As noted in the previous discussion regarding monitoring, in general, and stack monitoring in, in particular, Ohio EPA found that WTI actually did not enter lead into the incineration system for purposes of tracking lead in stack emissions testing. In view of the fact that the risk assessment is predicated upon risk calculations made from stack testing at the WTI facility, therefore, the ability of the risk assessment to serve as an effective "check on the protectiveness of the permit" is necessarily diminished.

Second, the quality of ambient lead data used in the WTI risk assessment is open to question. According to a July 12, 1993 letter from Bob Hodanbosi, Ohio EPA to Pat Deluca, the Ohio Department of Health (ODH) was conducting an evaluation of ambient air concentrations of lead, mercury and several other heavy metals, the results of which were intended to be used

for the:

> "background characterization of the ambient air in East Liverpool. Ohio EPA DAPC agreed to have the samples analyzed and to set up monitoring stations through efforts coordinated with NOVAA personnel. . . . Data from these samples are critical for establishing a baseline for the ODH health study. The submission of samples for analysis by NOVAA has not been timely. The first samples were not submitted to DAPC until March 1993, these samples only included the original two sites from September through December 1992. We did not receive from the third site until April 1993. . . ."

These samples were more than likely the ones alluded to by EPA Region V in their response to Ombudsman interrogatories this past July:

> "One part of the risk assessment involved predicting blood lead levels. Such predictions take into account a combination of exposure routes, including exposure from soil, exposure from predicted concentrations in the air due to the incinerator stack, and exposure from measured or estimated background air levels. The background air concentration of lead in the vicinity of the incinerator, as reported by Ohio EPA, was one of many factors considered in calculating potential blood lead levels. Although these Ohio EPA background air lead concentrations were based on samples originally taken by NOVAA staff for the Ohio EPA, we have no reason at this time to suspect any problems with that background air lead data." See, Region V Response to Ombudsman Interrogatories at pg. 12, July 14, 2000.

The problem clearly articulated by Ohio EPA in 1993 points to the fundament issue of exceeding holding times for samples. NOVAA withheld samples from laboratory analysis for three to four months. The credibility of the ambient lead data used in the WTI risk assessment, therefore, is questionable.

Fundamental concerns were also raised in the National Ombudsman Hearing in East Liverpool, Ohio last month with respect to the risk assessment "not taking into account a worst case scenario for air inversions of extended duration in the valley in which the WTI facility operates and not relying upon meteorological and climatological data that is truly representative of the valley in which the facility operates." See, Hearing Record at pgs. 40 and 47. These serious issues will be addressed in the Ombudsman investigative process and in the Ombudsman Draft Final Report along with the serious issue of potential health effects to the surrounding community.

Recommendation

The risk assessment for the WTI facility should be revised to include an Addendum that incorporates new data from a re-test of the original trial burn or a new trial burn. Such an Addendum is necessary in view of the uncertainties surrounding the stack and other air monitoring data.

CONCLUSION

These recommendations are significant, as the WTI facility is in close proximity to residences and an elementary school. The precedents and evidence upon which they rest are solid. In view of fundamental irregularities in the testing, sampling, and environmental monitoring during the WTI trial burn and subsequent compliance testing along with corresponding uncertainties in the risk assessment, EPA should act consistently with past decisions based upon Ombudsman recommendations to not proceed with, discontinue or retest incineration operations that may have posed a threat to public safety and human health and the environment. See Brio, Vertac and Times Beach Ombudsman cases. The Ombudsman preliminary recommendations should be adopted.

cc: Honorable James Traficant, MC
Honorable Dennis Kucinich, MC
Administrator Carol Browner
Deputy Administrator Michael McCabe
Deputy Assistant Administrator Michael Shaprio
WTI Service List

Appendix B

OHIO DEPARTMENT OF HEALTH

246 North High Street
Columbus, Ohio 43215

614/466-3543
www.odh.ohio.gov

Ted Strickland/Governor

Alvin D. Jackson, M.D./Director of Health

AUG 1 9 2010

Alonzo Spencer, President
Save Our County, Inc.
P.O. Box 1242, Station A
East Liverpool, Ohio 43920

RE: Cancer among Residents of East Liverpool

Dear Mr. Spencer:

Thank you for your recent letter regarding the health assessments of potential exposures to air borne manganese and chromium metals in the East Liverpool community. As you are aware these assessments are under consideration by the Agency for Toxic Substance and Disease Registry (ATSDR). Your letter specifically requested that the most recent cancer incidence analyses conducted by the Ohio Department of Health be considered in this planning. These analyses were previously provided to you and the East Liverpool City Health Department.

As you and aware the cancer incidence analyses for the years 1996-2005 indicate a strikingly high incidence rate of overall cancer, but also for bladder, colon & rectum, esophagus, lung & bronchus, multiple myeloma, and prostate cancer when compared to Ohio and the U.S. The reasons for these relatively high rates are elusive. The causes of most sites/types of cancer are unknown. Most cancer researchers agree that each case of cancer is the result of a complex interaction of genetics, exposures from life styles choices, and environmental exposures to carcinogens and cancer promoters.

Our Comprehensive Cancer Control Program has provided these most recent cancer incidence analyses for East Liverpool to the ATSDR, Region 5, Chicago. Please see the attached copy of a letter from Robert Indian from our Comprehensive Cancer Control Program to Michelle A. Colledge, ATSDR regarding this matter.

We will continue to work with the East Liverpool Health Department, the Columbiana County Health Department, the ATSDR, and other agencies to advance cancer prevention and control in the community. Your participation and input will be most welcomed and valued.

Sincerely,

Alvin D. Jackson, M.D.
Director of Health

Appendix C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 23 2015

REPLY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Stewart Fletcher
Vice President – General Manager
Heritage Thermal Services
1250 St. George Street
East Liverpool, Ohio 43920

Re: Finding of Violation

Dear Mr. Fletcher:

The U.S. Environmental Protection Agency is issuing the enclosed Finding of Violation (FOV) to Heritage Thermal Services (you) under Section 113(a)(3) of the Clean Air Act, 42 U.S.C. § 7413(a)(3). We find that you are violating National Emission Standards for Hazardous Air Pollutants (NESHAP) from Hazardous Waste Combustors and your Title V permit at your East Liverpool, Ohio facility.

Section 113 of the Clean Air Act gives us several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order and bringing a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the FOV. The conference will give you an opportunity to present information on the specific findings of violation, any efforts you have taken to comply and the steps you will take to prevent future violations. In addition, in order to make the conference more productive, we encourage you to submit to us information responsive to the FOV prior to the conference date.

Please plan for your facility's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference.

The EPA contact in this matter is Linda H. Rosen. You may call her at (312) 886-6810 to request a conference. You should make the request within 10 calendar days following receipt of this letter. We should hold any conference within 30 calendar days following receipt of this letter.

Sincerely,

George T. Czerniak
Director
Air and Radiation Division

Enclosure

cc: Ed Fasko
Air Pollution Control Manager
Northeast District Office
Ohio Environmental Protection Agency

Bob Hodanbosi
Chief, Division of Air Pollution Control
Ohio Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	**FINDING OF VIOLATION**
	)	
Heritage Thermal Services, Inc.	)	**EPA-5-15-OH-12**
d/b/a Heritage Thermal Services,	)	
East Liverpool, Ohio	)	
	)	
Proceedings Pursuant to Section 113(a)(3)	)	
of the Clean Air Act, 42 U.S.C. § 7413(a)(3).	)	

FINDING OF VIOLATION

The U.S. Environmental Protection Agency (EPA) issues this Finding of Violation (FOV) to Heritage Thermal Services, Inc. d/b/a Heritage Thermal Services (Heritage) for violations of the Clean Air Act (CAA), 42 U.S.C. §§ 7401 *et seq.*, at its hazardous waste incinerator located in East Liverpool, Ohio (the Facility). Specifically, Heritage violated Section 112 of the CAA, 42 U.S.C. § 7412, the National Emission Standards for Hazardous Air Pollutants (NESHAP) from Hazardous Waste Combustors at 40 C.F.R. Part 63, Subpart EEE, 40 C.F.R. §§ 63.1200 through 63.1221 (HWC MACT), Title V of the CAA, 42 U.S.C. §§ 7661-7661f, and its implementing regulations at 40 C.F.R. Part 70, 40 C.F.R. §§ 70.1 through 70.12, and the Facility's Title V permit.

EPA issues this FOV pursuant to Section 113(a)(3) of the CAA, 42 U.S.C. § 7413(a)(3). The authority to issue this FOV has been delegated to the Regional Administrator of EPA, Region 5, and re-delegated to the Director of the Air and Radiation Division, Region 5.

STATUTORY REGULATORY AUTHORITY

HWC MACT

1. Section 112(d) of the CAA, 42 U.S.C. § 7412(d), requires EPA to promulgate regulations for particular industrial sources that emit significant quantities of one or more of the hazardous air pollutants (HAPs) listed in Section 112(b) of the CAA, 42 U.S.C. § 7412(b). These emission standards are called the NESHAPs.

2. Pursuant to Section 112(l) of the CAA, 42 U.S.C. § 7412(l), EPA may delegate to a State the authority to implement portions of the CAA in that state.

3. As part of the approval process of the Ohio Title V program under Section 502(d) of the CAA, 42 U.S.C. § 7661a(d), EPA delegated authority to the Ohio Environmental Protection Agency (Ohio EPA) to implement the NESHAPs in Ohio, including NESHAPs not yet promulgated. *See* 60 *Fed. Reg.* 42,045 (Aug. 15, 1995); 60 *Fed. Reg.* 18,790 (April 13, 1995).

4. Pursuant to Section 112(c) of the CAA, 42 U.S.C. § 7412(c), on July 16, 1992 (*see* 57 *Fed Reg.* 31,476), EPA identified hazardous waste combustors as a category of sources of HAPs, and pursuant to Section 112(d) of the CAA, 42 U.S.C. § 7412(d), EPA promulgated the HWC MACT on September 30, 1999. *See* 64 *Fed. Reg.* 53,038. The HWC MACT is set forth at 40 C.F.R. §§ 63.1200 through 63.1221.

5. The HWC MACT applies to both "area sources" and "major sources" of HAPs. *See* 40 C.F.R. § 63.1200. "Major sources" are sources or groups of stationary sources located within a contiguous area and under common control that emit or have the potential to emit ten tons per year or more of any HAP, or twenty-five tons per year or more of any combination of HAPs. *See* 42 U.S.C. § 7412(a)(1); 40 C.F.R. § 63.2. An "area source" is any stationary source of HAPs that is not a "major source." *See* 42 U.S.C. § 7412(a)(2).

6. A "stationary source" is any building, structure, facility, or installation that emits or may emit any air pollutant. *See* 42 U.S.C. § 7412(a).

7. The "affected source" to which the HWC MACT applies is, among other things, all hazardous waste combustors, which are defined to include "hazardous waste incinerators." *See* 40 C.F.R. § 63.1200.

8. A "hazardous waste incinerator" is a device defined as an incinerator under 40 C.F.R. § 260.10 that burns hazardous waste at any time, and includes all associated firing systems and air pollution control devices, as well as the combustion chamber equipment. *See* 40 C.F.R. § 63.1201(a).

9. An "incinerator" is defined to include "any enclosed device that: (1) uses controlled flame combustion and neither meets the criteria for classification as a boiler, sludge dryer, or carbon regeneration unit, nor is listed as an industrial furnace; or (2) meets the definition of infrared incinerator or plasma arc incinerator." *See* 40 C.F.R. § 260.10.

10. The HWC MACT implements section 112(d) of the CAA by requiring hazardous waste combustors to meet HAP emission standards reflecting the application of the maximum achievable control technology (MACT).

11. The emission standards and operating requirements of the HWC MACT apply at all times except: (i) during periods of startup, shutdown, and malfunction, and (ii) when hazardous waste is not in the combustion chamber. *See* 40 C.F.R. § 63.1206(b)(1).

Compliance Requirements

12. To demonstrate and monitor compliance with the carbon monoxide and hydrocarbon emission standard, the HWC MACT requires an affected source to conduct performance tests and to install and operate a continuous emission monitor (CEM). *See* 40 C.F.R. §§ 63.1207(b)(1) and 63.1209(a).

13. 40 C.F.R. § 63.1207(b) requires an affected source to conduct comprehensive performance tests (CPT) to: (1) demonstrate compliance with the emission standards in the HWC MACT; (2) establish operating parameter limits (OPL) provided by 40 C.F.R. § 63.1209, and (3) demonstrate compliance with the performance specifications for continuous monitoring systems (CMS).

14. 40 C.F.R. § 63.1209(b) requires that an affected source must use CMS to demonstrate compliance with the applicable OPLs in 40 C.F.R. § 63.1209.

15. The owner or operator of a hazardous waste incinerator must, among other things, retain information required to document and maintain compliance with the HWC MACT, including data recorded by its CMS. *See* 40 C.F.R. § 63.1211(b).

Compliance Date

16. The HWC MACT established an initial compliance date of September 30, 2002 for "existing sources." *See* 40 C.F.R. § 63.1206(a)(1) (1999). EPA subsequently revised the initial compliance date for "existing sources" to September 30, 2003. *See Fed. Reg.* 63,317 (December 3, 2001).

17. By the compliance date, the owner or operator of a hazardous waste combustor must have developed and included in its operating record a document referred to as a Documentation of Compliance (DOC), which identified: (1) the applicable emission standards; and (2) the corresponding OPLs under 40 C.F.R. § 63.1209 that will ensure compliance with those emissions standards. *See* 40 C.F.R. §§ 63.1206(a)(1) and 63.1211(c).

18. The owner or operator of a hazardous waste combustor must then operate in compliance with the OPLs and other requirements set forth in the DOC. *See* 40 C.F.R. §§ 63.1206(c)(1) and 63.1211(c).

19. When EPA revised the HWC MACT on October 12, 2005, EPA established the replacement emission standards set forth at 40 C.F.R. § 63.1219, and required owners or operators of hazardous waste combustors to submit a revised Notification of Compliance (NOC) reflecting its compliance with the revised HWC MACT.

20. The HWC MACT required the owner or operator of a hazardous waste incinerator to commence the initial comprehensive performance test (CPT) no later than 12 months after the compliance date (October 14, 2008) for the revised HWC MACT replacement

standards in 40 C.F.R. § 63.1219. The owner or operator must commence subsequent testing no later than 61 months after the date of commencing the previous CPT.

21. Within 90 days after it completes the CPT, the owner or operator of a hazardous waste combustor must prepare and submit an NOC to EPA, documenting the facility's compliance with the emission standards and continuous monitoring system requirements, and identifying OPLs under 40 C.F.R. § 63.1209. *See* 40 C.F.R. § 63.1207(j).

22. Following submittal of an NOC, the hazardous waste combustor must operate in compliance with the OPLs and other requirements set forth in the NOC in lieu of those in the DOC or previous NOC. *See* 40 C.F.R. § 63.1207(j)(1)(ii) and 40 C.F.R. § 63.1210(d)(2).

23. In order to comply with the destruction and removal efficiency and emission standards set forth in the HWC MACT, owners and operators must comply with the OPLs specified in its NOC. *See* 40 C.F.R. § 63.1209(j)-(o).

24. Failure to comply with the operating requirements set forth in the applicable DOC or NOC is failure to ensure compliance with the emission standards of the HWC MACT. *See* 40 C.F.R. § 63.1206(c)(1)(iii).

TITLE V REQUIREMENTS

25. Title V of the CAA, 42 U.S.C. §§ 7661-7661f, and its implementing regulations at 40 C.F.R. Part 70, establish an operating permit program for certain sources, including certain sources subject to standards under Section 112 of the CAA. The purpose of Title V is to ensure that all "applicable requirements" for compliance with the CAA are included in the Title V operating permit for the source.

26. 40 C.F.R. § 70.1(b) requires all sources subject to the Title V operating permit program, including certain sources subject to standards under Section 112 of the CAA, to have a permit to operate which includes enforceable emission limitations and such other conditions as are necessary to assure compliance with all "applicable requirements" of the CAA and the requirements of the applicable SIP.

27. Pursuant to 40 C.F.R. § 70.2, an "applicable requirement" includes any standard or other requirement under Section 112 of the CAA, which includes all applicable NESHAP requirements.

28. Pursuant to 40 C.F.R. § 63.1206(c)(1)(iv) and (v), operating requirements in the NOC are "applicable requirements" for purposes of 40 C.F.R. Part 70 and shall be incorporated into the Title V permit.

29. 40 C.F.R. § 70.7(b) requires that the owner or operator of a Title V source shall not operate such source after the date that a timely and complete Title V permit application is required to be submitted, except in compliance with a permit issued under a Part 70 program.

ENFORCEMENT AUTHORITY

30. Section 113(a)(3) of the CAA, 42 U.S.C. § 7413(a)(3), provides in part that if the Administrator finds that a person has violated, or is in violation of any requirement or prohibition of any rule promulgated under Title V of the CAA, the Administrator may issue an administrative penalty order under Section 113(d), issue an order requiring compliance with such requirement or prohibition, or bring a civil action pursuant to Section 113(b) for injunctive relief and/or civil penalties.

31. Sections 113(a)(3) and (b) of the CAA, 42 U.S.C. § 7413(a)(3) and (b), prohibit violations of any NESHAP regulation. Thus, a violation of a NESHAP regulation is a violation of the CAA.

FACTUAL BACKGROUND

Heritage and the Facility

32. Heritage's Facility treats hazardous waste by thermal oxidation in a rotary kiln-based incineration system. Heritage's incineration system includes a primary combustion chamber (a rotary kiln) followed by a secondary combustion chamber (SCC). The incineration system also includes heat recovery and flue gas treatment units.

33. Heritage was and is a "person," as that term is defined in Section 302(e) of the CAA, 42 U.S.C. § 7602(e).

34. Heritage was and is an "owner" and an "operator" as those terms are defined in Section 112 of the CAA, 42 U.S.C. § 7412, and 40 C.F.R. § 63.2, of a "hazardous waste incinerator," as that term is defined in 40 C.F.R. §§ 260.10 and 63.1201, located at 1250 St. George Street, East Liverpool, Ohio.

35. Heritage's incinerator was and is an "existing source" within the meaning of the HWC MACT at 40 C.F.R. §§ 63.1201(a) and 63.1206(a)(1)(ii)(B), because construction of the hazardous waste incinerator commenced prior to April 20, 2004.

36. Heritage was and is subject to the HWC MACT at all times relevant to this FOV because it burns hazardous waste in the incinerator it owns and operates.

37. On December 22, 2008, Ohio EPA issued Heritage its Title V permit, effective January 12, 2009, including requirements that Heritage establish and comply with various OPLs.

38. On March 30 and 31, April 1 and 2, May 11 and 12, September 15 and 16, 2010, Heritage conducted a CPT for the incinerator to demonstrate compliance with the HWC MACT, as required by 40 C.F.R. § 63.1207.

39. On November 18, 2010, Heritage submitted an NOC (the 2010 NOC) and the results of the CPT conducted during 2010 at the facility. The 2010 NOC contained OPLs that Heritage established during its CPT. The OPLs identified in the 2010 NOC became effective on November 18, 2010, and remain in effect through the present.

Clinker Fall Events

40. Heritage experienced "routine clinker fall" events at the Facility on 39 days between November 18, 2010 and December 31, 2014. "Clinker" is the name for hardened combustion remains (fly ash or particulate matter) entrained in flue gas that build up on the ceiling and sidewalls of the SCC at the Facility. These "clinker fall events" occurred when the weight of the clinker in the SCC became such that it could no longer support itself and the clinker dislodged and fell into the quench tank at the bottom of the SCC, generating steam and increasing pressure in the incineration system.

Energetic Ash Pressurization Events

41. Heritage experienced a series of "clinker events" at the Facility involving "energetic ash" on the following dates: (1) January 16, 2011; (2) April/May 2011; (3) June 9, 2011; (4) December 17, 2011; (5) January 31, 2012; (6) March 13, 2013; and (7) July 13, 2013. These "energetic ash pressurization events" involved clinker of such an energized nature that falling into the quench tank at the bottom of the SCC caused more rapid generation of steam than a "routine clinker fall," along with a corresponding increase in pressure in the incineration system.

42. The April 12, 2011 event caused extensive damage to the heat recovery boiler outlet expansion joint and displaced the ductwork.

43. The July 13, 2013 event caused extensive damage to the heat recovery boiler and a rupture at the expansion joint for the ducting joining the heat recovery boiler to the spray dryer.

44. The July 13, 2013 event caused the release of gas and boiler ash containing heavy metals and other HAPs from the failed duct connection onto the surrounding equipment, the concrete below, and into the surrounding community.

Operator Error Events

45. Heritage experienced numerous OPL or emission exceedances at the Facility caused by "operator error" between November 18, 2010 and December 31, 2014.

HERITAGE'S HWC MACT VIOLATIONS

40 C.F.R. § 63.1219(a)(5)- THC Emission Rate Exceedances

46. 40 C.F.R. § 63.1219(a)(5) prohibits the owner or operator of an existing hazardous waste incinerator from discharging or causing combustion gases to be emitted into the atmosphere that contain total hydrocarbons (THC) in excess of 10 parts per million (ppm) by volume over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis, corrected to 7 percent oxygen, and reported as propane.

47. On the following days, Heritage discharged or caused combustion gases to be emitted into the atmosphere from the Facility containing THC in excess of the 10 ppm by volume standard:

a. 11/24/10, 11/25/10 (two times), 11/30/10,
b. 12/31/10
c. 1/3/11, 1/4/11, 1/9/11, 1/15/11, 1/16/11, 1/17/11, 1/19/11, 1/31/11
d. 2/11/11, 2/12/11 (two times), 2/28/11
e. 3/2/11, 3/6/11, 3/22/11, 3/24/11, 3/29/11
f. 4/1/11, 4/2/11, 4/5/11, 4/9/11, 4/12/11
g. 5/6/11, 5/10/11, 5/11/11, 5/20/11
h. 6/7/11, 6/24/11
i. 7/1/11, 7/14/11, 7/25/11
j. 8/1/11, 8/10/11 (three times), 8/11/11, 8/12/11, 8/17/11 (two times), 8/21/11, 8/22/11 (two times)
k. 9/5/11 (two times)
l. 10/7/11, 10/8/11, 10/16/11, 10/31/11
m. 11/6/11, 11/22/11
n. 12/1/11, 12/13/11
o. 1/1/12, 1/4/12, 1/25/12
p. 3/25/12
q. 4/2/12, 4/17/12, 4/18/12 (four times), 4/30/12 (two times)
r. 5/3/12, 5/11/12, 5/13/12, 5/14/12, 5/16/12, 5/24/12, 5/29/12
s. 6/1/12, 6/12/12, 6/19/12, 6/22/12, 6/26/12, 6/27/12
t. 7/14/12, 7/16/12, 7/31/12
u. 8/3/12, 8/13/12, 8/27/12, 8/29/12, 8/31/12
v. 9/7/12, 9/21/12 (two times)
w. 10/22/12
x. 11/6/12, 11/14/12, 11/20/12 (two times)
y. 12/4/12, 12/7/12, 2/19/12
z. 1/19/13, 1/23/13
aa. 2/5/13, 2/14/13, 2/17/13, 2/19/13, 2/20/13, 2/24/13
bb. 3/4/13, 3/22/13
cc. 4/3/13, 4/4/13, 4/11/13, 4/13/13, 4/25/13
dd. 5/21/13, 5/22/13, 5/26/13

ee. 6/2/13, 6/5/13, 6/15/13, 6/22/13, 6/26/13
ff. 7/1/13, 7/5/13, 7/6/13, 7/12/13, 7/13/13 (two times)
gg. 8/16/13, 8/21/13, 8/31/13
hh. 9/5/13, 9/10/13, 9/17/13, 9/23/13, 9/29/13, 9/30/13
ii. 10/14/13 (two times), 10/24/13
jj. 11/15/13, 11/22/13, 11/26/13
kk. 12/4/13, 12/14/13
ll. 1/6/14, 1/16/14, 1/28/14,
mm. 2/22/14, 2/26/14
nn. 4/11/14, 4/14/14, 4/19/14, 4/24/14, 4/27/14
oo. 5/17/14 5/28/14, 5/29/14 (two times)
pp. 6/29/14
qq. 7/4/14 (two times), 7/6/14, 7/8/14, 7/1714, 7/20/14
rr. 8/12/14, 8/16/14, 8/19/14, 8/29/14, 8/30/14 (three times)
ss. 9/5/14, 9/5/14, 9/22/14, 9/25/14, 9/26/14, 9/29/14, 9/29/14
tt. 10/1/14 (two times), 10/3/14, 10/8/14, 10/11/14, 10/14/14, 10/22/14
uu. 11/5/14, 11/6/14, 11/26/14, 11/29/14
vv. 12/8/14, 12/17/14

48. By exceeding the 10 ppm THC standard, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1219(a)(5), 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedance: Maximum Flue Gas Flowrate

49. In order to comply with the DRE standard, the dioxin/furan standard, the particulate matter standard, the semivolatile and low volatile metals standards, and the hydrogen chloride and chlorine gas standards, the owner or operator of a hazardous waste combustor must establish and maintain a maximum flue gas flowrate OPL. *See* 40 C.F.R. §§ 63.1209(j)(2), (k)(3), (m)(2), (n)(5), and (o)(2).

50. Heritage established the applicable maximum flue gas flowrate OPL for the Facility in the 2010 NOC as 67,505 standard cubic feet per minute (scfm) as a 1-hour rolling average.

51. On the following dates, the flue gas flow rate for the Facility exceeded the applicable maximum flue gas flowrate OPL:

a. 4/12/11
b. 4/13/11
c. 7/13/13
d. 10/9/14

52. By exceeding the maximum flue gas flowrate, Heritage violated the HWC MACT at 40 C.F.R. § 63.1209(j)(2), (k)(3), (m)(2), (n)(5), and (o)(2) and 40 C.F.R. § 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedance: Minimum Combustion Chamber Temperature

53. In order to comply with the DRE standard and the dioxin/furan standard, the owner or operator of a hazardous waste combustor must establish and maintain a minimum combustion chamber temperature OPL for each combustion chamber. *See* 40 C.F.R. §§ 63.1209(j)(1) and (k)(2).

54. Heritage separately established this OPL for the Facility in the 2010 NOC for the rotary kiln and the SCC.

OPL Exceedance: Minimum Rotary Kiln Temperature

55. The applicable minimum rotary kiln temperature OPL for the Facility is 1718 degrees Fahrenheit as a 1-hour rolling average.

56. On the following dates, the temperature inside the rotary kiln at the Facility fell below the applicable minimum rotary kiln temperature OPL:

    a. 1/16/11
    b. 4/12/11
    c. 4/13/11
    d. 1/31/12
    e. 7/13/13

57. By failing to maintain the rotary kiln temperature at or above the required minimum level, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(j)(1) and (k)(2), 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedance: Minimum SCC Temperature

58. The applicable minimum SCC temperature OPL for the Facility is 1747 degrees Fahrenheit as a 1-hour rolling average.

59. On the following dates, the temperature inside the SCC fell below the applicable Minimum SCC Temperature OPL:

    a. 1/16/11
    b. 4/12/11
    c. 4/13/11
    d. 1/31/12
    e. 10/5/12 (two times)
    f. 10/17/12
    g. 11/23/12
    h. 12/27/12
    i. 3/3/13
    j. 7/13/13

k. 10/24/13
l. 4/28/14

60. By failing to maintain the SCC temperature at or above the required minimum level, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(j)(1) and (k)(2), 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedance: SCC Pressure

61. 40 C.F.R. § 63.1206(c)(5)(i) requires the owner or operator to control combustion leaks of HAPs from its hazardous waste combustor. The owner or operator can select one of two means of compliance; either by keeping the combustion zone sealed to prevent combustion system leaks pursuant to 40 C.F.R. § 63.1206(c)(5)(i)(A), or by complying with and maintaining the maximum combustion zone pressure lower than ambient pressure using an instantaneous monitor pursuant to 40 C.F.R. § 63.1206(c)(5)(i)(B). The owner or operator may also request prior written approval from EPA for it to utilize "an alternative means of control to provide control of combustion system leaks equivalent to maintenance of combustion zone pressure lower than ambient pressure." 40 C.F.R. § 63.1206(c)(5)(i)(C).

62. On September 4, 2003, EPA approved a request by Von Roll America, Inc. (Heritage's predecessor in interest) that the Facility control combustion system leaks by maintaining the maximum combustion zone pressure lower than ambient pressure pursuant to 40 C.F.R. § 63.1206(c)(5)(i)(B), and by using an alternative means of controlling combustion system leaks under 40 C.F.R. § 63.1206(c)(5)(i)(C) that is equivalent to maintaining maximum combustion zone pressure lower than ambient pressure. The alternative means of controlling system leaks involves the use of pressurized shrouds around the inlet and outlet ends of the primary combustion chamber to control combustion system leaks during pressure spikes. Heritage is required under both compliance methods to utilize instantaneous monitoring of the pressure in the SCC and the inlet and outlet shrouds.

63. Heritage's alternative means to control and monitor combustion system leaks requires that Heritage:

a. Pressurize the inlet and outlet end shrouds to approximately 0.2 inches of water column;
b. Monitor the pressure in the inlet and outlet end shrouds and in the SCC;
c. Comply with the following OPLs:
    i. The pressure in the SCC must be greater than zero inches of water column for more than 10 seconds; or
    ii. The pressure in the SCC must be greater than the pressure in the inlet or outlet end shroud at any time; or
    iii. The pressure in the SCC must be greater than the ambient pressure for more than 2 seconds during operating time when the pressurizing equipment for either shroud has failed.

d. If Heritage exceeds any of these OPLs, the automatic feed cut-off (AWFCO), system will engage.

64. On the following dates, Heritage failed to comply with the SCC pressure OPL by failing to maintain SCC pressure: (1) greater than zero inches of water column for more than 10 seconds; (2) greater than the pressure in the inlet or outlet end shroud at any time; or (3) greater than the ambient pressure for more than 2 seconds during operating time when the pressurizing equipment for either shroud had failed:

a. 12/12/10, 12/22/10
b. 1/4/11 (three separate exceedances), 1/10/11, 1/11/11, 1/16/11(ten separate exceedances), 1/17/11 (five separate exceedances), 1/18/11 (two separate exceedances), 1/31/11 (two separate exceedances)
c. 2/6/11, 2/16/11
d. 3/26/11, 3/27/11 (two separate exceedances), 3/29/11 (two separate exceedances), 3/30/11 (four separate exceedances), 3/31/11
e. 4/1/11, 4/4/11 (six separate exceedances), 4/6/11 (two separate exceedances), 4/12/11 (three separate exceedances)
f. 5/4/11, 5/5/11 (two separate exceedances), 5/10/11 (three separate exceedances), 5/11/11
g. 6/7/11 (two separate exceedances), 6/9/11 (two separate exceedances), 6/26/11 (two separate exceedances)
h. 8/30/11
i. 10/14/11
j. 11/5/11, 11/6/11, 11/28/11
k. 12/1/11 (two separate exceedances), 12/17/11 (two separate exceedances), 12/27/11 (two separate exceedances)
l. 1/31/12 (two separate exceedances)
m. 3/5/12 (two separate exceedances)
n. 9/18/12, 9/22/12
o. 11/3/12, 11/4/12
p. 12/7/12, 12/19/12
q. 1/20/13
r. 2/1/13
s. 3/3/13
t. 4/9/13, 4/28/13, 4/30/13
u. 6/2/13
v. 7/9/13, 7/13/13
w. 10/13/13
x. 11/19/13
y. 12/4/13
z. 6/2/14

65. By failing to maintain the SCC pressure at the required level, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1206(c)(5)(i)(B) and (C), 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedances: Minimum Carbon Feed Pressure or Minimum Enhanced Carbon Injection System Pressure

66. In order to comply with the dioxin/furan standard and the mercury standard, the owner or operator of a hazardous waste incinerator must establish and comply with a limit on the minimum carbon feed pressure or minimum enhanced carbon injection system (ECIS) pressure, and the minimum carrier fluid (gas or liquid) flowrate or pressure drop as an hourly rolling average based on the manufacturer's specifications. *See* 40 C.F.R. §§ 63.1209(k)(6)(ii) and 63.1209(l)(3).

67. Heritage separately established this OPL in its 2010 NOC for each of the two locations where carbon is injected (the Spray Dryer Adsorber (SDA) and the Scrubber locations).

68. The November 2010 NOC, the applicable minimum carbon feed pressure is 3.0 psig as a 1-hour rolling average at each location.

69. On the following dates, the carbon feed pressure fell below the minimum carbon feed pressure at the SDA location:

SDA ECIS Pressure

a. 4/12/11
b. 4/13/11
c. 5/11/11

70. On the following dates, the carbon feed pressure fell below the minimum carbon feed pressure at the SDA location:

Scrubber ECIS Pressure

a. 4/13/11
b. 5/11/11
c. 7/13/13

71. By failing to maintain the carbon feed pressure at the SDA location and the scrubber location at or above the required minimum levels, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(k)(6)(ii) and (l)(3), 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedances: Minimum Carbon Feed Rate

72. In order to comply with the dioxin/furan standard and the mercury standard, the owner or operator of a hazardous waste incinerator must establish and comply with a limit on the minimum carbon feed rate, and the minimum carbon injection rate on an hourly rolling average calculated as the average of the test averages. *See* 40 C.F.R. §§ 63.1209(k)(6)(i) and (l)(3).

73. Heritage separately established this OPL in its 2010 NOC for each of the two locations where carbon is injected at the Facility (the SDA and Scrubber locations).

74. Heritage claimed in its 2010 NOC that the applicable minimum carbon feed rate for the SDA location at the Facility is Confidential Business Information.

75. On the following days the carbon feed rate fell below the minimum carbon feed rate for the Facility at the SDA Location:

a. 6/21/12
b. 2/18/14

76. By failing to maintain the carbon feed rate at the SDA location at the Facility at or above the required minimum level, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(k)(6)(i) and (l)(3), 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedances: Minimum Scrubber Ring Jet Blowdown Flowrate

77. In order to comply with the hydrogen chloride and chlorine gas standard, the mercury standard, and the particulate matter standard, the owner or operator of a hazardous waste incinerator must establish and comply with a limit on the minimum scrubber ring jet blowdown flowrate on an hourly rolling average as the average of the test run averages. *See* 40 C.F.R. §§ 63.1209(o)(3)(v), 63.1209(m)(1)(i)(B), and 63.1209(l)(2).

78. Heritage established in the 2010 NOC the applicable minimum scrubber ring jet blowdown flowrate for the Facility as 19.5 gallons per minute (gpm) as a 1-hour rolling average.

79. On the following days, Heritage operated the incinerator in such a manner that the scrubber ring jet blowdown flow rate for the Facility fell below the minimum scrubber ring jet blowdown flowrate OPL:

a. 4/13/11 (two times)
b. 3/25/12
c. 12/4/13

80. By failing to maintain the scrubber ring jet flowrate for the Facility at or above the required minimum level, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(o)(3)(v), 63.1209(m)(1)(i)(B), and 63.1209(l)(2), § 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedances: Minimum Ring Jet Pressure Drop

81. In order to comply with the hydrogen chloride and chlorine gas standard, the mercury standard, and the particulate matter standard, the owner or operator of a hazardous waste incinerator must establish and comply with a limit on the minimum pressure drop across the scrubber on an hourly rolling average as the average of the test run averages. *See* 40 C.F.R. §§ 63.1209(o)(3)(i), 63.1209(m)(1)(i)(A), and 63.1209(l)(2).

82. Heritage established in the 2010 NOC the applicable minimum ring jet pressure drop for the Facility as 28.0 inches of water column as a 1-hour rolling average.

83. On the following days, the ring jet pressure drop at the Facility fell below the minimum ring jet pressure drop OPL:

a. 1/30/11
b. 4/18/12
c. 11/3/12
d. 4/13/13
e. 3/26/14

84. By failing to maintain the ring jet pressure drop for the Facility at or above the required minimum level, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(o)(3)(i), (m)(1)(i)(A), and (l)(2), 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedance: Minimum Ring Jet Sump Level

85. In order to comply with the particulate matter standard in the HWC MACT, an owner or operator of a hazardous waste incinerator must, among other things, establish and comply with an OPL for the minimum scrubber tank volume or liquid level using a CMS. *See* 40 C.F.R. §§ 63.1209(m)(1)(i)(B).

86. Heritage established the applicable minimum scrubber ring jet sump level for the Facility in the 2010 NOC as 1.7 feet as a 1-hour rolling average.

87. On December 6, 2011, the scrubber ring jet sump level at the Facility fell below the minimum scrubber ring jet sump level OPL.

88. By failing to maintain the scrubber ring jet sump level at or above the required minimum level, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(m)(1)(i)(B) and 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

OPL Exceedance: Minimum Scrubber pH

89. In order to comply with the hydrogen chloride and chlorine gas standard of the HWC MACT, the owner or operator of a hazardous waste incinerator must establish and comply with an OPL for the minimum wet scrubber pH on an hourly rolling average as the average of the performance test run averages. *See* 40 C.F.R. § 63.1209(o)(3)(iv).

90. Heritage established the applicable Minimum Scrubber pH for the Facility in the 2010 NOC as 7.6 as a 1-hour rolling average.

91. On May 18, 2014, the scrubber pH at the Facility fell below the Minimum Scrubber pH OPL.

92. By failing to maintain the scrubber pH at or above the required minimum level for the Facility, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1209(o)(3)(iv) and 63.1206(b)(1) and (c)(1); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

40 C.F.R. § 63.1206(c)(3)(ii)
Failure to Duct Emissions to Air Pollution Control Equipment

93. 40 C.F.R. § 63.1206(c)(3)(ii) requires that, during an AWFCO, the owner or operator of a hazardous waste incinerator must continue to duct combustion gases to the air pollution control system while hazardous waste remains in the combustion chamber (i.e. the hazardous waste residence time had not transpired since the hazardous waste feed cutoff system was activated).

94. On April 12, 2011 and July 13, 2013, Heritage failed to continue to duct combustion gases to the air pollution control system while hazardous waste remained in the combustion chamber (i.e. the hazardous waste residence time had not transpired since the hazardous waste feed cutoff system was activated).

95. By failing to duct combustion gases to the air pollution control system during an AWFCO while hazardous waste remained in the combustion chamber at the Facility, Heritage violated the HWC MACT at 40 C.F.R. §§ 63.1206(c)(3)(ii); Title V at 40 C.F.R. § 70.7(b); and the Facility's Title V permit.

40 C.F.R. §§ 63.1211
Recordkeeping and Reporting Violations

Combustion System Pressure

96. The HWC MACT at 40 C.F.R. § 63.1211(b) requires affected sources to retain, among other things, "information required to document and maintain compliance with the [HWC MACT], including data recorded by [CMS] and copies of all notifications, reports, plans, and other documents submitted to [EPA or Ohio EPA]."

97. Heritage is required to demonstrate compliance with the MACT Provision for combustion system leaks using an instantaneous monitor to monitor the pressure in: (1) the SCC, and (2) the inlet and outlet shrouds.

98. "Instantaneous monitoring" for combustion system leak control means detecting and recording pressure, without use of an averaging period, at a frequency adequate to detect combustion system leak events from hazardous waste combustion. *See* 40 C.F.R. § 63.1201(a).

99. Heritage does not record the instantaneous pressure of the SCC or the inlet and outlet shrouds. Heritage records one-minute averages of the SCC pressure and inlet and outlet shroud pressure.

100. Since at least September 11, 2013, Heritage has failed to record the instantaneous pressure of the SCC and the instantaneous pressures of the inlet and outlet shrouds.

101. Heritage violated 40 C.F.R. § 63.1211(b) by failing to maintain records of the instantaneous pressure of the SCC and the inlet and outlet shrouds which are measurements required to document and maintain compliance with the regulations of Subpart EEE.

ENVIRONMENTAL IMPACT OF VIOLATIONS

Heritage's violations have caused or can cause excess emissions of organic HAPs, dioxins/furans, PM, PM metals (such as antimony, cobalt, manganese, nickel, and selenium), mercury, semivolatile (lead and cadmium) metals, low volatile (arsenic, beryllium, and total chromium) metals, hydrogen chloride and chlorine.

Organic HAPs: Organic HAPs include halogenated and nonhalogenated organic classes of compounds such as polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). Both PAHs and PCBs are classified as potential human carcinogens, and are considered toxic, persistent and bioaccumulative. Organic HAP also include compounds such as benzene, methane, propane, chlorinated alkanes and alkenes, phenols and chlorinated aromatics. Adverse health effects of HAPs include damage to the immune system, as well as neurological, reproductive, developmental, respiratory and other health problems.

Dioxin/Furans: Dioxins and furans can cause a number of health effects. The most well-known member of the dioxins/furans family is 2,3,7,8 TCDD. EPA has said that it is likely to be a cancer causing substance to humans. In addition, people exposed to dioxins and furans have experienced changes in hormone levels. High doses of dioxin have caused a skin disease called chloracne. Animal studies show that animals exposed to dioxins and furans experienced changes in their hormone systems, changes in the development of the fetus, decreased ability to reproduce and suppressed immune system.

PM: Exposure to particles can lead to a variety of serious health effects. Fine particles pose the greatest problems. Scientific studies show links between these small particles and numerous adverse health effects. Epidemiological studies have shown a significant correlation between elevated PM levels and premature mortality. Other effects associated with PM exposure include aggravation of respiratory and cardiovascular disease, lung disease, decrease lung function, asthma attacks, and certain cardiovascular problems.

PM Metals (antimony, cobalt, manganese, nickel and selenium): Studies have shown that antimony accumulates in the lung and is retained for a long time. Antimony has been associated with lung damage and myocardial effects. Cobalt has been reported to cause respiratory effects in humans including irritation, wheezing, asthma and pneumonia and may cause lung cancer. Chronic exposure to high levels of manganese by inhalation in humans results primarily in central nervous system effects. Respiratory effects have been reported in humans from inhalation of nickel. EPA has classified nickel refinery subsulfide as a human carcinogen and nickel carbonyl as a probable human carcinogen. Studies of humans chronically exposed to high levels of selenium in food and water have reported discoloration of the skin, pathological deformation and loss of nails, loss of hair, excessive tooth decay, lack of mental alertness and listlessness.

Mercury: Chronic exposure to elemental mercury in humans affects the central nervous system with effects such as increased excitability, irritability, excessive shyness, and tremors. The major effect from chronic exposure to inorganic mercury is kidney damage. EPA has classified mercuric chloride (an inorganic mercury compound) as a Group C possible human carcinogen.

Semivolatile metals (lead and cadmium): Chronic exposure to high levels of lead in humans results in effects on the blood, central nervous system, blood pressure, and kidneys. Reproductive effects, such as decreased sperm count in men and spontaneous abortions in women have been associated with lead exposure. Chronic inhalation or oral exposure to cadmium leads to a build-up of cadmium leads to a build-up of cadmium in the kidneys that can cause kidney disease. Cadmium has also been shown to be a developmental toxicant in animals, resulting in fetal malformations.

Low volatile metals (arsenic, beryllium, and total chromium): Chronic inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes. Inorganic arsenic exposure in humans by the inhalation route has been shown to be strongly associated with lung cancer. Chronic inhalation exposure of humans to high levels of beryllium has been reported to cause chronic beryllium disease in which noncancerous lesions develop in the lung. Inhalation exposure to high levels of beryllium has been demonstrated to cause lung cancer in rats and monkeys. Chromium may be emitted tin two forms, trivalent chromium or hexavalent chromium. The respiratory tract is the major target organ for hexavalent chromium toxicity for inhalation exposures. Human and animal studies have clearly established that inhaled hexavalent chromium is a carcinogen. The respiratory tract is also the major target organ for trivalent chromium, although trivalent chromium is less toxic than hexavalent chromium.

Hydrogen chloride: Hydrogen chloride is corrosive to the eyes, skin, and mucous membranes. Chronic occupational exposure to hydrogen chloride has been reported to cause gastritis, bronchitis, and dermatitis in workers. Prolonged exposure to low concentrations may also cause dental discoloration and erosion. In rats exposed to hydrogen chloride by inhalation, altered estrus cycles have been reported in females and increased fetal mortality and decreased fetal weight have been reported in offspring.

Chlorine gas: Chlorine is an irritant to the eyes, the upper respiratory track, and lungs. Chronic exposure to chlorine gas in workers has resulted in respiratory effects including eye and throat irritation and airflow obstruction.

3/23/15

Date

George T. Czerniak
Director
Air and Radiation Division

CERTIFICATE OF MAILING

I, Loretta Shaffer, certify that I sent a Finding of Violation, No. EPA-5-15-OH-12, by Certified Mail, Return Receipt Requested, to:

Stewart Fletcher
Vice President – General Manager
Heritage Thermal Services, Inc.
d/b/a Heritage Thermal Services
1250 Saint George Street
East Liverpool, Ohio 43920

I also certify that I sent copies of the Finding of Violation by first-class mail to:

Ed Fasko
Air Pollution Control Manager
Northeast District Office
Ohio Environmental Protection Agency
2110 East Aurora Road
Twinsburg, Ohio 44087

Bob Hodanbosi
Chief, Division of Air Pollution Control
Ohio Environmental Protection Agency
1800 WaterMark Drive
Columbus, Ohio 43266-1049

On the 24th day of March 2015

Kathy Jones
for Loretta Shaffer, Program Technician
AECAB, PAS

CERTIFIED MAIL RECEIPT NUMBER: 7011 2870 0001 9580 5203

Appendix D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 18 2010

REPLY TO THE ATTENTION OF:
(AE-17J)

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Frank Murray
Vice President and General Manager
Heritage-WTI, Inc.
1250 St. George Street
East Liverpool, Ohio 43920-3400

Re: Finding of Violation
Heritage-WTI, Inc., East Liverpool, Ohio

Dear Mr. Murray:

This letter advises you that the U.S. Environmental Protection Agency (or we) has determined that the hazardous waste incinerator at Heritage-WTI, Inc.'s facility at 1250 St. George Street, East Liverpool, Ohio (WTI) has violated the Clean Air Act (CAA) and the National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors, 40 C.F.R. 63, Subpart EEE (HWC MACT). We have provided a list of the requirements violated below. We are today issuing to you a Finding of Violation (FOV) for these violations.

Section 112(d) of the CAA requires the EPA Administrator to promulgate regulations establishing emission standards for each category or subcategory of major sources and area sources of hazardous air pollutants (HAPs) listed for regulation pursuant to Section 112(c) of this section. On July 16, 1992, EPA published an initial list of categories of major and area sources of HAPs. See 57 FR 31576. The list included, among other things, hazardous waste incineration. On September 30, 1999, EPA promulgated the HWC MACT to protect public health and the environment.[1]

The HWC MACT includes the following requirements:

1) The owner or operator of a hazardous waste incinerator equipped with a waste heat boiler must not discharge or cause combustion gases to be emitted into the atmosphere that contain dioxins and furans in excess of 0.20 nanogram toxic equivalent per dry standard

[1] EPA amended the HWC MACT on November 19, 1999, July 10, 2000, November 9, 2000, May 14, 2001, July 3, 2001, December 6, 2001, February 13, 2002, February 14, 2002; December 19, 2002, April 9, 2004, June 23, 2003, October 12, 2005, April 20, 2006, October 25, 2006, April 8, 2008, and October 28, 2008.

cubic meter, corrected to 7 percent oxygen. WTI's Title V permit incorporates this limit. 2,3,7,8-tetrachlorodibenzo-para-dioxin (2,3,7,8-TCDD) causes chloracne in humans, a severe acne-like condition. It is known to be a developmental toxicant in animals, causing skeletal deformities, kidney defects, and weakened immune responses in the offspring of animals exposed to 2,3,7,8-TCDD during pregnancy. EPA has classified 2,3,7,8-TCDD as a probable human carcinogen (Group B2).

2) The owner or operator of a hazardous waste incinerator must not discharge or cause combustion gases to be emitted into the atmosphere that contain mercury in excess of 130 micrograms per dry standard cubic meter, corrected to 7 percent oxygen. WTI's Title V permit incorporates this limit. Acute exposure to high levels of elemental mercury in humans results in central nervous system (CNS) effects such as tremors, mood changes, and slowed sensory and motor nerve function. Chronic exposure to elemental mercury in humans also affects the CNS, with effects such as erethism (increased excitability), irritability, excessive shyness, and tremors.

EPA finds that the WTI facility has violated the above listed HWC MACT requirements as incorporated into the WTI's Title V permit. Because WTI violated its Title V permit, you have also violated Title V of the CAA and its associated regulations which require compliance with the terms and conditions of Title V permits.

Section 113 of the CAA gives EPA several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order, bringing a judicial civil action, and bringing a judicial criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the FOV. This conference will provide you a chance to present information on the identified violations, any efforts you have taken to comply, and the steps you will take to prevent future violations. Please plan for your facility's technical and management personnel to take part in these discussions. You may have an attorney represent and accompany you at this conference.

The EPA contact in this matter is Charles Hall. You may call him at (312) 353-3443. If you wish to request a conference, you should do so within 3 business days following receipt of this FOV. EPA hopes that this FOV will encourage WTI's compliance with the requirements of the Clean Air Act.

Sincerely,

Cheryl L. Newton
Director
Air and Radiation Division

Enclosure

Enclosure

cc: Robert Hodanbosi, Ohio Environmental Protection Agency

Edward Fasko, Northeast District Office
Ohio Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	FINDING OF VIOLATION
	)	
Heritage-WTI, Inc.	)	EPA-5-10-OH-16
East Liverpool, Ohio	)	
	)	
Proceedings pursuant to the Clean Air Act,	)	
42 U.S.C. §§ 7401 et seq.	)	

FINDING OF VIOLATION

Heritage-WTI, Inc. (WTI or you) owns and operates a hazardous waste incinerator at WTI's facility at 1250 St. George Street, East Liverpool, Ohio (Facility).

The U.S. Environmental Protection Agency is sending this Finding of Violation (FOV) to you for violation of 40 C.F.R. §§ 63.1219(a)(1)(i)(A) and 63.1219(a)(2) as set forth in the National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors (hereinafter, the HWC MACT) at the Facility since May 11, 2010. The underlying statutory and regulatory requirements include provisions of the Clean Air Act (CAA) and the HWC MACT.

Section 113 of the CAA provides you with the opportunity to request a conference with us to discuss the violations alleged in the FOV. This conference will provide you a chance to present information on the identified violations, any efforts you have taken to comply, and the steps you will take to prevent future violations. Please plan for the Facility's technical and management personnel to take part in these discussions. You may have an attorney represent and accompany you at this conference.

Explanation of Violations

The following provides a description of the regulations WTI violated and how WTI violated them:

1. Pursuant to 40 C.F.R. § 63.1219(a)(1)(i)(A), the owner or operator of a hazardous waste incinerator equipped with a waste heat boiler must not discharge or cause combustion gases to be emitted into the atmosphere that contain dioxins and furans in excess of 0.20 nanogram toxic equivalent per dry standard cubic meter, corrected to 7 percent oxygen (ng TEQ/dscm @ 7% O_2).

2. Pursuant to 40 C.F.R. § 63.1219(a)(2), the owner or operator of a hazardous waste incinerator must not discharge or cause combustion gases to be emitted into the atmosphere that contain mercury in excess of 130 micrograms per dry standard cubic meter, corrected to 7 percent oxygen (µg/dscm @ 7% O_2).

3. Pursuant to 40 C.F.R. § 63.1206(a)(1)(ii)(A), the owner or operator of an existing hazardous waste incinerator was required to comply with the emission standards under 40 C.F.R. § 63.1219 and the other requirements of that subpart no later than the compliance date, October 14, 2008, unless the Administrator granted you an extension of time under § 63.6(i) or § 63.1213.

4. Neither EPA nor the Ohio Environmental Protection Agency granted to WTI an extension of time under 40 C.F.R. § 63.6(i) or § 63.1213.

5. The hazardous waste incinerator at the Facility is equipped with a waste heat boiler and is an existing facility within the meaning of the HWC MACT.

6. On March 30 and 31, April 1 and 2, and May 11 and 12, 2010, WTI conducted a comprehensive performance test (CPT) on the hazardous waste incinerator at the Facility as required by 40 C.F.R. § 63.1207.

7. As part of the CPT, on May 11 and 12, 2010, WTI conducted a dioxin/furan performance test using EPA Publication SW–846 Method 0023A. The average dioxin/furan emission concentration during the CPT was 0.518 ng TEQ/dscm @ 7% O_2.

8. As part of the CPT, on May 11, 2010, WTI conducted a metals performance test using Reference Method 29 in 40 C.F.R. 60, Appendix A (RM29). The average mercury emission concentration during the CPT was 290.7 µg/dscm @ 7% O_2.

9. WTI violated 40 C.F.R. § 63.1219(a)(1)(i)(A) on May 11, 2010, and on any date of operation since May 11, 2010, by discharging combustion gases into the atmosphere that contained dioxins and furans in excess of 0.20 ng TEQ/dscm at 7% O_2 from its hazardous waste incinerator at the Facility.

10. WTI violated 40 C.F.R. § 63.1219(a)(2) on May 11, 2010, and on any date of operation since May 11, 2010, by discharging combustion gases into the atmosphere that contained mercury in excess of 130 µg/dscm @ 7% O_2 from its hazardous waste incinerator at the Facility.

Environmental Impact of Violations

11. 2,3,7,8-tetrachlorodibenzo-para-dioxin (2,3,7,8-TCDD) causes chloracne in humans, a severe acne-like condition. It is known to be a developmental toxicant in animals, causing skeletal deformities, kidney defects, and weakened immune responses in the offspring of animals exposed to 2,3,7,8-TCDD during pregnancy. EPA has classified 2,3,7,8-TCDD as a probable human carcinogen (Group B2).

11. Acute exposure to high levels of elemental mercury in humans results in central nervous system (CNS) effects such as tremors, mood changes, and slowed sensory and motor nerve function. Chronic exposure to elemental mercury in humans also affects the CNS, with effects such as erethism (increased excitability), irritability, excessive shyness, and tremors.

6/18/10
Date

Cheryl L. Newton
Director
Air and Radiation Division

CERTIFICATE OF MAILING

I, Loretta Shaffer, certify that I sent a Finding of Violation, No. EPA-5-10-OH-16, by Certified Mail, Return Receipt Requested, to:

Frank Murray
Vice President and General Manager
Heritage-WTI, Inc.
1250 St. George Street
East Liverpool, Ohio 43920-3400

I also certify that I sent copies of the Finding of Violation by first class mail to:

Robert Hodanbosi, Chief
Division of Air Pollution Control
Ohio Environmental Protection Agency
50 West Town Street, Suite 700
Columbus, Ohio 43215

Ed Fasko, Air Pollution Control Supervisor
Northeast District Office
Ohio Environmental Protection Agency
2110 East Aurora Road
Twinsburg, Ohio 44087

on the 18 day of June, 2010.

Loretta Shaffer, Secretary
AECAS, (MN/OH)

CERTIFIED MAIL RECEIPT NUMBER: 7009 1680 0000 7667 4426

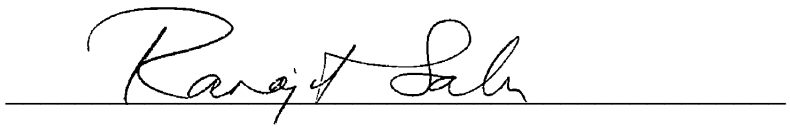
Appendix E

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

Case No. 4:16-CV-1544-BYP
Save Our County, Inc. (Plaintiff) v. Heritage Thermal Services, Inc. (Defendant)

The Honorable Benita Y. Pearson, Judge

AMENDED EXPERT REPORT
OF
DR. RANAJIT (RON) SAHU



ON BEHALF OF THE PLAINTIFF

MARCH 8, 2017

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Information Required by the Federal Rules of Civil Procedure

The following is a list of the items required by the Federal Rules of Civil Procedure:

1. This report contains my opinions, conclusions and the reasons therefore;
2. I do not have any exhibits to be used in summary of, or support for, my opinions with this report other than what is provided with this report and other reports submitted in this action;
3. A statement of my qualifications is contained in Attachment A;
4. A list of publications I authored within the last ten years is shown in Attachment B;
5. My compensation for the preparation of this report and my testimony is included in Attachment C;
6. A statement of my previous testimony within the preceding four years as an expert at trial or by deposition is contained in Attachment D; and
7. The documents cited in the body of this report, as well as the documents in Attachment E, lists the information I considered in forming my opinions.

The opinions expressed in the report are my own and are based on the data and facts available to me at the time of writing. Should additional relevant or pertinent information become available, I reserve the right to supplement the discussion and findings in my report.

I. BACKGROUND AND EXPERIENCE

I, Ranajit Sahu have over twenty eight years of experience in the fields of environmental, mechanical, and chemical engineering including: program and project management services; design and specification of pollution control equipment for a wide range of emissions sources including stationary and mobile sources; soils and groundwater remediation including landfills as remedy; combustion engineering evaluations; energy studies; multimedia environmental regulatory compliance (involving statutes and regulations such as the Federal CAA and its Amendments, Clean Water Act, TSCA, RCRA, CERCLA, SARA, OSHA, NEPA as well as various related state statutes); transportation air quality impact analysis; multimedia compliance audits; multimedia permitting (including air quality NSR/PSD permitting, Title V permitting, NPDES permitting for industrial and storm water discharges, RCRA permitting, etc.), multimedia/multi-pathway human health risk assessments for toxics; air dispersion modeling; and regulatory strategy development and support including negotiation of consent agreements and orders.

I have over twenty five years of project management experience and has successfully managed and executed numerous projects in this time period. This includes basic and applied research projects, design projects, regulatory compliance projects, permitting projects, energy studies, risk assessment projects, and projects involving the communication of environmental data and information to the public.

I have provided consulting services to numerous private sector, public sector and public interest group clients. My major clients over the past twenty five years include various trade associations as well as individual companies such as steel mills, petroleum refineries, cement manufacturers, aerospace companies, power generation facilities, lawn and garden equipment manufacturers, spa manufacturers, chemical distribution facilities, and various entities in the public sector including EPA, the US Dept. of Justice, several states, various agencies such as the California DTSC, various municipalities, etc.). I have performed projects in all 50 states, numerous local jurisdictions and internationally.

In addition to consulting, I have taught numerous courses in several Southern California universities including UCLA (air pollution), UC Riverside (air pollution, process hazard analysis), and Loyola Marymount University (air pollution, risk assessment, hazardous waste management) for the past seventeen years. In this time period, I have also taught at Caltech, my alma mater, at USC (air pollution) and at Cal State Fullerton (transportation and air quality).

I have and continue to provide expert witness services in a number of environmental areas discussed above in both state and Federal courts as well as before administrative bodies.

Additional details regarding my background and experience can be found in my resume provided in Attachment A and in the list of publications and presentations provided in Attachment B. Attachments C and D contain a statement of compensation and my

previous expert witness experience, respectively. Attachment E contains a list of documents considered. Finally, Attachment F contains excerpts of materials in the record that provide a chronology of events which I relied upon in understanding the context of this case.

II. SUMMARY OF OPINIONS

For this proceeding, I have been asked to provide opinions and a report, based on my experience as a consultant and practitioner, that addresses the following:

In relation to Heritage Thermal Services' (hereafter "Heritage") Title V permit limits for NOx and SO2:

1. Did calculating the CEMS data on a rolling one-hour average standard more accurately measure compliance with the hourly standard for NOx and SO2 than the 3-hour block standard? For the reasons discussed in the report, I answer in the affirmative.

2. Are hourly emissions exceedances for NOx and SO2 less discernable when using a 3-hour block standard when compared to a rolling one-hour average standard? For the reasons discussed in the report, I answer in the affirmative.

3. Do short-term exceedances of NOx emissions increase pollutants in the atmosphere where neighboring citizens live and recreate? In my opinion, yes, as discussed in the report.

4. Do short-term exceedances in SO2 emissions increase pollutants in the atmosphere where neighboring citizens live and recreate? In my opinion, yes, as discussed in the report.

In relation to the opacity exceedances:

5. Do exceedances of the short-term opacity standard increase pollutants in the atmosphere where neighboring citizens live and recreate? Opacity increases are often caused by increases in emissions of particulate matter (PM). Thus, as discussed in the report, the answer to this question is most likely yes.

III. OPINIONS AND SUPPORT

In order to provide the proper context for my opinions, I will discuss various aspects of this matter in this and the following sections.

III.1 Facility Details

Heritage Thermal Services (HTS) operates a commercial hazardous waste incinerator along the Ohio River in East Liverpool, Ohio. The hazardous waste incinerator has been in operation for more than 20 years, and incinerates hazardous waste by thermal oxidation in a rotary kiln-based incineration system. The facility is a major source of air emissions operating under a state-issued Title V Permit, and has the potential to emit, among other pollutants, up to 138.94 tons per year of NOx, 49.76 tons per year of SO2, and 106.78 tons per year of carbon monoxide.[1] The facility is located on the bank of the Ohio River at the point where Ohio, West Virginia, and Pennsylvania meet.

Heritage's Title V permit was renewed on December 22, 2008, with an effective of date of January 12, 2009, and an expiration date of January 12, 2014. The permit is currently administratively extended while the Ohio EPA reviews Heritage's timely-submitted renewal application. Thus, without a renewed permit, the terms of the 2008 Title V permit still apply.

III.2 Emissions Limits at Issue

The emissions limitations within Heritage's current Title V permit for SO2 and NOx were established by the Ohio EPA as reflective of the Best Available Technology pursuant to OAC Rule 3745-31-05(A)(3), and require continuous compliance. Heritage is required to submit quarterly Excess Emissions Reports that identify, among other things, the times of excess short-term emissions of SO2 and NOx, which exceed the limits.

Among other limits, Heritage's Title V permit limits NOx emissions from the stack to 28.36 pounds per hour and requires continuous compliance.[2] I have reviewed Quarterly Excess Emission Reports submitted by Heritage in 2011, 2012, 2013, and 2014. These reports indicate numerous exceedances of the 1-hour NOx limit, as detailed in Plaintiff's Notice of Intent to Sue dated November 4, 2015.

Among other limits, Heritage's Title V permit limits SO2 emissions from the stack to 11.34 pounds per hour.[3] I have reviewed Quarterly Excess Emission Reports submitted

[1] Heritage Thermal Services' Title V PTO Application, 0215020233, submitted July 15, 2013, referenced as Appendix A to the Notice of Intent to File a Citizen Suit dated November 4, 2015.

[2] Final Air Pollution Control Title V Permit, Facility ID:021502033, p. 48, referenced as Appendix I to the Notice of Intent to File a Citizen Suit dated November 4, 2015.

[3] Final Air Pollution Control Title V Permit, Facility ID:021502033, p. 48, referenced as Appendix I to the Notice of Intent to File a Citizen Suit dated November 4, 2015.

by Heritage in 2011, 2012, 2013, and 2014. These reports indicate numerous exceedances of the 1-hour NOx limit, as detailed in Plaintiff's Notice of Intent to Sue dated November 4, 2015.

Compliance with above emissions limitations for SO2 and NOx means that Heritage cannot exceed 11.34 pounds per hour and 28.36 pounds per hour, respectively, and it is determined by operation and reporting from Heritage's continuous emissions monitoring systems.

III.3 Continuous Emissions Monitoring Systems (CEMS) at Heritage

Emissions of the concentrations of SO2, NOx, as well as other pollutants in the exhaust gases from the incinerator at Heritage are measured using CEMS.[4] These measurements, coupled with continuous measurements of species like oxygen and the flow rate of the exhaust gases, are combined to calculate the mass emissions of these pollutants. As HTS describes it, pertaining to SO2 and NOx:

> "[T]he CEMS at HTS actually takes readings every 10 seconds. A one-minute average is derived from six readings taken during the minute. One-minute data from process monitors (O2 and flow) are used to calculate the emission rates in the required unit of measure (lb/hr). The one-minute data is used to calculate the one-hour average for each pollutant. This is a mathematical average. There is no extrapolation of data. One-minute average data that is taken during calibration, blowback, and hardware malfunction is not used in the average."[5]

It is important to note that the actual emissions from the source are truly continuous, of course, with variability in the SO2, NOx, (as well as O2, and flow) values. This continuous variability is never captured by conventional CEMS including the CEMS at HTS.[6] Instead, the approach of sampling once every 10 seconds is used, in effect, as a practical compromise. From a purely technical perspective, of course, the CEMS, at its heart, is only capturing, say, 10% of the underlying emissions profile. And, any variability within the 1-minute readings are then smoothed out due to the averaging of the 6, 10-second readings, to arrive at the 1 minute reading. Of course, if the sampling rate were higher, such as a reading every second, then more of the underlying variability

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[4] As Heritage states, "Emissions of SO2, NOx, THC, and Opacity are currently measured by a Continuous Emissions Monitoring System (CEMS) and Continuous Opacity Monitor System (COMS) located at WTI." See Letter dated May 7, 2010 from Heritage to Ohio EPA, HTSDID00000159, p. 1.

[5] See HTS00001722.

[6] There are other, analog, methods of capturing the full spectrum of this continuous record and its variability, such as by a chart recorder, for example. This would however be impractical in the long run and less than useful for further data reduction.

would be captured. In any case, variability of emissions that occurs on time scales smaller than 1 minute, are by definition, not captured by the CEMS at Heritage. I provide this context because, in the correspondence between Ohio EPA and HTS, it is implied that even 1-hour exceedances were "instantaneous," which is a gross mischaracterization.[7] Inarguably, the CEMS simply does not capture the truly instantaneous emissions from Heritage's stack.

As Heritage notes above, the 1-hour mass emissions (i.e., lb/hr) are then calculated using the minute-by-minute data for the pollutant concentration, any diluent (i.e., O2) corrections, and the flow, using presumably standard equations and calculations. In my analysis, I presume that the underlying arithmetic is all correct, a reasonable assumption, since the CEMS are all certified by various agencies. The CEMS system reports these 1-hour values on a minute-by-minute basis. I will use the short-hand "1M (lb/hr)" to refer to these 1-hour calculated values, every minute.

III.4 Variability and Averaging

The central issue in this matter is how the number of exceedances that need to be reported (which can then be potentially deemed to be violations) changes when the reporting scheme changes from 1-hour average (as discussed earlier, and how Heritage was reporting prior to the fourth quarter of 2014) to a 3-hour block average (which it has been using since the fourth quarter of 2014, based on a letter from Ohio EPA dated December 23, 2014), even though its Title V permit does not reflect any changes in reporting method.

A change in exceedance reporting by expanding the hours over which measured emissions are averaged (i.e., from 1-hour to 3-hours), while leaving the numerical value of the limit the same, in effect, smooths out and hides instances when the same numerical limit would have been exceeded had the shorter averaging period been used. The longer the averaging period, the lower the stringency, if the numerical value of the limit is unchanged – thus, for a given measurement profile, a 3-hour average is less stringent than a 1-hour average; a 24-hour average is less stringent than the 3-hour average, etc. Since we are concerned here with the 1-hour and 3-hour averages, I will focus on just those hence forth.

The degree to which the reporting stringency is reduced by using a longer averaging period depends on the variability of the underlying emissions measurements, which, in turn, reflect the variability in the generation (and manner of control prior to the stack, as applicable) of the pollutant emissions, namely, SO2 and NOx. For example, in an extreme case, if the underlying emissions measurements are completely constant, then the averaging period has no effect, of course. It is therefore important to understand the

[7] See HTS00001986.

underlying variability of emissions from the source and how such variability may or may not have changed – especially before and after the reporting change.

SO2 Emissions Variability

Emissions from actual sources are never constant in time and vary based on many underlying process factors.

SO2 generation from combustion processes, such as the incinerator at Heritage, depend mainly on the sulfur content of the waste that is being burned in the incinerator. Since waste composition, including the sulfur content of the waste is never constant and highly variable, SO2 emissions generated in the incinerator are correspondingly variable. While the scrubber can modulate and reduce some of the variability of SO2 emissions generated in the incinerator, operating parameters of the scrubber itself can and do vary with time, leading to variable scrubber-outlet emissions. Thus, given the source, SO2 emissions should be expected to be highly variable with time; therefore, making stringency strongly dependent on the averaging time. Heritage's own analysis of its SO2 emissions (and its options to reduce such emissions) touches upon all of these issues:

> "The waste feed mixture at WTI consistently contains relatively high levels of sulfur. Sulfur contained in waste feeds becomes SO2 when combusted. WTI removes SO2 from the flue gas in the third stage (second packed bed) of the four-stage scrubber. The second packed bed consists of plastic packing at a depth of 2.9 meters. Re-circulated water passes over the packing material and uses the extensive surface area of the packing to scrub SO2 from the flue gas. Sodium hydroxide is added to maintain a pH that is conducive to SO2 removal. The scrubbed SO2 becomes a salt that is re-circulated with the scrubber liquor through the Spray Dryer where it is dried and eventually removed by the Electrostatic Precipitator (ESP). This process can become less efficient if solid materials collect on the packing and reduce the surface area. Certain waste materials commonly fed at WTI can cause solid build-up in the scrubber. An increase in SO2 emissions and an increase in differential pressure measurement in the scrubber often indicate solid build-up. When this occurs, WTI can take several courses of action.
>
> The first course of action that a control room operator takes when an exceedance of the facility's short-term SO2 limit occurs is to reduce waste feeds. Since SO2 emissions are typically the direct result of sulfur feeds to the incinerator, the most logical corrective action is to decrease the feed rate of sulfur-bearing materials. Unfortunately, a reduction in sulfur feed does not always lead to an immediate reduction in SO2 emissions and other action may be necessary.

> A second alternative for limiting SO2 emissions is to halt waste feeds operations and flush the scrubber with fresh water. Flushing the scrubber works to remove the sulfur containing liquor from the unit and also can help to remove solid build-up on the packing material.
>
> A third option that may be used when other actions have not fully succeeded is to perform an acid wash of the scrubber. An acid wash involves flushing the scrubber with a purchased acid solution for the purpose of cleansing the system of solid build-up. As stated previously, solid build-up in the scrubber can reduce operational efficiency. Regrettably, an acid wash cannot be performed while the incinerator is online and a partial shutdown is necessary. It takes several hours to complete an acid wash. WTI utilizes this measure only when other options have failed to achieve the desired results.
>
> The final course of action that WTI takes to address scrubber inefficiency is to replace the scrubber packing material. When solid build-up on the packing is severe and cannot be corrected by any of the alternatives described above, WTI will remove the damaged packing and replace it with new material. This action requires a complete shutdown and cool-down of the incineration system. The loss of revenue due to the shutdown and the cost of the replacement packing make this an action of last resort."[8]

In their Notice to Sue, Plaintiff provides an example[9] of how strongly averaging time affects the number of exceedances and I agree with the underlying analysis.

I have used the minute-by-minute SO2 data provided by Heritage in this matter to analyze whether or how underlying SO2 emissions and variability for the incinerator. I used data for 2014, 2015 and 2016 to conduct my analysis – i.e., data collected before and after the reporting change that occurred in the fourth quarter of 2014, and including data through 2016. I wanted to determine if the reduction of the number of exceedances reported since 2015 could have been due to a lowering of the actual SO2 emissions or its variability. As noted earlier, the smallest time-scale data available is the minute-by-minute data, so I used that data set. Below, I show three plot of the monthly mean values,

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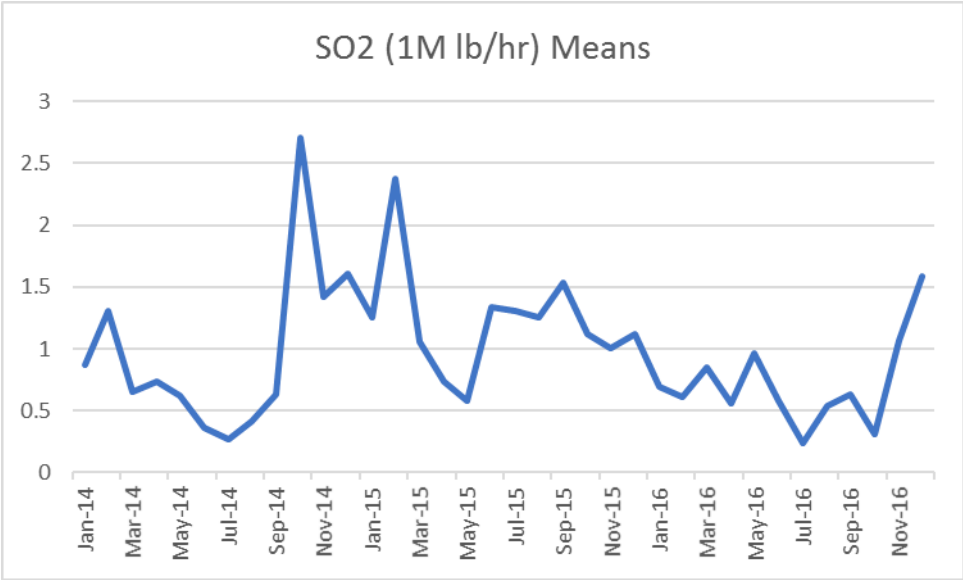
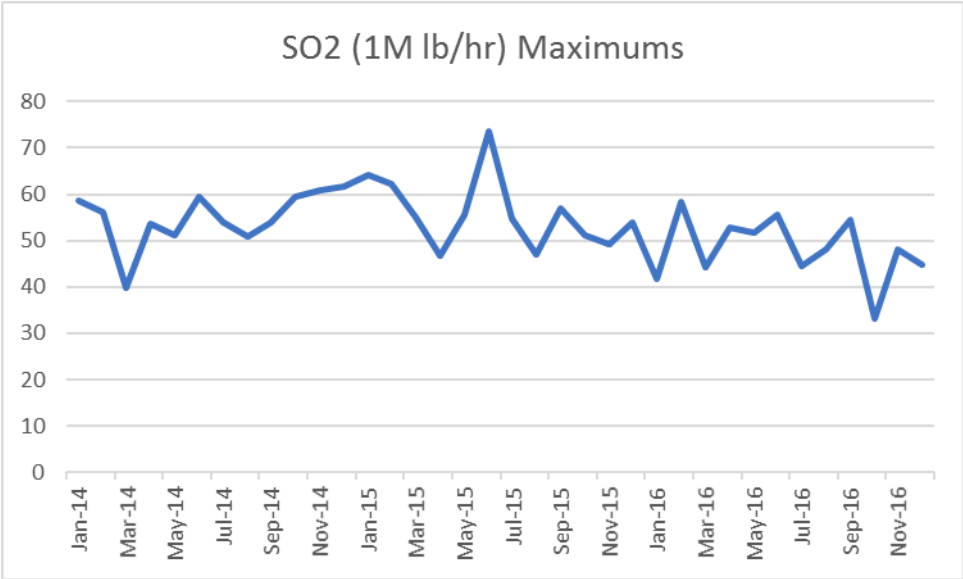
[8] Letter dated December 1, 2009 from Heritage to Ohio EPA, HTSDID00000157, p. 1-2. Identical language is provided in a letter dated December 2, 2011 from Heritage to Ohio EPA, HTSDID00000165, p. 2.

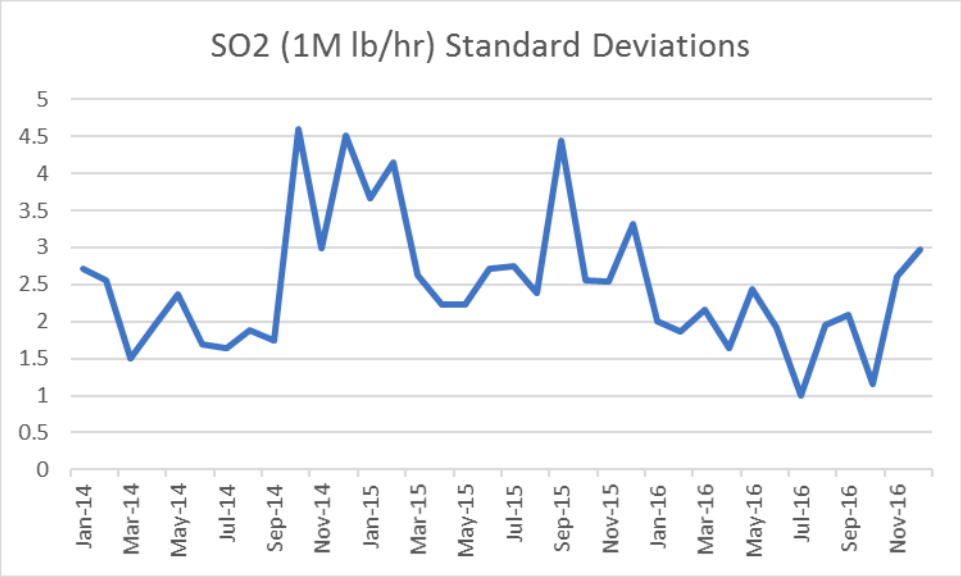
[9] "For instance, Heritage submitted a report to Ohio EPA containing three-hour block averages of Continuous Emissions Monitoring results for SO2 for a period covering January 1, 2013 through December 31, 2014, and the data showed that, under this vastly different reporting scheme, there was only one exceedance of the SO2 limit. However, as is evidenced in this Notice, Heritage actually exceeded their short-term hourly emission limitation for SO2 approximately 23 times during that same period."

monthly maximum values, and monthly standard deviations of the minute-by-minute SO2 data from 2014-2016.[10] I excluded all non-numeric data in my analysis.





[10] Data from HTS00010774 (2014 SO2), HTS00010775 (2015 SO2), and HTS00010776 (2016 SO2).



It is clear from the charts above that SO2 emissions are similar across the entire timeline, with perhaps a slight downward trend in the monthly maximums – although the maximum values are all considerably greater than the permit limit of 11.34 lb/hr. The mean values for SO2 as well as its variability do not show any discernable trends over this 3-year period; a recent uptick in the mean as well as standard deviations is clearly noted. The variability of the data is plain to see in the plots of the monthly means and monthly maxima in the charts above and confirmed by the standard deviation chart. I have also reviewed the 1-hour rolling SO2 CEMS data (lb/hr) provided by Heritage and estimated the number of exceedances of the hourly limit for SO2 using the 1-hour rolling calculation method. For 2015 my calculations show almost a thousand such exceedance periods and to 2016 my calculations show almost one hundred such exceedance periods. Since hundreds and thousands of exceedances have not been reported by Heritage in 2015-2016, the dramatic reduction in the number of reported SO2 exceedances is imply due to the change in the exceedance reporting method (i.e., from 1-hour rolling to 3-hour block).

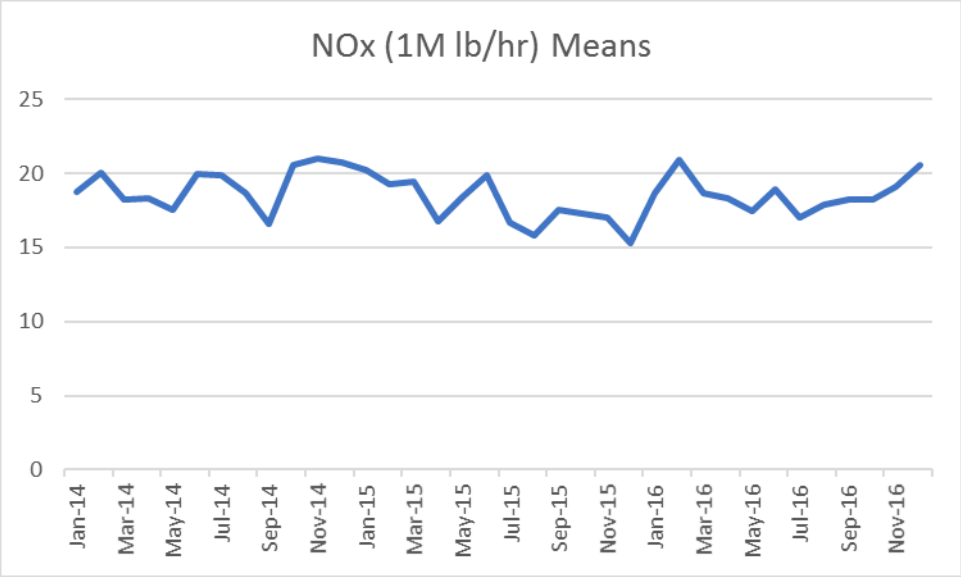
NOx Emissions Variability

NOx emissions generation rates in an incinerator can be even more variable than SO2 emissions since they depend, not only on the nitrogen content of the waste (fuel) but also on combustion conditions, in particular the oxygen content and temperatures in the flame regions. Since there are no further NOx controls, variability in NOx generation substantially affects variability in NOx generation. Thus, NOx emissions, to an even greater degree, are affected by the averaging time period. This is confirmed by Heritage's own statements:

> "Excess emissions of NOx from the incineration system are a function of the nitrogen content of the waste materials being incinerated and the

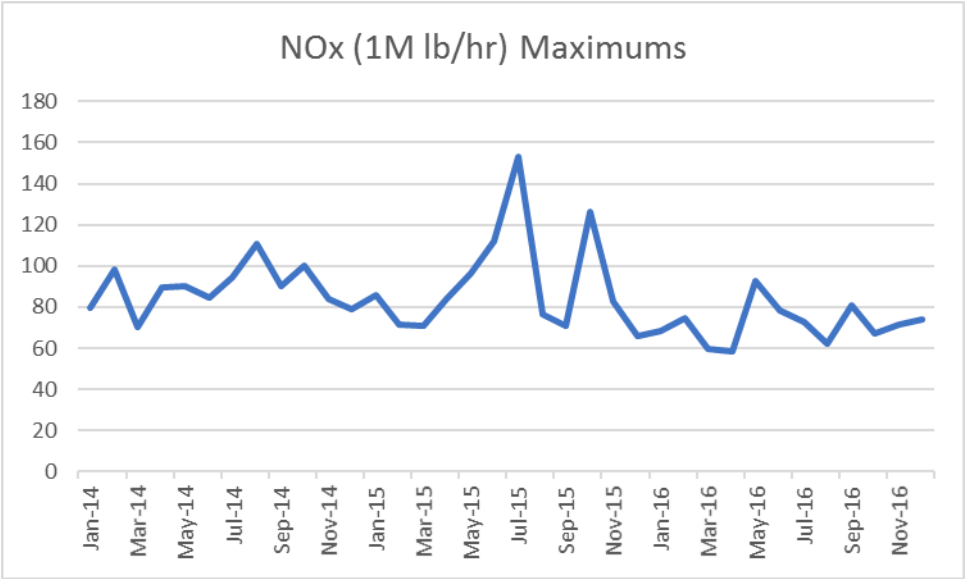
conditions in the combustion zone. Unlike other pollutants, such as SO2, NOx emissions are not affected by scrubber operation or other parts of the pollution control system. At times of high NOx emissions, control room managers and operators take steps to identify the waste stream or streams that are contributing to the NOx emissions. When a determination is able to be made, the feed rate of the waste stream or streams causing the problem is reduced or suspended and alternate processing options are evaluated. These may include the repackaging of the material into more suitable charge sizes or feeding through a different mechanism. WTI has discovered that nitrogen bearing materials when fed to the incinerator as a liquid may produce less NOx when charged to the unit through different feed lances. If the waste stream that is causing the excess emissions is an ongoing project or large quantity that cannot be processed without exceeding the limit, then that waste stream will no longer be received for incineration."[11]

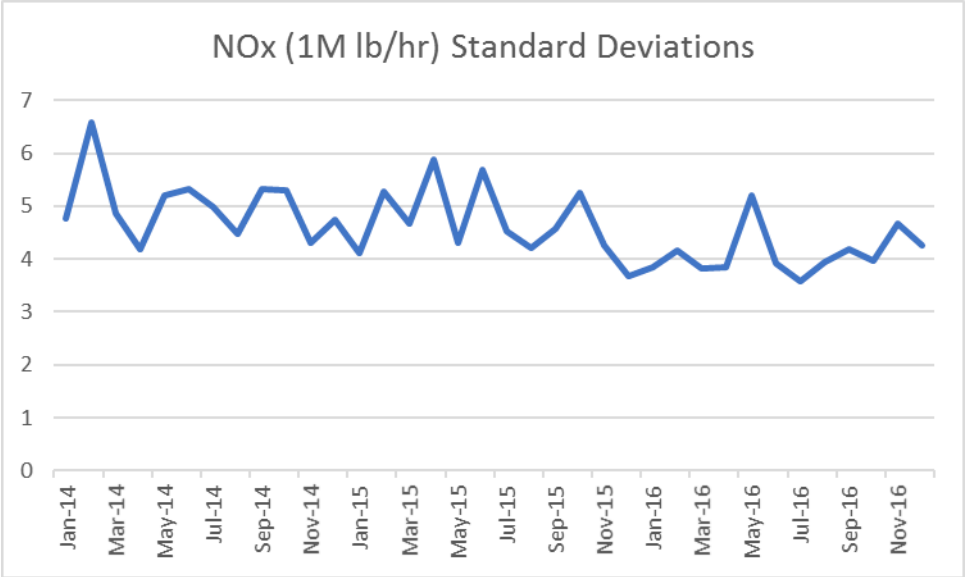
Similar to my analysis of the actual SO2 data from the incinerator discussed above, I show the NOx emissions data[12] (the monthly means, the monthly maximums, and the monthly standard deviations) in the charts below, for the 2014-2016 time period.



[11] HTSDID00000165, p. 3.

[12] Data taken from HTS00010750 (2014 NOx), HTS00010751 (2015 NOx), and HTS00010752 (2016 NOx).





The NOx monthly means show no trends across the 2014-2016 time period. While there is a slight downward trend (i.e., improvement) of the maximums and the standard deviation in the NOx emissions over the 2014-2016 time period, the NOx data, like SO2, still show substantial similarity across this entire three year period in my opinion. The NOx monthly maximum values are significantly higher than the permit limit of 28.36 lb/hr. I have also reviewed the 1-hour rolling NOx CEMS data (lb/hr) provided by Heritage and estimated the number of exceedances of the hourly limit for NOx using the 1-hour rolling calculation method. For 2015 my calculations show well over a thousand such exceedance periods and to 2016 my calculations show almost two hundred such exceedance periods. Since hundreds and thousands of exceedances have not been reported by Heritage in 2015-2016, the dramatic reduction in the number of reported

NOx exceedances is imply due to the change in the exceedance reporting method (i.e., from 1-hour rolling to 3-hour block).

III.5 Rolling and Block Averages

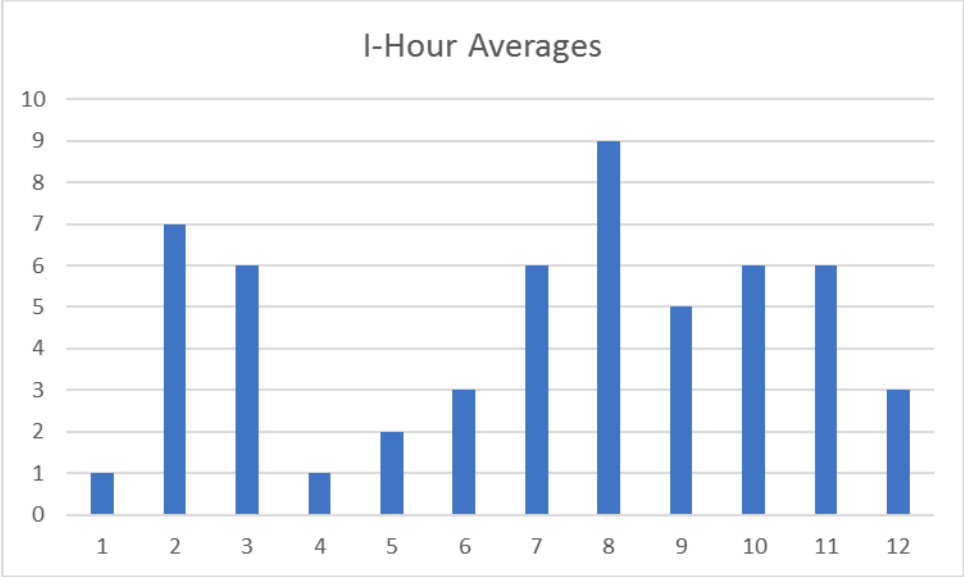
Earlier, I alluded to the central issue in this case as being the change in how underlying emissions collected by the CEMS system are being processed (i.e., instead of the previous 1-hour average to the current 3-hour block average) in order to determine if the same, unchanged, hourly permit limits for SO2 and NOx are being exceeded or not. In this section, I will discuss the meaning of rolling or running and block averages. To do so, I will use an illustrative example.

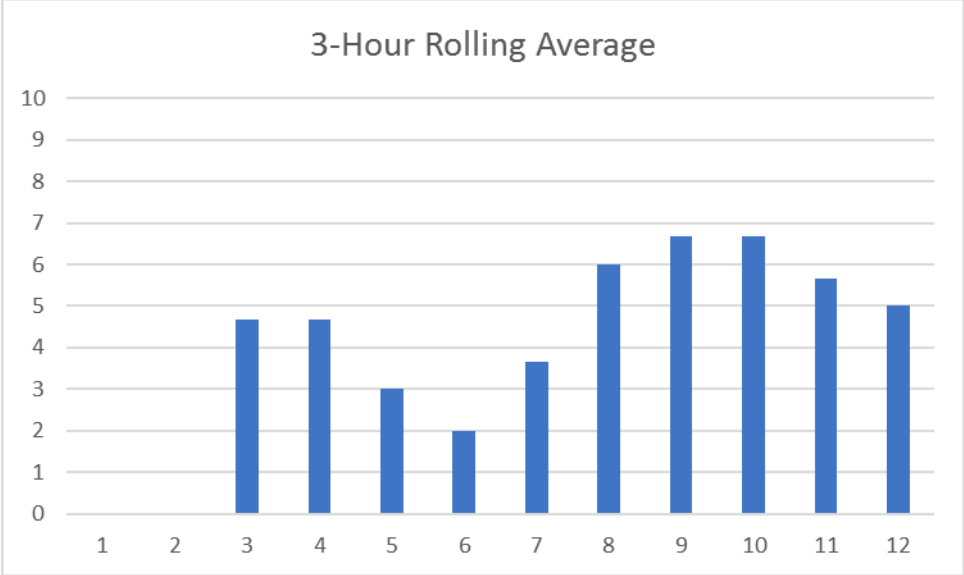
The column labeled "1-Hour Average" in the Table below shows the hourly emissions in pounds of an unspecified pollutant (for this example, just to keep the discussion simple, we will imagine that the underlying measurement technique provides just a single measurement, representative of emissions from the source) for the entire preceding hour. It shows the emissions for the prior 12 hours. For illustrative purposes, the emission limit is assumed to be 5 pounds per hour.

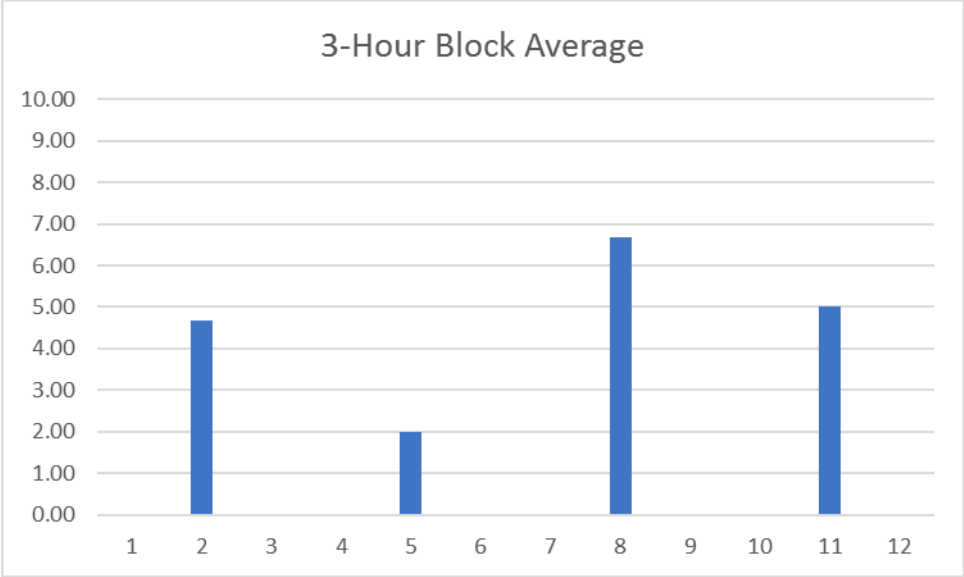
Hour #	1-Hour Value	Hour #	3-Hour Rolling Average	Hour #	3-Hour Block Average
1	1	1		1	
2	7	2		2	4.67
3	6	3	4.67	3	
4	1	4	4.67	4	
5	2	5	3.00	5	2.00
6	3	6	2.00	6	
7	6	7	3.67	7	
8	9	8	6.00	8	6.67
9	5	9	6.67	9	
10	6	10	6.67	10	
11	6	11	5.67	11	5.00
12	3	12	5.00	12	

Note: Values in red represent exceedances of the assumed 5 lb/hr limit in this example.

I also present the data in the charts below.


I-Hour Averages
10
9
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
12


3-Hour Rolling Average
10
9
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
12



As the 1-Hour data in the table above show, the permit limit is exceeded in Hours # 2, 3, 7, 8, 10, and 11 – i.e., a total of 6 exceedances of the permit limit when the exceedances are reported on a 1-hour basis.

Next, the table above shows the 3-hour rolling average, using the same 1-hour data, for each of the hours 3 through 12. In each case, the 3-hour rolling average is computed by averaging the emissions for the give hour and 2 previous hours. Thus, the 3-hour rolling average for hour 10 is the average of the hourly data for hours 10, 9, and 8 – i.e., the average of 6,5, and 9, which is 6.67 pounds. Since prior data are not available before hour 1 in the example, the 3-hour rolling average is not shown for hours 1 and 2. This is called a rolling (or running) average simply because the 3-hour average is computed for each hour. The effect of the multi-hour averaging is clear: the averaging smooths out the variability in the underlying data. This means that the very high and very low values do not appear in the 3-hour average. For example, the 3-hour average for hour 10 in my example above is 6.67 but the underlying value of 9 is smoothed out. From a compliance standpoint, using the numerical limit of 5 pound in the example, that is exceeded for hours 8, 9, 10, and 11. Thus, whereas there were 6 exceedances of the 5-pound limit using the hourly average, there are only 4 such exceedances using the 3-hour rolling average data – illustrating the effect of the smoothing (and consequent "shaving" off the high values) due to averaging.

Finally, the table shows the 3-hour block average in the very last column. The concept is fairly straightforward. The underlying hourly data are divided into non-overlapping "blocks" – here in my example, since I am using 3-hour blocks, there are four such blocks covering the underlying 12 hours. Then, an average is calculated for each block of 3-data using the underlying hourly data. The main effect of using block versus rolling averages (for the same 3-hour averaging period, in the example), is that there are simply far fewer blocks. Thus, reducing the number of blocks will naturally reducing the

chances of reporting exceedances since there are fewer candidate blocks in which exceedances may occur. In my example, there is only 1 exceedance of the 5-pound limit, which occurs during the hours 7-9 block.

Thus, the overall effect of going from the underlying 1-hour data to the 3-hour block averaged data, in terms of reporting exceedances is clear. First, whereas there would have been 6 exceedances reported using the hourly data, there would be only 1 exceedance reported using the 3-hour block data – a dramatic reduction in reported exceedances. Second, the magnitude of the reported exceedance is also lower due to the smoothing accorded by averaging. The reported 3-hour block average exceedance is 6.67, which is around 33% greater than the limit of 5. However, in the underlying data, there were 2 hours (hour 2 with a value of 7; and hour 8 with a value of 9), where the exceedances, had they been reported on an hourly basis, would have been much greater. For hour 8, the value of 9 is 80% higher than the limit. The 3-hour block average therefore serves to "hide" these underlying larger exceedances.

IV. REASONS FOR THE CHANGE IN THE METHOD OF REPORTING EXCEEDANCES

The change in reporting exceedances that occurred at Heritage is completely analogous to the example above.[13] And, as discussed earlier, since the underlying emissions themselves have not reduced or have shown much reduction in variability, the number of reported exceedances can only be due to the change in the method of how such exceedances are calculated. Thus, Heritage sought to mask or hide the number of exceedances it needed to report and to then have to deal with the consequences of these exceedances being deemed violations. Faced with the numerous exceedances of its hourly NOx and SO2 limits, it appears that Heritage requested the Ohio EPA to allow them submit their monitoring data as three-hour block averages, instead of the required one-hour average.[14]

As my example above shows, such a change would allow Heritage to smooth out or hide the spikes that cause Heritage to report exceedances against their hourly emissions standards. In effect, averaging measurements over the longer, 3-hour period instead of the shorter, 1-hour period, while keeping the numerical value of the limit the same, relaxes the stringency of the reporting obligation – i.e., fewer exceedances would need to be reported. It is my understanding that while a revised Title V permit for the facility has not been issued, Heritage has switched its exceedance reporting from the 1-hour average basis (still in effect as part of its current Title V permit which remains in effect until a revised permit is issued) to the 3-hour reporting basis. Predictably far fewer exceedances of SO2 and NOx have been reported by Heritage beginning from the Fourth Quarter 2014 and through 2015 and 2016.

The record is quite clear as to why the manner in which exceedances were reported was changed from the hourly to the 3-hour block method. Simply, Heritage was faced with responding to numerous Notices of Violation (NOVs) during the 2009-2011 time frame alleging violations of the 1-hour SO2 and NOx standard. Instead of undertaking steps to actually reduce emissions (such as by better pollution controls, for example as well as by using the options previously identified by Heritage itself as I have quoted earlier), Heritage opted to cure the past exceedances and potential future exceedances by changing the reporting method.

[13] In Attachment F to my report, I have excerpted portions of key documents in the record that I reviewed and relied upon to understand the context and chronology of events that led to the change in the exceedance reporting method that is at the heart of this case.

[14] Letter from Heritage to Ohio EPA, Status Update: SO2 and NOx, dated August 4,2014, at 1, referenced as Appendix K to the Notice of Intent to File a Citizen Suit dated November 4, 2015.

V. IMPLICATIONS

I next address the implications of the change in method of exceedance reporting.

First, as noted above, the change in the method of reporting exceedances at Heritage is simply misleading. An uncritical observer, such as a member of the public, might reasonably conclude, given the fewer (and smaller in magnitude) exceedances that are now being reported by Heritage as opposed to previously – that something fundamental has changed for the better vis-à-vis emissions of SO2 and NOx at the facility. But, as discussed earlier, since the reduction in the frequency and magnitude of the reported exceedances on the 3-hour block basis did not change the underlying data itself and its variability, it simply leaves a misleading impression that fewer emissions are being emitted. In fact, as my analysis of the 2014 and 2015 data above show, nothing really has changed in the underlying emissions profile of these emissions (perhaps a slight reduction in NOx emissions and some increases in SO2 emissions).

Second, by smoothing out the spikes[15] of emissions of NOx and SO2 (which in turn cause the exceedances) due to the 3-hour averaging, Heritage can now pretend and obfuscate the fact that such spikes do not occur. And, by such obfuscation, it then does not have to deal with the consequences of many such exceedances, which it was dealing with before the reporting change was implemented in late 2014. Increased emissions that are the cause of the exceedances have real, adverse impacts since ambient concentrations of pollutants such as SO2 and NOx increase when emissions increase unless weather conditions (i.e., conditions that promote higher levels of dispersion such as high wind speeds, more variable winds, unstable atmospheric conditions) fortuitously dilute such increased emissions – which cannot be relied upon since weather conditions are clearly not controllable. Of course, higher concentrations mean higher risk for everyone who has to breathe the air or be affected by it.[16]

Curiously, I note that in the present instance, the impacts of such exceedances and the corresponding higher concentrations in the surrounding communities have not been quantitatively confirmed since no air dispersion modeling was done as part of this

[15] I do not mean to imply that "spikes" are only for very short durations. The record contains examples when excess emissions occurred for hours.

[16] I also want to note that while I am confident that higher emissions such as during exceedance events cause higher concentrations and therefore increase risk to exposed receptors, I do not imply that not having exceedances means that the resultant concentrations when actual emissions are at or below the permit limits are necessarily safe. There is no support in the record that the existing hourly SO2 and NOx limits were arrived at so as to be protective of human health and the environment. In fact, the record makes it clear that neither Ohio EPA nor Heritage knew how the hourly limits were set. In an e-mail dated June 24, 2013, in response to Heritage questions: "Where did the current NOx/SOx limits come from? Risk Assessment based? Air quality standards based?" the Ohio EPA responds: "In order to check on this, I will need to (or someone will need to) go through the original PTI application and calculation sheets in hopes of identifying the basis for these emission levels. At this time, I do not have the time to conduct the research, perhaps WTI has information in their files on this. If time becomes available, I will look into this." (See HTS00001960.)

reporting change,[17] even though such modeling was initially contemplated as part of using the 3-hour block average when it was first discussed. The very fact that Ohio EPA initially wanted Heritage to demonstrate that the 3-hour block average scheme would still comply with ambient air standards via modeling[18] is itself proof of expected emissions increases as a result of using the 3-hour block average. As I have discussed in my analysis earlier, emissions increases can and should be expected from this change in the exceedance reporting method, which is a clear relaxation of the existing reporting method. And, it is therefore completely baffling that no modeling was eventually required[19] to support the 3-hour block average when Ohio EPA disingenuously invited and allowed Heritage to use the scheme for exceedance reporting.

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[17] In fact, no modeling has been done for NOx and SO2 since 1993 per the following statement by Heritage:

> "…Unfortunately, our discussion did not result in definitive answers to your questions regarding limits and averaging periods for SO2 and NOx emissions. The reason for this is the answer to your other question about modeling. WTI has **not (emphasis in original)** performed any modeling that has looked at longer averaging periods and increased limits. The most recent modeling for SO2 and NOx performed at WTI appears to have taken place around 1993. I can say that WTI does plan to make a request to increase the current averaging periods for both SO2 and NOx from a rolling 1-hour average to **at least (emphasis in original)** a rolling 3-hour average. In order to make a more informed proposal, we have initiated contact with air modeling consultants to look more closely at these emissions and potential changes. It is our hope, to conduct this modeling within the next 30 days and provide you with our findings shortly after completion. Please let me know if OEPA has any questions or special requests in regards to this planned proposal or the upcoming modeling." (from e-mail dated March 2, 2012, See HTS00001972.)

I note that at this stage, Heritage wanted the longer 3-hour average but it was thinking of a rolling average and not a block average, which was eventually agreed to by the letter from Ohio EPA.

[18] On February 24, 2012, Ohio EPA asked Heritage:

> "[A]ssuming that WTI is still interested in averaging NOx and SOx emissions over a specific period of time, please provide what emission levels and what averaging times WTI is considering. Additionally, has any modeling been performed on NOx and SOx emissions from WTI?" (See HTS00001986.)

[19] In late 2014, Heritage inquired of Ohio EPA as to why its modeling consultant was unable to get in touch with Ohio EPA's modeling staff:

> "I just checked in with the contractor that is working on our air modeling project for the NOx and SO2 limit modification. He is still waiting to be contacted by Ohio EPA about his requested guidance on the modeling." (See HTS00002822.)

The response from Ohio EPA on December 12, 2014 was cryptic:

> "There is an internal (NEDO [North East District Office] and CO [Central Office]) ongoing discussion about how HTS is to demonstrate compliance with the limit. There are competing schools of thought. Once one of the schools of thought wins out over the other, the modeling question and the emissions issues should "fall-out". (See HTS00002822.).

In short, the 3-hour block average exceedance reporting scheme does not change the underlying emissions profile from the incinerator and the many exceedances that were and are occurring on a 1-hour basis; it simply, on paper, averages out and therefore smooths out the emissions profile to reduce the frequency and the magnitude of the exceedances so fewer of them have to be reported. It allows Heritage to show far fewer exceedances without having to actually reduce emissions, while leaving the impression that, in fact, such emissions reductions may have occurred thereby reducing risk of the impact of emissions from the incinerator on the surrounding community. And, it reduces the enforcement risk that Heritage would otherwise face in having to deal with many exceedances and violations. It is, all in all, a cynical approach to making a problem go away on paper, without doing anything to deal with the problem itself.

Shortly thereafter, on December 23, 2014, Ohio EPA sent Heritage a letter inviting it to use the 3-hour block averaging scheme. (See HTSDID00000166.)

VI. OPACITY AND PARTICULATE MATTER EMISSIONS

The Plaintiff has asked me to provide an opinion relating to opacity and PM emissions – namely whether PM emissions (which have several National Ambient Air Quality Standards, NAAQS since they are known to cause adverse health impacts, depending on particle size and other factors) can increase if opacity exceedances occur. It is my opinion that higher opacity is likely caused by higher PM emissions, which in turn can cause higher PM concentrations in the surrounding air, with adverse health impacts to those in the vicinity.

Opacity, in simple terms, is the degree to which the plume exiting the stack is obscured – *i.e.*, it is based on how clear or how opaque a plume is as it exits the stack. The reason the plume is obscured, and therefore manifested as opacity, is the presence of PM in the exhaust gases. Thus, as will be explained in this section, PM and opacity go hand in hand. As EPA stated:

"Opacity is a measure of the extent to which the particulate matter emissions reduce the ambient light passing through the plume as indicated in Figure 1-4.

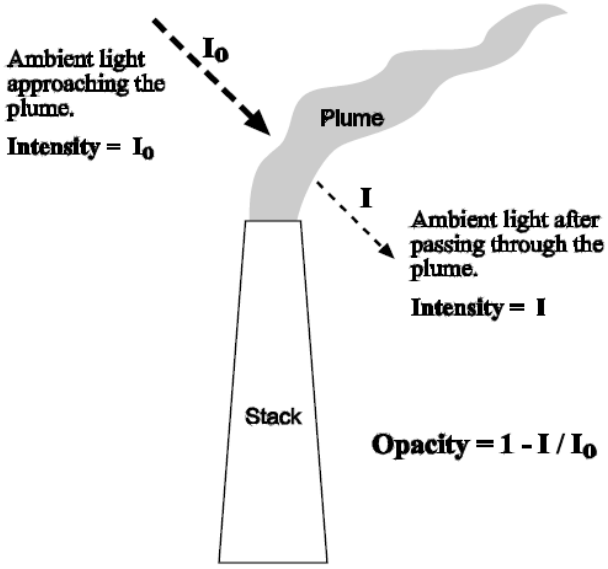

Figure 1-4. Opacity of a plume emitted from a stationary source

Opacity is a convenient indirect indicator of particulate matter emissions…."[20]

It is well known that, in general, higher opacity values correlate with higher PM emissions. While the exact relationship between opacity and PM is affected by several factors including the size of the PM, its chemical composition, etc. and it is not universal

[20] EPA, Control of Particulate Matter Emissions, Student Manual, APTI Course 413, Third Edition, January 2000. Available at www.4cleanair.org/APTI/413Combined.pdf.

(i.e., it varies from source to source), there is no question that more mass of PM emissions, will, in general manifest itself as higher opacity and vice versa. This is true at all combustion sources, such as power plants, cement kilns, incinerators, etc.

The very basis for opacity measurements (*i.e*., by light scattering by particles) relies on the presence of PM, which then causes opacity. Opacity is thus intrinsically correlated with PM. Additionally, as discussed below, the assumed correlation between opacity and PM underpins many regulatory schemes.

The presence of a significant correlation between opacity and PM mass does not mean that there is a one hundred percent correlation – *i.e.,* a universal quantitative relationship – between the two at any given site. Opacity does depend on several factors that may preclude a one hundred percent correlation, including particle size distribution, chemical composition, and the possible presence of water vapor. That general proposition, however, does not by itself mean that there is no reliable relationship between PM and opacity either at a given source stack or more generally speaking. Certainly, case-specific analysis can inform the degree to which various factors impact the degree of correlation.

The significant correlation between opacity and PM has long been recognized by regulatory bodies, both federal and state. These authorities use opacity as a tool to assess and regulate PM emissions precisely because that correlation exists. A few examples follow.

In its Compliance Assurance Monitoring (CAM) protocol for an ESP controlling PM from a coal-fired boiler, EPA notes that "….opacity, a commonly used parameter, can indicate [electrostatic precipitator ("ESP")] performance. If the opacity is increasing, you can reasonably assume that PM emissions are increasing…"[21] EPA echoes that same concept in other documents. For example, EPA states that "opacity is used as a surrogate for PM emissions and provides qualitative information on the operation and maintenance of particulate control equipment."[22] Discussing prior studies, EPA, in this same report notes that "Conner (1974) showed mass concentration versus opacity for a kraft pulp mill recovery furnace, a cement plant kiln, and a coal-fired boiler. The concentration versus opacity graphs showed that a strong linear relationship existed between mass concentration and opacity at those three sources."[23]

[21] EPA CAM Technical Guidance, CAM Protocol for an ESP Controlling PM from a Coal-Fired Boiler, p. 3. available at http://www.epa.gov/ttn/emc/cam.html (emphasis added).

[22] Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring, EPA-4S4/R-OO-039, September 2000, p. ix (emphasis added).

[23] Ibid, p. 2-3 (emphasis added).