MARYLAND DEPARTMENT OF THE ENVIRONMENT
RESPONSE TO COMMENTS
FOR THE
FREDERICK /CARROLL COUNTY RENEWABLE WASTE-TO-ENERGY FACILITY
PERMIT APPLICATION HEARINGS/COMMENT PERIODS

Dates and Location: First hearing, water discharge permit application only
August 22, 2012
C. Burr Artz Public Library
110 E. Patrick St., Frederick, MD 21701

Second hearing, all permit applications
January 30, 2013
Tuscarora High School Auditorium
5312 Ballenger Creek Pike, Frederick, Maryland 21703

Purpose of the Hearings: The purpose of the public hearings was to receive comment on the Department's Tentative Determinations for the following state permits and approvals related to the construction and operation of the proposed Frederick/Carroll County Renewable Waste-To-Energy Facility (FCCRWTE) to be located at 4549 Metropolitan Ct., McKinney Industrial Park, Frederick, Frederick County, MD 21701:

- Air Quality Permit-to-Construct, Non-Attainment New Source Review (NA-NSR) Approval, and Prevention of Significant Deterioration (PSD) Approval
- NPDES/State Discharge Permit
- Refuse Disposal Permit (including Scrap Tire Acceptance)

The public was provided the opportunity to present oral and written comments at both public hearings and to submit written comments from December 20, 2012 through May 20, 2013 on all of the above mentioned permits and approvals.

Tentative Determinations: The Department's Tentative Determination for the air related permit/approvals concluded that the emissions from two, 750 ton per day mass burn municipal waste combustors would meet all applicable regulatory requirements and the permit/approvals should, therefore, be issued.

The Department's Tentative Determination for the water discharge permits concluded that the discharge of variable amounts of stormwater to the Monocacy River and an average of 400,000 gallons per day of cooling water blowdown from the proposed waste-to-energy facility to be discharged to the Potomac River would meet all applicable regulatory requirements and the permits should, therefore, be issued.

The Department's Tentative Determination for the Refuse Disposal Permit concluded that the solid waste handling elements of the proposed waste-to-energy facility (tipping bay; refuse storage pit; biosolids, ash & metal recovery; and the warehouse, maintenance, and administration buildings) would meet all applicable requirements and a permit should therefore be issued.

Comment Information: The Department received written comments from over 1800 individuals and several organizations during the public comment period. Also, numerous oral comments were made at the two public hearings by the nearly 100 people who testified.

There were a number of comments that were beyond the scope of any specific permit or approval under consideration. The Department contacted Frederick County, Wheelabrator (WTI) and the Northeast Maryland Waste Disposal Authority (NMWDA) to obtain information regarding some of these comments, and provided responses based on the information provided in this Response to Comment document.

The Department's responses to all non-media specific comments and those of a general nature are provided immediately below. Responses to the media-specific permits and approvals are presented later in this document in separate sections specific to each medium – air, water and land.

SECTION I
Responses to comments of a general nature or comments that are non-media specific

Comment 1 - Impact on property values

"Degradation of property values: Who wants to live next to an incinerator or operate a business nearby?
"Potential declining property value concerns with regard to neighborhoods and businesses in the general vicinity of the incinerator."

Response

The Department does not have the authority to specify where a source may be located nor base its review of the permit application on land use concerns and possible economic impacts on the local economy. The Department's review is limited to the effect that a project may have on the environment and public health. The physical location of any facility and the effect that facility may have on property values is a local land use consideration and is managed through local zoning and land use laws.

Comment 2 - The project's effect on the historical significance of the Monocacy National Battlefield

"Construction of the proposed waste-to-energy trash incinerator, only a few hundred feet from the park boundary, will have an immediate and irreversible impact on the historic and natural qualities that the battlefield preserves. Historic views will be marred by a multistory building and a massive smokestack, which will dominate views from every corner of the battlefield."
"In 2014 it will be the 150th anniversary of the Battle of Monocacy. Frederick County is going to get an influx of tourists. Why would you want to scare them away with this monstrosity at the edge of the battlefield?"
"I am also concerned that the proposed WTE atrocity will ruin the view-shed of the Monocacy National Battlefield."

Response

The Department appreciates the National Park Service's (NPS) and citizens' concerns and recognizes the importance of protecting the Monocacy National Battlefield as a valuable part of Maryland's history. This issue, however, is similar to that of property values, in that the Department has no regulatory authority to consider a project's impact on the historical or cultural significance of the battlefield when considering whether to issue environmental permits. Our regulatory authority is confined to addressing matters involving protection of public health and the natural environment.

With respect to air quality impacts, however, while federal regulations pertaining to air quality do not directly address aesthetic impacts associated with a project, an Air Quality Related Values (AQRV) assessment of the project on Class I areas (national parks larger than 6,000 acres and national wilderness areas larger than 5,000 acres that were in existence on August 7, 1977) and Class II areas (see below) was conducted as part of our review. The five Class I areas that were evaluated were Shenandoah National Park (closest Class I area), Dolly Sods, Otter Creek and James River Face National Wilderness areas and Brigantine National Wildlife Refuge. On February 9, 2011, a letter was sent to Mr. John Bunyak of the NPS' Air Resources Division located in Denver, Colorado, along with officials at the U.S. Fish and Wildlife Service and U.S. Forest Service, regarding the AQRV assessment prepared by the applicant and requesting concurrence that further AQRV analyses were not required for the project. Included in the correspondence is an April 8, 2011 email from Andrea Stacy of the NPS sent to ECT (environmental contractor for the Northeast Maryland Waste Disposal Authority) concerning potential air quality impacts to the Shenandoah National Park, for the closest Class I area to the proposed site:

> *"Thank you for sending the NPS information regarding the proposed waste-to-energy facility to be located in Frederick County, MD. As indicated in your Feb. 9, 2011 letter, based upon the emission rates and distance from Shenandoah NP, the*

NPS does not anticipate that modeling would show any significant additional impacts to air quality related values (AQRV) in this Class I area. Therefore, we are not requesting that a Class I AQRV analyses be included in the PSD permit application. However, as John Bunyak indicated below, there are several sensitive Class II NPS parks located within 50 km of the proposed facility. These include Antietam NB, Rock Creek Park and Catoctin Mountain Park. We request that you complete a near-field AQRV analysis for these parks, including a VISCREEN visibility analysis and the addition of several discrete receptors located in each park for the Class II AERMOD modeling runs. The AQRV analyses for these sensitive Class II parks can be included under the "Additional Analyses" section of the PSD permit."

The applicant conducted analyses of plume visibility and air quality impacts on four Class II areas (Monocacy National Battlefield, Rock Creek Park, Antietam National Battlefield and Catoctin Mountain Park). The analysis confirmed no significant impact to these areas. See also sections C. and D. of the response to combined comments 4 and 5 below.

Comment 3 - Safety issues

"I am requesting you deny the permits until Frederick County can provide information to the residents about their… ability to respond to emergencies at the facility that may cause harm to the residents of Frederick Co and the environment of Maryland."

Response

Although safety issues are outside the scope of the MDE permits/approvals in question, the following information has been provided by the applicant in response to citizen concerns:

The facility will prepare and implement site-specific safety, emergency action and fire prevention and other emergency preparedness plans consistent with applicable federal and state regulations. Since WTI already owns and operates a waste to energy facility in the state of Maryland, the emergency action and fire prevention plan for FCCRWTE is expected to be similar to the one for the existing WTI Baltimore facility. Requirements of local County Codes and Ordinances will be incorporated into the plan.

The emergency preparedness plan for FCCRWTE will address certain emergencies and minimize their impact on the employees, the facility and Frederick County. The plan will address various crises that could occur and the appropriate actions to be taken. Emergency actions, mobilization procedures,

chain of command for corrective action, outside agency contact for assistance and rapid deployment of needed resources will all be addressed in the plan. The emergency preparedness plan will contain the following:

- Scope of Plan
- Basic Policy
- Declaration of critical event and call list
- Response Actions
- Handling of inquiries
- Personnel responsibilities
- General procedures
- Specific emergency procedures
- Fire, evacuation and emergency telephone list
- Hurricane, flood, lightning, tornado and other natural disasters
- Bomb threats
- Medical emergencies

The emergency preparedness plan, coupled with the fire control and emergency evacuation plan, will specify roles and responsibilities for emergency situations and contingencies. Employee preparedness is the key to successfully responding to emergency situations. Therefore, drills on emergency situations will be practiced by each shift.

Comment 4 - Night time lighting

Was there an assessment of night time lighting and its effect on the surrounding landscape?

Comment 5 - Visual impact

"Has a study been performed to determine the visual impact upon the landscape?"

Combined Response for 4 & 5

Although visual impacts of the surrounding landscape and night time lighting are outside of the scope of the MDE permits in question, according to the applicant, there were a number of visual impact assessments that were completed for the project during the permit application process. Those studies included the following:

A. The Frederick County Planning Commission reviewed the site plan on September 14, 2011. The staff report (SP 88-04 AP #11919, APFO #10924 & FRO #11920 - September 14, 2011) noted that site lighting will be shielded to prevent ambient or skyward lighting and

light levels in the parking areas will not exceed 0.5 foot candles at the property lines.

B. As part of the MDE Air & Radiation Management Administration (ARMA) Air Permit application review, a visibility impairment potential and effects of wet cooling tower operations (including wet cooling tower plume visibility/fogging) evaluation was completed [Section 8.3 and 8.4 of the Frederick/Carroll County Renewable Waste-to-Energy Facility (FCCRWTE) PSD/Air Construction permit application; October 2012].

C. In response to a request by the National Park Service (NPS) Air Quality office (Denver), the Applicant conducted a Level-2 plume visibility impact analysis in February 2012 to assess potential impacts on the Monocacy National Battlefield (MNB). The plume visibility impact analysis was conducted using Federal Land Manager (FLM) and U.S. Environmental Protection Agency (EPA)-recommended plume visual impact screening Level 2 procedures. Plume visibility impacts were determined for an observer situated at three downwind distances from the FCCRWTE stack within the MNB; i.e., at the Visitor Center, Worthington House, and the nearest MNB boundary. The study concluded that the visible impacts were within the acceptable limits. The complete analyses can be found in the docket for the project.

D. The applicant has consulted with the local and regional National Park Service (NPS) staff, including the Monocacy National Battlefield Park Superintendent, during the Facility's design phase in an effort to incorporate NPS suggestions into the final design of the Facility.

After multiple meetings and correspondence with the NPS, the applicant incorporated numerous architectural design changes into the Facility to improve the view of the Facility from both the Battlefield and other vantage points in Frederick County. These changes specifically included:

(1) altering the overall appearance of the building from an industrial complex to a series of building forms;
(2) using curves and angles on the roofing forms, which are more harmonious with the landscape of the nearby terrain;
(3) changing the Facility's stack design to reduce its overall size and appearance;
(4) using a blend of colors on the Facility's façade to complement the background and landscape; and
(5) using a blend of wall system products that provide more appealing detailing and a more human scale.

Comment 6 – Opportunity for public comment

Commenters requested that the MDE schedule another hearing for each permit (air, water and refuse disposal) to allow for a full airing of the many concerns and extend the comment period an additional 60 days after the additional hearings. Many felt that 3 minutes was not enough time to comment at the hearing and questioned why elected officials got more time. Several commenters stated enough time was not given to review the large quantity of documents associated with each permit, it was difficult to find some of these documents, and there was a lack of information about the project and the hearing provided to county residents.

Response

Section 1-604(a)(3) of the Environment Article, Annotated Code of Maryland, required MDE to publish a notice of tentative determination on the air, water and refuse disposal permit applications for the proposed facility and allow 30 calendar days for public comment before the issuance of the final determination.

The Department held two public comment hearings on the proposed facility. The NPDES permit application process was completed prior to the other permit/approval application processes, and was the subject of the first hearing, held on August 22, 2012. Public notice for that hearing was published on July 13, 2012 in the Frederick News Post. Public notice for the second hearing was published on December 20 and 27, 2012 in the Frederick News Post. The second public hearing held on January 30, 2013 covered all permit/approval applications. At this hearing, MDE announced that the period for submitting comments on all permits/approvals would be extended an additional 60 days beyond the initial 30 day comment period due to significant public interest in the project. Subsequent to the hearing, MDE received requests for additional time in which to submit comments. In response to these requests the comment period was extended an additional 60 days through May 20, 2013. Notice regarding these extensions were posted on MDE's website.

The Department received comments on all pending permit/approval applications at the second hearing held on January 30, 2013. In order to allow everyone a chance to provide oral testimony, the Department set a time limit of three minutes due to the large number of people who signed up to testify. It is MDE's standard procedure to call upon elected officials first to present oral testimony, whether for or against the proposal, with no time limit specified. Everyone in the audience who requested an opportunity to offer oral comments at the second hearing was able to do so before close of the hearing. Because written comments carry the same weight as oral comments, and given the extension of the comment period, the Department believes there has been adequate opportunity for public comment.

The air, water, and refuse disposal permit/approval applications and all supporting documentation were placed in the C. Burr Artz Public Library located at 110 East Patrick Street in Frederick for public viewing. These applications were also made available to the public at MDE's offices in Baltimore and published on MDE's website. In addition, certified mailings of the public notice were sent to property owners within 1,000 feet of the property line of the proposed incinerator, to each member of the General Assembly representing Frederick County, to the Department of Natural Resources, and to the Board of Frederick County Commissioners. MDE has satisfied all the requirements for public notification of the proposed incinerator.

Comment 7 – road and truck traffic issues

Additional truck traffic will have a significant impact on the quality of life for the houses on the road, both in noise and safety. Will there be any tractor trailer restrictions for roads on which houses are close to the road? Can the roads handle the increased traffic?

Response

Although MDE appreciates the citizen concerns in this matter, decisions relative to the appropriateness of a proposed land use relative to surrounding land uses are strictly within the province of the local zoning and land-use authority. Frederick County has provided to the Department a written statement and documentation that all applicable county zoning and land use requirements have been satisfied. This in turn satisfies the requirement of Environment Article, Section 9-210(a)(3)(1), which is a precondition for refuse disposal system permit issuance and Environment Article, Section 2-404(b)(1) for the air permits. The local or State police are responsible for monitoring traffic, and any trucks using county or State roads in the area will be subject to the posted speeds and weight restrictions for those roads.

Although not required for a Refuse Disposal Permit application, a traffic impact study was conducted by the applicant to evaluate the potential traffic impacts of the proposed facility on the adjacent roadway network and is included in the application. Based on this study, several recommendations were made to the State Highway Administration and Frederick County for their consideration. At the request of MDE, the applicant provided the following additional information: "The traffic impact study report identified roadway network improvements needed to accommodate impacts associated with future growth in the area and the minor increase in traffic caused by the operation of FCCRWTE. With these improvements in place, intersections will operate at acceptable levels when FCCRWTE is in operation. The improvements to the Route 85/English Muffin Way intersection will be completed before the FCCRWTE facility begins operation."

Comment 8 - Do the citizens of Frederick County have the right to close the facility down?

Response

After the incinerator is built and placed in operation, it will be subject to the Department's regulatory and enforcement authority under Maryland law, which will ensure that the facility operates in accordance with the permits and approvals issued by the Department, as well as any other applicable environmental statutory and regulatory requirements administered by MDE. Various provisions of the Environment Article of the Maryland Code authorize MDE and/or the Attorney General to initiate an administrative or civil enforcement action for violations of applicable environmental requirements. In certain instances, MDE may refer a matter for criminal prosecution to the Attorney General. Federal statutes authorize citizens who meet federal standing requirements to file suit against facilities that violate certain federal or state regulatory requirements, wherein citizens can seek injunctive relief. The degree of relief that may be sought by either the Department or citizens depends on the nature of the violations.

The Department also encourages citizens to report suspected violations to the Department so they can be investigated and verified by the Department and steps can be taken to bring the facility back into compliance.

In terms of the permit applications, as part of the public participation process outlined in Sections 1-601 through 1-606 of the Environment Article, Annotated Code of Maryland, the Department held public informational meetings and public hearings and provided for an extended comment period in order to solicit comments from the public on the proposed facility. The Department gives careful consideration of all comments received for a proposed facility that relate to the Department's regulatory authority, and can modify or even deny an application if it fails to meet applicable laws and regulations. Persons who commented during the public review process and meet the threshold standing requirements may challenge the Department's final determinations on the issuance of the air permit to construct, the NPDES water discharge permit or refuse disposal permit by filing a petition for judicial review based on objections raised during the public review period for any or all of these permit determinations.

Comment 9 – Contract and economic issues

The contract is poorly written. The project may bankrupt the County. The finances, waste logistics and environmental benefits reported by NMWDA are unreal. MDE and NMWDA should provide revised fact sheets and tentative determinations. The proposed incinerator will lock Frederick County taxpayers into a long term contract which will force continued county membership with the NMWDA, at a cost projected to be up to $275,145 in FY2015 and possibly

higher late on. Also, Wheelabrator's monthly fee of $43,159 payable to the NMWDA will be billed to the County. There are millions of dollars of hidden costs for County taxpayers; County also failed to include costs for landfill depletion or for long hauling of ash after Reichs Ford landfill is full.

The contract includes numerous loopholes and inaccuracies that will result in legal problems for years to come, and cost the taxpayers millions of dollars. MDE and NMWDA should provide revised fact sheets and tentative determinations which address the issues raised by commenters and which more clearly inform the public as to the actual risks and benefits of this project (including difficulty in importing enough trash to run the facility at maximum capacity). Applicant should also provide updated financial information that utilizes current electricity rates.

Response

The provisions of the contract between the applicant, Northeast Maryland Waste Disposal Authority, and Wheelabrator Technologies, Inc. (the facility operator), as described in the comment, are outside of the scope of the Department's review of the permit/approval applications, and therefore do not bear upon the Department's decision to issue or deny a permit. MDE's role is to evaluate the proposed site and the proposed design to determine the impact that air emissions, water discharges and the physical operation of the facility may have on human health and the environment.

Comment 10 – Concerns about burning tires

Burning of the tires will create a strong financial incentive to burn recyclable materials. The application does not concretely specify amount of tires to be burned or the source of the tires; could the facility then turn into a tire incinerator versus a trash incinerator? Comments were raised about burning scrap tires along with municipal waste and sewage sludge. If the proposed facility operates at the maximum capacity, there will be over 23,000 tons of tires burned per year, which will be trucked in from out of state. Scrap tires should not be used for burning and rather used for engineering projects to improve road infrastructures.

Response

As stated in the air and refuse disposal permit applications, the proposed waste to energy facility is designed to combust 1500 tons per day at 5,500 Btu per pound of municipal waste, industrial waste, sewage sludge and scrap tires. Because the actual daily quantities of processible solid waste combusted will vary based on the actual Btu content of the solid waste combusted on that day, scrap tires will be combusted to offset the effect that sewage sludge combustion will have on the higher heating value of the overall solid waste mixture. The application also states that up to 20,000 tons per year of scrap tires may be combusted at the proposed facility. Therefore, at the maximum annual solid

waste throughput rate, the maximum amount of tires combusted would represent less than 4% of the total waste stream. Scrap tires may be brought to the facility by county transfer vehicles, scrap tire haulers or be mixed with the trash. Based on the applicant's projection of the amount of scrap tires to be accepted, the facility would still be considered a municipal waste combustor. If the facility wanted to burn significantly more scrap tires, then MDE would require the permittee to demonstrate how the facility would still be able to comply with their emission limits.

At the present time, there are four other facilities in Maryland that burn scrap tires, and one large scrap tire processing facility in Baltimore City that recycles the tires into chips, a large percentage of which are then sold for use as a tire derived fuel. The counties (Harford and Montgomery) and Baltimore City, in which these scrap tire facilities are located, continue to meet or exceed the current recycling rates required by Maryland statute.

Comment 11 – archaeological issues

One commenter stated that the largest colony of African American slaves on the east coast has been excavated at the proposed location. Is this true and would there be any prohibitions on building the facility on this location?

Response

Although archaeological review is outside of the scope of the MDE permits in question, the applicant has informed MDE that they have consulted with Maryland Historic Trust and there is no known history of the archaeological artifacts or excavation on this property as described by the commenter.

Comment 12 – How does NMWDA's projection of 15,000 tons of metals to be recovered at the facility annually compare with Montgomery County's incinerator?

Response

This question falls outside the jurisdiction of the MDE and this permit, however, the MDE has been informed by the applicant that the Frederick/Carroll facility will have a more advanced metal recovery system than the one installed at the Montgomery County Resource Recovery Facility. As such, they are anticipating a greater recovery rate for the ferrous and non-ferrous metals, but the total tonnage recovered will be a function of metals remaining in the waste stream that is processed.

Comment 13 - Should the zip code of the facility be 21704 instead of 21701 as noted on the application?

Response

Yes.

SECTION II
Responses to comments related to the air quality control permit to construct and NNSR and PSD approvals

Comment 1 - Comments relating to hazardous air pollutants/toxic air pollutants

"I am concerned about the number of hazardous air pollutants the permit will allow released; that is mercury, lead, hexavalent chromium, et cetera."
"Lead, mercury, hexavalent chromium and dioxins are just a few of the poisons that will be emitted into the air we breathe."
"The stack will be clearly visible from my back deck, spewing toxic particulate toward my house…"
"Section B lists hazardous air pollutants which would total up to 111 tons each year in spite of the best filtration they can bring to bear."
"The contractor is seeking permits to burn up to 40 million pounds of tires per year…"
"Specifically, during the combustion of tires, the air becomes tainted with benzene, styrene, PAHs, and most notably dioxins. Tires contain a high concentration of metals and chlorine, and these are two factors that catalyze an increase of dioxin formation during the incineration process. According to the EPA, there is no safe level of exposure to dioxins, and scrubbers do not remove all the dioxins."
"Burning toxic tires then burying the poisonous ash is no way green."

Response

Under EPA's New Source Performance Standards (NSPS) for municipal waste combustors, emission standards have been established for certain heavy metals (lead, cadmium, mercury), acid gases (hydrogen chloride and sulfur dioxide) and organics (dioxins and furans). These emission standards are based on the availability of emission control technologies that are deemed to be cost effective. The requirements for the Applicant to meet these standards are contained in Part B of the draft Permit to Construct.

Under State regulations (COMAR), Maryland has developed screening levels for toxic air pollutants that are based on health criteria developed by the American Conference of Governmental and Industrial Hygienists (ACGIH). These screening levels represent the concentration of the pollutant at ground level that, if not exceeded, would ensure that the pollutant would not unreasonably endanger human health. For carcinogenic pollutants, the screening level is set to ensure that the maximum exposed individual will not

have an increased cancer risk of more than 1 in 100,000. For non-carcinogenic pollutants, the screening level is set at 1/100th of the value used by the ACGIH in their efforts to protect workers from the effects of pollutants encountered in a working environment.

Assessments of the impacts from toxic air pollutants from the facility were conducted using the AERMOD dispersion model and following the modeling procedures, meteorology data gathering and receptor grid determination methodology as described in Section 6.0 and 7.0 of the permit application. Table II of the Permit to Construct Fact Sheet and Tentative Determination summarizes the results of the modeling. For the short term averaging periods (i.e., the 1- and 8- hour), the 110% maximum continuous rating (MCR) operating scenario was used since this operating case resulted in the highest short-term impacts. For the annual screening level, the 60% MCR operating scenario was used since this operating case resulted in the highest annual impact. Table II shows that maximum air quality impacts for all the toxic air pollutants reviewed were found to be below the Department's screening levels by one or more orders of magnitude. This means that the projected ground level concentrations are too low to have an adverse impact to human health.

Comment 2 - Comments relating to the applicability of EPA regulations
"Additionally, EPA regulations affecting federal standards of emissions are constantly increasing. There is no information how this facility will meet these more and more stringent standards, and I am concerned about the ability to do so. The costs of retrofit Baltimore's waste combustor due to the Clean Air Act amendments of 1990 were over $40 million and there is no assurance this facility will be capable of handling emission and processing upgrades over the next 30 years."
"On November 16th, EPA proposed updated emission limits under the mercury and air toxic standards for new power plants. If this incinerator is built is it subject to the new standards."

Response

If the proposed Frederick County facility is constructed and placed in operation, it would be required to meet any new standards that would apply to either that individual facility or the category of municipal waste incinerators. Typically, whenever standards for new (yet-to-be constructed) emission sources are made more stringent, standards for existing sources are also made more stringent, but are given a reasonable amount of time in which to comply, generally three years.

On November 16, 2012, EPA proposed updated emission limits for mercury and air toxics for power plants. On April 24, 2013, EPA finalized these updated limits. These new requirements affect only new coal- and oil-fired power

plants. These rules do not apply to incinerators, such as the proposed Frederick County facility.

Comment 3 - Comments relating to health impacts

"All of these toxics have been studied numerous times with conclusive findings that show direct links to several cancers, cardiovascular disease, serious birth defects, and respiratory problems."
"How many cancers will result from the 4.2 pounds of hexavalent chromium that will come from the incinerator every year? Ten? Is that acceptable? Is one cancer acceptable?
"Four hundred pounds of lead a year coming from the incinerator – this is from table B—means that between a child's birth and the age of 18 the environment around the incinerator will accumulate an additional 7,200 pounds of lead…the biological effects of lead start in concentrations measured in parts per billion."
"The pollutants from the incinerator can make our asthma worse."
"Frederick County has the highest respiratory disease in the state. It also has the highest cancer rate in the state. And probably one of the highest in the nation, actually, both respiratory and cancer rates."

Response

The Department evaluated emissions from the proposed Frederick County facility, including emissions of lead. For pollutants for which EPA has developed health-based ambient air quality standards and the air quality in the area meets those standards, the Department modeled the effect those pollutants would have on ambient air quality and concluded that the proposed facility will not cause a violation of any of these standards. For pollutants for which a health-based standard exists but the area does not meet those standards, the Department's evaluation concluded that the proposed facility would need to install state-of-the-art pollution control equipment and also to offset any remaining emissions through pollution reductions elsewhere, which is consistent with federal Clean Air Act requirements. For toxic air pollutants, the Department modeled the proposed facility's emissions to determine the maximum ground-level concentration of each pollutant and compared those concentrations to concentrations established by the Department and designed to be protective of public health. This exercise concluded that all modeled concentrations would not exceed the health-based concentrations. For information regarding the risk that toxic air pollutants may pose, please refer to the responses to comments 1and 4 of this section.

For lead, specifically, it should be noted that under the Clean Air Act the National Ambient Air Quality Standards (NAAQS) development process establishes air concentration levels based on protection of human health and welfare, with an adequate margin of safety. For lead, non-air pathways and sensitive individuals, including children, were considered in setting the

standard. The facility's projected maximum annual emissions of lead of 0.2 tons per year (tpy) is less than the Prevention of Significant Deterioration (PSD) significant emission rate (SER) listed in 40 CFR 52.21 for lead of 0.6 tpy; therefore, emissions of lead are not subject to PSD requirements. In addition, under State air toxics regulations, potential emissions of lead are below MDE screening levels. As such, projected levels of lead emissions are not considered to be significant or adversely impact human health under the Clean Air Act.

The Maryland Asthma Control Program addresses both adult and childhood asthma. It is located in the Center for Maternal and Child Health at Department of Health and Mental Hygiene (DHMH).

Asthma Control Program
Center for Maternal and Child Health
Family Health Administration
Department of Health and Mental Hygiene
201 West Preston Street, Room 309
Baltimore, MD 21201
(410) 767-2196

The Maryland Asthma Control Program at the Maryland Department of Health and Mental Hygiene has developed a Maryland Asthma Plan to provide a common vision for individuals, organizations, and communities to address the burden of asthma in Maryland. The Plan serves as a roadmap to implement and evaluate local and statewide actions based on best practices of medical and environmental asthma management. The Program has also published surveillance reports regarding asthma in Maryland. Information about the Asthma Control Program, including links to the most recent reports and statistics, can be found at the following website address:

http://phpa.dhmh.maryland.gov/mch/Documents/Asthma_Action_Agenda.pdf

The American Lung Association of Maryland, established in 1919, is actively engaged in the fight against lung diseases including asthma, emphysema, and lung cancer. Information about emphysema and programs related to air quality and lung diseases may be obtained at the following website address:

http://www.lung.org/associations/states/maryland/

Comment 4 - Health-Risk Assessment
"I object to the Maryland Department of the Environment issuing any of the permits until a thorough health-risk assessment is performed in the area of the proposed incinerator by an independent agency, not by Wheelabrator."
"There are 11 schools within a couple mile radius of the proposed incinerator."

"The greatest burden will be to the people who will be sickened from this with cancer and other grave illnesses."

Response

The application included a report, dated April 2012, entitled "Human Health Risk Assessment for the Frederick/Carroll County Renewable Waste-to-Energy Facility, Frederick County, Maryland" was prepared by CPF Associates on behalf of Wheelabrator Technologies.

The report "presents a human health risk assessment conducted to address concerns associated with potential stack emissions from the FCCRWTE. This analysis is not a formal requirement for the permitting process, but was conducted to evaluate whether the Facility would have an adverse impact on human health."

The report reached the following conclusions:

"The risk assessment results were all below the benchmark risk levels, indicating that the Facility is not anticipated to have an adverse impact on human health." Specific results are described below:

- The lifetime cancer risks potentially associated with stack emissions were at least 10 times lower than the USEPA and MDE regulatory benchmark level of $1x10^{-5}$ (1 in one hundred thousand). The total lifetime cancer risks ranged from $3x10^{-9}$ (3 in one billion) for the hypothetical child resident receptor assumed to live at the maximum residential impact location north of the Facility to $6x10^{-7}$ (6 in ten million) for the hypothetical adult farmer receptor assumed to live at the maximum impact farm location. Even if the highest risk result for the hypothetical adult farmer ($6x10^{-7}$) is added to the highest fish ingestion risk ($5x10^{-7}$ for a hypothetical adult fishing scenario involving a typical farm pond), the total lifetime cancer risk associated with stack emissions would be $1x10^{-6}$(1 in one million) still below the USEPA and MDE benchmark risk level of $1x10^{-5}$.
- All of the non-cancer hazard index values were at least 15 times below the commonly-used USEPA and MDE benchmark hazard index of 1.0 and at least 4 times lower than the supplemental HHRAP benchmark hazard index of 0.25, indicating that adverse non-cancer effects are predicted not to occur. The highest hazard index results were 0.05 and 0.06 for the hypothetical adult and child farmer receptors, respectively, assumed to live at the maximum impact farm location. Even if the hazard index results for the fish ingestion pathway (the fishing scenario involving a typical farm pond), the total hazard index would be 0.09, still well below both the 1.0 and 0.25 benchmark hazard index levels.

- Infant exposures to PCDDs/PCDFs and dioxin-like PCBs were 300 or more times lower than USEPA's comparison level of 60 pg TEQs/kg-day.
- The maximum short-term (1-hour average) air concentrations were at least 14 times lower than the corresponding acute reference air concentrations. Even under potential upset conditions, short-term air concentrations would still be below acute reference concentrations, indicating that adverse short-term inhalation effects are not expected to occur.
- Overall, the methods and assumptions used in this analysis were conservative (i.e., health protective) and, therefore, the risk assessment results are considered much more likely to be overestimated than underestimated."

Comment 5 - Compliance Issues

"In Massachusetts, Wheelabrator was found liable for environmental violations at three of their incinerators and fined $7.5 million."
"In addition Wheelabrator has been fined millions of dollars in Baltimore along with several states for violating their contracts and EPA standards regarding the release of toxins into the environment. What due diligence did the MDE perform in advance of issuing these permits to insure that violations will not occur at the Frederick facility?"
"In Baltimore Wheelabrator was fined for failure to control toxic emissions of mercury into the air."

Response

The Baltimore incinerator currently owned by Wheelabrator (formerly known as Baltimore RESCO) has been in operation since May 1985. Since that time, its three most significant alleged air violations resulted in payments to the Clean Air Fund of approximately $95,000.

The Department believes that the applicant for the FCCRWTE incinerator--the Northeast Waste Disposal Authority--will ensure that the incinerator is operated in good faith to comply with all requirements in the Department's permits and any other applicable environmental requirements.

The permits will impose recordkeeping, reporting and monitoring requirements on the facility which will provide the Department with information that will help establish whether the facility is performing properly. This information will help the Department to take appropriate action should a violation occur.

The facility will be required to install and continuously monitor emissions of NOx, SO CO, and CO_2 from the incinerator stack. The facility will also be required to monitor key operational parameters, such carbon injection flow rate, inlet flue gas temperature and opacity (via Continuous Opacity Monitors

(COMs)) to give a continuous indication that pollution control equipment is functioning properly. The Department will conduct announced and unannounced inspections, consistent with EPA grant commitments, to ensure that the facility is operating in compliance and that the performance indicators the facility is required to monitor are being monitored.

If constructed, the Frederick County facility will be a "major source" (as defined in COMAR 26.11.02.01C) of air emissions. As a major air emission source, FCCRWTE will be required to designate a responsible official to submit an annual compliance certification to the Department certifying compliance with each applicable permit requirement. In addition, FCCRWTE will be required to submit an annual emissions certification by April 1 of each year for the Department's review.

The facility will be required to monitor the operation of its equipment and must maintain records of the operation. Personnel from the Department are then able to use these records to determine any possible problems with the facility and any resulting excess emissions. Documents regarding reporting and record keeping that will be generated are considered part of the public record and will be available for public review.

Finally, the Department is legally required to conduct full compliance inspections of major air emission sources, such as the proposed facility, as a condition of grants it receives from EPA.

Comment 6 - Ambient Air Quality/Ozone Non-Attainment Issues
"Let's not add to the already questionable air quality of Frederick County…"
"Currently, Frederick County does not meet EPA standards or guidelines for NOx or nitrogen oxide pollution levels."
"Frederick County is already nonattainment, which means you already have air quality problems."
"What are the current atmospheric levels of NOx in Frederick County?"
"What are the current atmospheric levels of PM, PM2.5 & PM10 in Fred. Co?"
"The American Lung Association recently gave Frederick County an "F" for poor air standards."
"Was the appropriate baseline ambient air quality data collected? When and by whom?"

Response

Maryland is currently in attainment with the National Ambient Air Quality Standards (NAAQS) for NOx. However, NOx is also a pollutant of concern as a precursor to ozone formation. Currently, there are counties within Maryland which do not meet the NAAQS for ozone. The ozone standard is set by EPA under the federal Clean Air Act. This does not mean that new emission sources of ozone precursor emissions (NOx or VOC) are prohibited. With respect to the

issue of ozone, a pollutant for which Maryland is in nonattainment, the Clean Air Act allows new sources of ozone to locate in Maryland, provided they meet certain requirements designed to minimize the impact such sources would have on air quality. For large emission sources such as FCCRWTE (major sources within the context of the Clean Air Act) low-emitting control technology is required to be installed and the emissions remaining after application of the control technology are required to be offset by a greater than one-to-one margin.

Maryland is making progress on addressing ozone. There have been hundreds of pollution reduction programs put in place since 1990 that have helped improve our air quality. The difficulty of late is that, as we achieve or nearly achieve a standard, a more stringent standard is imposed. In 1997, EPA issued a revised ozone health standard of 0.08 parts per million (ppm) based on an 8-hour measurement to protect human health against longer exposure periods. The new standard replaced the 1-hour standard of 0.12 ppm that had been in place since 1979. This lower standard averaged over an 8-hour period is more stringent than the 1-hour ozone standard, but is more protective of public health. In April 2004, EPA designated the Baltimore and Washington metropolitan area as "moderate" ozone non-attainment areas for the eight-hour ozone standard. In 2005, the older 1-hour ozone standard was revoked; at this time only the 8-hour standard is in effect. However, to avoid backsliding or losing progress towards attainment, states are required to maintain the specific control measures needed under the 1-hour standard now included in a state's implementation plan.

Over the past several decades, the MDE has adopted and implemented numerous control programs (laws, regulations, voluntary measures) that reduce NOx and VOC emissions in Maryland.

The most significant recent control program is the Maryland Healthy Air Act ("HAA"), which significantly reduces NOx from Maryland older coal burning power plants. The HAA imposes more stringent requirements than the federal Clean Air Interstate Rule and is the most substantial emission control program ever adopted in Maryland. The HAA reduced Maryland power plant NOx emissions by 70% (compared to 2002 levels) in 2009 and by 75% in 2012. The 2009 and 2012 reductions were a significant part of the attainment scheme developed by the MDE to meet the 1997 federal ozone standard.

In 2008 EPA revised the federal ozone standard and has recently begun implementation of this standard. Maryland has three nonattainment areas in the state. The revised standard requires a review of controls on major sources such as power plants. The control review will focus on emissions during ozone season and ensure against spikes through a revised emissions rate limit.

Several new control measures are being adopted specifically to help Maryland attain the federal ozone standard. The programs, in addition to the existing control programs that continue to be implemented and enforced, allow

Maryland to develop an attainment demonstration that shows how Maryland will meet the federal ozone standard.

MDE does not operate any NOx, PM-2.5, or PM-10 monitors in Frederick County at this time. Frederick County is part of the larger Washington-Arlington-Alexandria, DC-VA-MD-WV Core Based Statistical Area (CBSA) that EPA uses to designate attainment status relative to the NAAQS. EPA Region III has approved the air quality monitoring network for this CBSA and it consists of monitors in DC-MD-VA-WV. As such, the air quality for the region is characterized by the design values generated through the approved monitoring network. A design value is a statistic that describes the air quality status of a given location relative to the level of the National Ambient Air Quality Standards (NAAQS). Design values are computed and published annually by EPA's Office of Air Quality Planning and Standards

The 2011 design values for the Washington-Arlington-Alexandria DC-VA-MD-WV CBSA are as follows:

PM2.5 annual – 10.8 mg/m^3

PM2.5 24 hour – 26 mg/m^3

PM10 24 hour – no exceedances of the 150 mg/m^3 standard

Nitrogen Dioxide 1 hour – 59 ppb

Nitrogen Dioxide Annual – 16 ppb

These design values are below the NAAQS.
(http://www.epa.gov/air/criteria.html)

The 2012 design values are still being finalized by EPA.

Comment 7 - Mercury
"Ninety-two pounds is way too much mercury to be going into the air".
"Minute amounts of mercury can and do cause very serious chronic and acute health problems. Mercury has been found to be increasingly concentrated in the food chain through a process called biomagnification."
"And I see permits for incinerators for waste coal burning power plants or coal power plants that have continuous monitoring requirements for mercury. A lot of facilities are starting to have that right now and the idea that's optional on this permit is a joke and it needs to be mandatory."

Response:

Emissions of mercury were analyzed as part of the PSD pollutant review of metals generally associated with municipal waste incinerators, which include cadmium (Cd), lead (Pb), and mercury (Hg). (See "Review of a Prevention of Significant Deterioration Approval Application"). With respect to mercury, federal rules regarding municipal waste incinerators set a numeric emission standard of 50 ug/dscm corrected to 7% O_2. However, the PSD Best Available Control Technology ("BACT") limit, which applies to this facility, is a more stringent 17 ug/dscm, corrected to 7% O_2.

Based on the short term emission rate of 17 ug/dscm, the annual mercury emissions from the facility cannot exceed 92 pounds in any consecutive 12 month rolling period. To demonstrate compliance with the annual mass limit for mercury, FCCRWTE must install on each combustor either a continuous emissions monitoring system ("CEMS") for mercury or a sorbent trap for mercury.

In the event the Hg mass emissions exceed 92 pounds during any consecutive 12 month period, FCCRWTE is required under the terms of the permit to secure the services of an independent environmental consultant to perform an optimization study of the Hg control technology and prepare a report that includes recommendations for improving the efficiency of the control technology. Upon the Department's review and approval of the report, FCCRWTE is obligated to implement the report's recommendations within 60 days, unless the Department agrees to an extended implementation schedule.

Finally, as part of a mercury mitigation initiative, FCCRWTE is required to enter into a memorandum of understanding (MOU) with the Department at least 30 days prior to the commencement of construction. (See Permit to Construct Part G, Condition (2)(g).) The Permit requires the permittee to fund mitigation measures in accordance with the MOU, for a period not to exceed 10 years.

Comment 8 - Fine Particulates
"At full capacity, the incinerator will emit 10 million pounds of particulate matter per year…These emissions are in very small particles and they can lead to serious health problems and environmental damage as they accumulate and persist in the air, water, land, and bodies."
"These particulates are largely unregulated but will likely soon be, adding to the need for additional emissions controls and expensive retrofitting on the stack."
"Furthermore, the draft air permit lacks any limits on emissions of fine particulate matter in an area that already fails to meet clean air standards."

Response:

The following types of particulate matter are regulated by the Department and the U.S. EPA: PM (particulate matter), PM-10 (airborne particles with a

nominal diameter of 10 micrometers or less) and $PM_{2.5}$ (airborne particles with a nominal diameter of 2.5 micrometers or less also referred to as fine particulate matter).

In July 1997, USEPA established two new $PM_{2.5}$ NAAQS: an annual standard of 15.0 $\mu g/m^3$ and a 24-hour standard of 65 $\mu g/m^3$. USEPA designated the Washington DC-MD-VA area (including Frederick County) as nonattainment for the 1997 $PM_{2.5}$ NAAQS, effective April 5, 2005 (70 FR 944, 1/5/2005).

Since these designations were made, $PM_{2.5}$ air quality in the Washington DC-MD-VA area has improved such that concentrations of PM 2.5 in the ambient air are significantly lower than they were in 2005. The Washington DC-MD-VA region's federal reference monitors have demonstrated compliance with the 65 $\mu g/m^3$ daily standard since the inception of the $PM_{2.5}$ monitoring programs within each state. The federal reference monitors have demonstrated compliance with the 15.0 $\mu g/m^3$ annual standard since 2005. The most recent design value for the 24-hour standard, based on 2009-2011 data, is 26 $\mu g/m^3$, and the most recent design value for the annual standard, based on 2009-2011 data, is 10.8 $\mu g/m^3$. Based on this demonstration, the Department intends to formally request that EPA Region III designate all counties in the state as "attainment."

The commenter's statement that at full capacity, the incinerator will emit 10 million pounds of particulate a year is not correct. The Frederick County incinerator will have the potential to emit 36.3 tons per year total particulate matter (PM) and 68.1 tpy of PM10. These annual limits are reflected in a new Table 4 of the Prevention of Significant Deterioration ("PSD") Approval.

Also, since Frederick County is in a designated non-attainment area for $PM_{2.5,}$ the FCCWTE facility is not subject to PSD review, but would be subject to Non-attainment New Source Review ("NA-NSR") if potential emissions exceeded the 100 tpy threshold. As discussed in depth in the Department's tentative determination for NA-NSR, the potential facility-wide emissions of $PM_{2.5}$ are 66.7 tons per year. This is less than the NA-NSR applicability threshold of 100 tons per year. Nevertheless, the department has added Condition 6 to Part C of its final NA-NSR Approval, which states that emissions of PM2.5 must be less than 100 tons per year for any consecutive rolling 12 month period. Stack testing will be required as part of the initial compliance testing for the source. If it is determined that emissions of PM2.5 exceeds the 100 tpy non-attainment threshold limit, then FCCRWTE will be required to revisit NSR LAER (Lowest Achievable Emission Rate) requirements for PM2.5 and establish and allowable emission limit. In addition, FCCRWTE will be required to obtain PM2.5 emission offsets at a ratio of 1:1. Upon review and approval by MDE, the new PM2.5 emission limit will be included in a revised NSR approval. It should be noted that if $PM_{2.5}$ emissions did in fact trigger non-attainment NSR for this project, the same BACT control

measures applied for PM10 control would also satisfy the LAER requirement for $PM_{2.5}$.

Comment 9 - Monitoring Requirements
"Wheelabrator will be allowed to self-monitor"
"Wheelabrator and the Authority are required to test for the most toxic emissions once each year."
"There are four pollutants for which they are to continuously monitor…But the four pollutants, none of those are the toxic ones. So if there's one pollutant, mercury, that will be tested every three months and eight other pollutants, like acids or metals, particulate mater, dioxins, they will be tested every 12 months."
"We have learned here in Frederick that self-monitoring industry does not work. ESSROC's $100,000 fine for not monitoring their emissions properly?"

Response

Self-monitoring is not without government oversight and information transparency. The air permits and approvals for FCCRWTE include monitoring requirements to ensure that the owner/operator can demonstrate continuous compliance with all applicable air emission limitations and restrictions, including applicable requirements for toxic and hazardous air pollutants. Continuous compliance will be demonstrated for some pollutants by the use of continuous emission monitoring systems (CEMS) that automatically record emission outputs as they occur. For example, Frederick County will be required to install and operate CEMs for nitrogen oxides (NOx), sulfur oxides (SOx) and carbon monoxide (CO) and the toxic air pollutant, hydrochloric acid (HCl). For mercury, FCCRWTE will be required to install either a mercury CEM in accordance with 40 CFR 60.58b(d)(4) or a sorbent trap CEM installed and operated in accordance with Performance Specification 12B. For other pollutants for which CEMS are not available, the permit conditions establish alternate continuous compliance demonstration methods, referred to as "parametric" monitoring. For example, a pressure drop indicator, COM and inlet flue gas temperature indicator will be used as parametric monitors for cadmium and lead; while carbon injection flow rates and inlet flue gas temperatures will be used as parametric monitors for dioxins/furans. Table 1 of the PSD approval has been expanded to include how specific parametric monitors will be used to demonstrate continuous compliance with emission limits for a number of pollutants that will not have a CEMS. These parametric monitoring metrics are also capable of being measured continuously and recorded.

Comment 10 - Emission Offsets
"On page 315 of the air permit, NOx offsets are mentioned, but it is only generally stated that pollution offsets must be obtained from the same general area. What geographic area is this, MDE? This needs to be explained in detail."

"In order to meet the non-attainment provisions for major new sources of air emissions there must be "*equivalent emission offsets from existing sources in the area impacted by the proposed new major stationary source*." The potential NOx emissions have been identified as 229.8 tons per year, and, therefore, projected reduction credits in the amount of 298.7 tons would not be sufficient…Additionally, the ability to comply with this provision is doubtful since no sources *in the area* to offset this amount have been specified."

Response

The requirement to obtain NOx offsets is triggered only because NOx is an ozone precursor.

Six common air pollutants (also known as "criteria pollutants") are found all over the United States. These six pollutants are particulate matter, ground level ozone, carbon monoxide, sulfur dioxide, nitrogen oxides and lead. EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health based and/or environmentally based criteria (science base guidelines) for setting permissible levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards. A geographic area with air quality that is cleaner than the primary standard is called an "attainment" area; areas that do not meet the primary standard are called "nonattainment" areas. Frederick County is an attainment area for all criteria pollutants, including NOx, except for ozone and fine particulate matter. Ozone is a secondary air pollutant, which is created by photochemical reactions in the atmosphere. The two types of chemicals that are the main ingredients in forming ground level zone are volatile organic compounds (VOCs) and NOx. Under intensive sunlight, NOx reacts with VOC to produce ozone. Emissions of NOx or VOC and creation of ozone do not occur at the same time period, that is, the emissions from the Frederick County facility may contribute to the ground level ozone in other areas. For example, on a weekday, the peak VOC or NOx emissions occur between 7:00 and 9:00 a.m. and the ground level ozone concentration reaches its peak between 1:00 and 4:00 p.m. Since ground level ozone is a regional problem, FCCRWTE is allowed to use emission reduction credits from other regions for emission offsets as long as such credits come from a region with a non-attainment ranking equal to or higher than the area of concern and emissions of the particular pollutant from the other area have been demonstrated to contribute to a violation of the National Ambient Air Quality Standards (NAAQS) in the area where the new emission unit will be located.

Comment 11 - Cumulative Impacts

"Right across the railroad tracks is a factory for shingles for roofs and that produces tar. I smell the tar in the air, so I feel like you're just adding more pollutants to that… there is already factories that are already adding pollutants.

I don't need another building that produces toxins that we breathe in, for me and my family."
"How were "cumulative effects" addressed in the permit request?"

Response

The Department's regulatory focus in evaluating an application for a permit for the construction of an air pollution source is limited to air quality impacts associated with the equipment presented in the application. Water, land use, solid waste, noise and other such issues are not considered within the context of the air quality permits, but are or may be considered in conjunction with other required MDE, state or local permits. .

As part of its evaluation of the air quality permit application, the Department reviews technical information contained in both the application and the Department's files and in published reference materials. A determination is then made as to whether the estimated emissions from the equipment under review will or will not cause or create:

1. A violation of any of the National Ambient Air Quality Standards (for federal criteria pollutants) or regulatory requirements associated with those standards.
2. An adverse effect on public health (for toxic air pollutants).
3. A nuisance.

Cumulative air quality impacts for federal criteria pollutants are not taken into account directly, except in the case of very large sources whose emissions could possibly cause a significant deterioration in air quality. Cumulative impacts for criteria pollutants relative to existing sources are taken into account indirectly in that the emissions from all existing sources are reflected in the ambient air pollutant concentrations measured by monitors located around the State. From a permit review standpoint, the monitored value for a criteria pollutant is considered to be a background level (more detail regarding this is provided in the next paragraph). If an existing source or a collection of existing sources has an adverse impact on air quality it would be reflected in the monitoring data. Cumulative impacts associated with toxic air pollutants are also not taken into account directly, but are done so indirectly in the setting of the standard: the regulatory standards established for toxic air pollutants are set conservatively (1/100th of the worker safety level) to, among other things, account for the presence of multiple sources.

For criteria pollutants, the Department reviews modeling information (or conducts its own modeling) and determines the maximum ambient pollutant concentration that the proposed equipment is expected to generate. This maximum concentration is then added to the background (monitored)

concentration to determine an overall estimated impact. If the overall impact is estimated to be below the federal ambient air quality standard, the determination is that the equipment will not adversely impact air quality. For toxic air pollutants, the Department reviews modeling information to determine whether the maximum ground-level concentration is below state regulatory standards, which are protective of public health. If the modeling determines that the maximum concentration is below the standards, the Department's conclusion is that the equipment will not harm public health. For the Frederick County facility, the conclusion reached by the Department is that the emissions from the facility would not cause a violation of any ambient air quality standard and the maximum concentration of any toxic air pollutant would be below any threshold that the Department considers injurious to public health.

Comment 12 – Technology

"50-year-old technology that's going to pollute our land".
"Building the plant will lock Frederick County into old technology for decades and preclude us from using new technology that may be developed during the useful life of the plant. The plant will be part of Frederick for several generations, and as EPA standards change, it will most likely need to be retrofitted several times to meet stricter emission regulations."

Response

There is an inherent risk in choosing any technology in that it may at some point become outdated. Frederick County looked at several solid waste management options to arrive at the chosen waste disposal technology with the intention that it is the technology that will serve their needs for the foreseeable future. While it is possible that new federal or state regulations may impose additional or more restrictive requirements in the future, it is only conjecture at this point as to what any new regulations will entail and the associated cost for complying. There is an equal possibility that other currently available municipal solid waste management and disposal approaches or technologies also would be subject to more restrictive requirements in the future.

Comment 13 - Modeling Issues

"Were the combined effects of the Dickerson Incinerator and the FCCRWTE modeled to determine if there could be significant impacts in the area surrounding the facility?"

Response

All areas of Maryland are designated as PSD Class II areas. Significant Impact Levels (SIL) for Class II areas have been established by EPA to serve as an initial evaluation of air quality impacts. If a dispersion model predicts that the

impact of a criteria pollutant's emissions from the proposed project are less than the applicable Class II SIL for that pollutant, then the pollutant is considered insignificant and poses no threat to the applicable NAAQS or PSD increment. Additional analyses relative to attainment of the NAAQS and PSD increments are not required or necessary for criteria pollutants with predicted impacts less than the SIL.

For criteria pollutants with impacts greater than the SIL, further evaluation is required to determine whether additional modeling or analysis is necessary to demonstrate NAAQS and increment attainment. With the exception of the 1-hour NO_2 and 1-hour SO_2 impacts, the maximum facility air quality impacts for the FCCWTE facility are below the PSD SILs for all PSD pollutants and all averaging periods. A full impact analysis was required only for the 1-hour NO_2 and the 1-hour SO_2 emissions from the project.

The full impact analysis expands the preliminary analysis in that it considers emissions from (1) the proposed source; (2) existing sources; and (3) residential, commercial, and industrial growth that accompany the new activity at the new source (i.e., secondary emissions). The full impact analysis consists of a separate analysis for the NAAQS and PSD increments. The Montgomery County (Dickerson) RRF is included as an existing source in the modeling analysis which ultimately demonstrated compliance with the 1-hour NO_2 and 1-hour SO_2 NAAQS. A complete list of the sources that were modeled as part of the NAAQS demonstration can be found in the permit application in Appendix H- Supplemental Air Quality Impact Analyses 1-Hour NO_2 and SO_2 Impacts.

Comment 14 - Dust/Odors

"…the incinerator will give off an odor in the hot months of the year…"

Response

The Department's air quality control regulations prohibit a source from causing a nuisance. Under normal operations, the MWC facility is not expected to be a source of odors as FCCRWTE will deposit its waste in a totally enclosed tipping floor that will be under negative pressure. The application of a negative pressure will serve to minimize the opportunity for odorous gases escaping to the ambient air. Because the combustion air for the municipal waste combustors originates from the tipping floor area, any odorous materials or gases will ultimately be destroyed in the combustion chamber. Additionally, post-combustion air pollution control equipment such as the spray dryer absorber and fabric filter will serve to further minimize the discharge of materials which may have any residual odors. Odor surveys will be conducted when the plant is inspected by Department personnel. Inspections may occur on an announced and an unannounced basis. Finally, the Department may take an enforcement

action against the company if it is found to be in violation of these or other applicable MDE regulations.

The Department's regulations regarding nuisance are as follows:

COMAR 26.11.06.08- Nuisance. "An installation or premises may not be operated or maintained in such a manner that a nuisance or air pollution is created. Nothing in this regulation relating to the control of emissions may in any manner be construed as authorizing or permitting the creation of, or maintenance of, nuisance or air pollution."

COMAR 26.11.06.09- Odors. "A person may not cause or permit the discharge into the atmosphere of gases, vapors, or odors beyond the property line in such a manner that a nuisance or air pollution is created."

These regulations, which address nuisances and odors, would apply to the FCCRWTE facility, and, the Odors regulation explicitly applies to areas beyond the operation's property line. If these regulations are violated, the Department has the authority to take enforcement action against the offending party. The Department has used this authority on many occasions to address odor/nuisance issues that have occurred throughout Maryland.

Also, see the response to comment 6 in section IV of this document.

Comment 15 - Alternate Sites Analysis

"Additionally, there has been no "analysis of alternative sites, sizes, production processes, and environmental control techniques" which proves the facility's "…benefits significantly [emphasis added] outweigh the environmental and social costs imposed as a result of its location and construction."

Response

COMAR 26.11.17.03(B)(6), pertaining to applicants subject to non-attainment new source review ("NA-NSR"), provides that the Department must deny a permit or approval unless, among other things, "An analysis of alternative sites, sizes, production processes, and environmental control techniques for a proposed source demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification."

Frederick County, in its application, did conduct the required analyses, detailed in Sections 4.0, 5.1 and 5.2 of the air permit to construct application. They considered whether alternative projects or sites or mitigating measures would offer more environmental protection than the proposed project without unduly curtailing non-environmental benefits. The analysis demonstrates that the

benefits of the FCCRWTE facility outweigh potential social and environmental costs related to its location, construction or modification.

Per the application, the Frederick County Board of County Commissioners evaluated 11 sites on which to locate the incinerator. The applicants provided a detailed analysis as to why they chose the proposed site.

Most of the 11 sites were eliminated because of lack of access or distance to suitable and reliable non-potable water sources, inadequate land area for the facilities and/or buffers, and distance to electrical interconnection.

The final site was selected based on the following criteria:

a. Proper zoning;
b. Convenient access to the electric transmission system either via a 34.5-kV transmission line from FCCRWTE to the adjacent power line along the railroad tracks or by a 230-kV transmission line from the Facility switchyard to Allegheny Power's Lime Kiln substation, approximately 2 miles away.
c. Adequate supply of potable water from Frederick County and non-potable water for processes and cooling water tower makeup water from the wastewater treatment plant.

With regard to alternative production processes, the applicant evaluated various options and determined that a "1,500-tpd regional waste-to-energy facility would result in the lowest net present value cost to Frederick County over a 20-year planning period" with "minimal environmental discharge and environmental impacts." The application also states "The cost of long-haul transfer was evaluated as more expensive than the selected option of a 1,500-tpd waste-to-energy facility that would serve both Frederick and Carroll Counties."

Comment 16 - Greenhouse Gas Emissions

"Per unit of energy produced, garbage incineration emits more carbon dioxide, the leading climate warming pollutant, than burning coal."

Response

According to the Climate Registry, a nonprofit collaboration among North American states, provinces, territories and Native Sovereign Nations that sets standards to calculate, verify and publicly report greenhouse gas emissions into a single registry, their 2013 Default Emission Factors, show that the CO_2 emissions from burning coal range from 93.40 kg CO_2/MMBtu to 103.54 kg CO_2/MMBtu (depending on the type of coal) as compared to 90.7 kg CO_2/MMBtu for municipal solid waste.

Moreover, as stated in the Maryland's Greenhouse Gas Emissions Reduction Act Plan published on 7/25/13:

> **Waste-To-Energy as a Solid Waste Management Tool.** In 2010, the most recent year for which data has been compiled, more than 1.5 million tons of solid waste was landfilled by municipal solid waste landfills in Maryland. Anaerobic decomposition of municipal solid waste in landfills produces landfill gas in the form of methane and CO_2. Of the two gases – methane, which comprises approximately half of landfill gas – is significantly more potent. The global warming potential of methane over 100 years is at least 21 times greater than an equivalent amount of CO_2. In a shorter 20-year horizon the global warming potential of methane is 70 times greater than an equivalent amount of CO_2. Early reductions in emissions of greenhouse gases are vitally important to slow the rate at which global temperatures are rising.
>
> Waste-to-energy facilities can reduce GHG emissions through generation of electricity that displaces higher carbon fossil fuel-fired generation, and through recovery of ferrous and non-ferrous metals not ordinarily captured by residential recycling programs. The recovered metals avoid the GHG emissions associated with the less energy efficient production of metals from raw materials.
>
> Both US EPA and internationally adopted climate policy recognize the role of waste-to-energy as a greenhouse gas mitigation strategy. According to EPA, when compared to landfilling, WTE is often the better disposal option for generation of cleaner electricity. (http://www.epa.gov/sciencematters/april2010/scinews_energy-from-waste.htm). Waste-to-energy incinerators produce virtually no methane and generally produce less greenhouse gas emissions than landfills equipped with flares or gas-to-energy systems that generate electricity from the combustion of methane. *See, "Is it Better to Burn or Bury Waste for Clean Electricity Generation?* http://pubs.acs.org/doi/abs/10.1021/es802395e. Many European countries have adopted solid waste management polices that shift reliance from landfills to recycling and recovery of energy from waste.
>
> The State's long term goal is to minimize the need for waste disposal facilities through implementation of enhanced waste minimization, recycling, reuse and composting initiatives. Unfortunately, however, because of projected population growth and other factors, we expect a continuing need for post-recycling disposal facilities for some years to come. Because of its carbon benefits, there is a role for WTE as a bridge technology in the State's greenhouse gas mitigation strategy.

Comment 17 - Truck Traffic

"I am not sure that anybody has even addressed the serious truck traffic and safety issues associated with transporting tons of garbage to the incinerator daily."
"The additional trucks bringing in trash from outside the county will also add to the pollution."

Response

Traffic and vehicle safety are not issues that the Department addresses in its review of the permit applications. See Response to Comment 7 in Section 1 of this document.

The State of Maryland currently has a program to reduce the visible emissions from diesel trucks. In 1999, legislation was signed that established Maryland's first Diesel Vehicle Emissions Control Program. Under that law, diesel trucks and buses with a gross combination or gross vehicle weight of over 10,000 pounds are subject to testing of the vehicle's exhaust emissions. Regulations were developed in cooperation with the Maryland Department of Environment, Transportation and State Police and with the Maryland Transportation Authority Police. These regulations, which became effective in 2000, established testing procedures and emissions standards.

On July 10, 2000, Maryland State Police began testing heavy-duty diesel vehicles for exhaust smoke opacity. Opacity is a measurement of the ability of a substance to inhibit or block the passage of light. Smoke opacity, measured as a percent, is also representative of the amount of particulate matter (often referred to as soot) present in diesel exhaust. Vehicles covered under this program must meet certain smoke opacity standards.

Comment #18 - Deposition

"And what happens to the farmland that is downwind of the plant? Would you eat crops that come from the fields where the ash of toxic waste lands?

Response

An air quality impacts assessment of toxic air pollutants (TAPs) from the facility were conducted using the AERMOD dispersion model. Table II of the Permit to Construct Fact Sheet and Tentative Determination summarizes the refined AERMOD TAP results for the FCCRWTE combustors. Some of the toxic metals analyzed were: arsenic, beryllium, cadmium, chromium, dioxins/furans, lead and mercury. The analysis demonstrated that air quality impacts from TAPs would be below the MDE screening levels at the property boundary. It is reasonable to conclude that deposition impacts at locations beyond the property boundary would be less significant.

SECTION II, Subsection 1: Responses to EIP

The following air related comments were received from a single organization – the Environmental Integrity Project (EIP).

Comment #1- $PM_{2.5}$ Applicability

The Permits must satisfy nonattainment New Source Review Requirements including offsets and Lowest Achievable Emission Rate for $PM_{2.5}$ or limit $PM_{2.5}$ emissions to 24 ppmvd @ 7% O_2 at all times

Response

The aggregate $PM_{2.5}$ emissions (66.7 tons per year) associated with the project did not exceed the applicable emission thresholds for PSD or non-attainment NSR (i.e. 100 tpy). As such, NA-NSR requirements for $PM_{2.5}$ do not apply. However, MDE has added Condition 6 to Section C of the NA-NSR approval conditions which sets a $PM_{2.5}$ emission limit of not more than 100 tpy.

The PM 2.5 emissions estimates are based on the combined experiences of the combustor designers, the project developers, air pollution control suppliers, and available test data. The estimates provided are deemed to be reasonable compared to other facilities. For example, Energy Answers projected PM 2.5 emissions are approximately 70 tons per year for an MSW rate of 4000 tons per day. In comparison, the applicant here conservatively estimated about 67 tons per year for a processing rate of 1500 tons per day.

FCCRWTE will be required to conduct an initial $PM_{2.5}$ stack test for the MWCs to confirm that $PM_{2.5}$ emissions did not trigger NA-NSR. See also response to Section 2, Comment #8.

Comment # 2- VOC Applicability

The Permits must satisfy NA-NSR requirements, including offsets and LAER, for VOCs or limit VOCs emissions to 6.6 ppmvd @ 7% O_2 at all times

Response

Potential facility-wide VOC emissions for the project were estimated at 11.8 tons per year and did not exceed the applicable NA-NSR threshold of 25 tons per year. FCCRWTE will be required to conduct a VOC stack test to confirm and document that VOC emissions did not trigger NA-NSR.

Comment #3- NOx Precursor

MDE must consider NOx as a $PM_{2.5}$ precursor in its NA-NSR applicability analysis.

Response

Per the NA-NSR tentative determination, potential emissions of NOx exceed the NA-NSR threshold of 25 tons per year as an ozone precursor.

The NA-NSR Approval requires the following:

a. Implementation of Lowest Achievable Emission Rate (LAER) of air pollution control for NOx;
b. Obtain emission reductions (offsets) for regulated pollutants at a ratio of 1.3:1;
c. Certify that all other sources in Maryland owned by FCCRWTE are in compliance with all applicable requirements under the Clean Air Act; and
d. In accordance with COMAR 26.11.17.03B(6), conduct "An analysis of alternative sites, sizes, production processes, and environmental control techniques that demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction or modification."

The NA-NSR determination has been revised to clarify that NOx is also a precursor to $PM_{2.5}$ and that emissions of NOx exceed the 100 ton per year threshold for $PM_{2.5}$ precursors. It should be noted, however, that no additional requirements are triggered by this clarification than those already imposed in the NA-NSR Approval. In the case of emission offsets, the ratio for NOx as a precursor to $PM_{2.5}$ is the less stringent 1:1 ratio as opposed to the more stringent 1.3:1 ratio required for NOx as an ozone precursor.

The following is from the Maryland State Implementation Plan:

EPA's $PM_{2.5}$ implementation rule requires that state air agencies make a determination of the significance of $PM_{2.5}$ pollutants/precursors for SIP planning purposes, including requirements for motor vehicle emission budgets for use in conformity. The significance of each precursor for $PM_{2.5}$ has been analyzed and determined by EPA. Based on EPA's advice, $PM_{2.5}$-direct, SO_2, and NO_X were deemed significant for the Baltimore, Maryland non-attainment area, while ammonia (NH_3) and other precursors were deemed insignificant at this time.

Comment #4 - $PM_{2.5}$ Applicability

If MDE concludes that the incinerator does not meet major source thresholds for $PM_{2.5}$, it must review $PM_{2.5}$ under the minor new source review program which should include dispersion modeling

Response

Per the NA-NSR tentative determination, the Department has concluded that the potential PM2.5 emissions of 66.7 tons per year from the FCCRWTE does not trigger major source thresholds for NA-NSR. FCCRWTE does trigger PSD for PM and PM10, and these pollutants are therefore subject to PSD emission limitations, as identified in Table 1 of the PSD approval.

The Department disagrees with the commenters' suggestion that dispersion modeling should be included for $PM_{2.5}$ because dispersion modeling is required under PSD regulations for attainment areas. Frederick County is a non-attainment area for $PM_{2.5}$. EPA addressed this issue in the January 15, 2013 final rule:

A few industry and state commenters addressed the issue of potential dual review (applying NNSR and PSD simultaneously) based on distinct designations for separate averaging times of the $PM_{2.5}$ NAAQS. These commenters generally agreed with the EPA's conclusion that it was reasonable to apply only the NNSR permitting requirements to such situations and not PSD…Based on the express terms of existing regulations, only the NNSR permit requirements, and not PSD, apply for the pollutant $PM_{2.5}$ in cases where the area is designated nonattainment for at least one averaging time of the $PM_{2.5}$ NAAQS.

Comment #5 - SO_2 emissions

The permits must satisfy NA-NSR requirements, including offsets and LAER, for SO_2 or limit SO_2 emissions to 14 ppmvd@ 7% O_2 at all times.

Response

The applicable New Source Review program that applies is Prevention of Significant Deterioration (PSD), and the PSD Approval does limit SO_2 emissions at all times as follows:

24 ppmvd@7-percent O_2 (24-hour daily geometric block average- 24 hour daily block average must be based on a minimum of 18 hours MWC unit operating time); and
14 ppmvd@7-percent O_2 (annual 12 month rolling average)

SO_2 emissions limits are based on the use of BACT and must be continuously monitored with SO_2 CEMS to ensure compliance.

Table 4- Facility Wide Limits has been added to the PSD Approval to further clarify the allowable annual SO_2 emission limits.

Comment #6 - Emission limits

MDE must review the permit to state that short-term PSD emission limits for PM, PM10, $PM_{2.5}$, SO_2, VOCs, NOx, CO, and lead apply at all times, including during startup, shutdown and malfunctions

Response

The PSD and NA-NSR approvals already identify the emission limits that apply during startup and shutdown. Either the permits contain a limit that applies at all times, including startups and shutdowns, or the permits specify separate limits during normal operation and during startup and shutdowns. There are no exemptions in the permits from emission standards for malfunctions. In addition, Table 1 of the PSD approval identifies the means by which FCCRWTE must demonstrate continuous compliance with the standard.

a. PM (Filterable only): 10 mg/dscm@7-percent O_2 (minimum 3 test-run average)

b. PM10 (Filterable and Condensable): 24 mg/dscm@7-percent O_2 (minimum 3 test-run average)

   In addition to stack-testing, a continuous opacity monitoring system (COMS) will be installed and used as a parametric monitor for particulate matter. However, if FCCRWTE decides to use a PM CEMS in lieu of a COMS, then compliance will be based on 24-hour daily block average.

c. $PM_{2.5}$: The level of emissions for $PM_{2.5}$ did not trigger PSD or NA-NSR review. However, see also response to Section 2, Comment #8.

d. SO_2: 24 ppmvd @ 7-percent O_2, 24 hour daily block average and based on a minimum of 18 hours MWC unit operating time; and 14 ppmvd@7-percent O_2 (annual 12 month rolling average). SO_2 emissions will be continuously monitored with an SO_2 CEMS.

e. VOCs: The level of emissions for VOCs did not trigger NA-NSR review. As a consequence, FCCRWTE is not subject to a regulatory standard for VOCs.

f. NOx: "To meet Lowest Achievable Emission Rate (LAER) requirements when burning municipal solid waste (MSW) (alone or in

conjunction with natural gas, tires, or acceptable sewage sludge), emissions of nitrogen oxides (NOx) shall not exceed 45 ppmvd on a 24-hour block average, corrected to 7% oxygen."

g. CO: Normal operation: 100 ppmvd@7-percent O_2 (4-hour block average); and
80 ppmvd@7-percent O_2 (30-day block average)

During periods of start-up and shutdown: 100 ppmvd@7-percent O_2 (Contiguous 24-hour average)
CO emissions are required to be monitored with CO CEMS.

h. Lead: 75 ug/dscm @7-percent O_2 (minimum 3-test run average). Parametric monitoring includes the use of a fabric filter pressure drop indicator, COMS, inlet flue gas temperature indicator and Broken Bag Detectors system.

Comment #7- CEM Data

MDE must clarify that continuous emissions monitoring system data recorded during startup, shutdown and malfunctions will be calculated in compliance with determinations for BACT limits.

Response

The PSD Approval, the NA-NSR Approval, and the Permit to Construct all contain requirements for operation, maintenance and calibration of continuous emission monitors.

From the PSD Approval - "The Permittee shall install, operate, maintain, and calibrate the CEMS in accordance with the Performance Specifications under 40 CFR Part 60, Appendix B and the Quality Assurance Procedures under 40 CFR Part 60, Appendix F."

Comment #8 - Monitoring

The Permits do not require continuous compliance for emission limits for multiple pollutants

a. PM, PM10 and $PM_{2.5}$
b. Dioxins/furans and mercury
c. Lead, cadmium, HCl, HF and $H_2 SO_4$

Response

Table 1- Summary of BACT Requirements for Municipal Waste Combustors has been revised to include the continuous compliance method for each regulated pollutant. It should be noted that emissions of $PM_{2.5}$ did not trigger non-attainment new source review. However, see also response to Section 2, Comment #8.

Comment #9 - Opacity

The draft PSD permit references an opacity limit which is not set forth in the permit

Response

Opacity is not a regulated pollutant under the PSD program. However, The opacity limit is addressed in "Table 1- NSPS Subpart Eb Emissions Standards" and COMAR 26.11.08.04 in the Permit to Construct. Compliance with the opacity standard will be achieved by use of a continuous opacity monitoring system (COMS).

Comment #10 –Mass emissions

MDE must revise the permit to include mass emission limits, must limit flow rate at all times and must require that flow be measured continuously and reported to MDE

Response

Table 4- Facility-Wide Emissions Limits has been added to the PSD Approval conditions.

The NSR Approval requires "The Permittee shall install, calibrate, maintain, and operate a meter to monitor exhaust flow rates in the flue gas of each combustor."

The Department does not agree with the commenter that, in addition to mass emission limits and a flow meter, that it is also necessary to limit flow rate. The primary purpose for monitoring flow rate is to provide the data necessary to calculate mass emissions for each of the regulated pollutants. It is not necessary for flow rates to be limited in a permit since there is no meaningful standard that would apply. Additionally, flow rates are directly related to the waste throughput (in tons per hour) that is monitored and constrained by a permit limit.

Comment #11 – CO BACT

MDE erroneously failed to require an oxidation catalyst as Best Available Control Technology for CO from the municipal waste combustors.

Response

As part of the BACT analysis for CO [Section 4.2.5.1 of the PSD permit application], FCCRWTE identified two post-combustion technologies for the control of CO emissions (one of which was an oxidation catalyst). However, neither of these CO control technologies has ever been installed on a municipal waste combustor facility. Oxidation catalysts are known to be susceptible to deactivation due to impurities present in the exhaust gas stream. In addition, an oxidation catalyst would oxidize SO_2 to SO_3, leading to a collateral increase in emissions of sulfuric acid mist (H_2SO_4). Other design and operational issues (such as available space, proper flue gas temperature range and residence time) make the utilization of an oxidation catalyst on a municipal waste combustor an unproven and potentially infeasible technology. This determination eliminated this technology from further consideration as required by Step 2 [Eliminate Technically Infeasible Control Options] of the top-down BACT analysis.

By way of background, the inclusion in the 2012 revised CPCN conditions for the Energy Answers Fairfield facility in Baltimore of an oxidation catalyst to reduce CO emissions to 75 ppmdv @ 7% O_2 on a 24-hour block average basis was based on an inaccurate BACT analysis. The PPRP Supplemental Environmental Resource Document [9199-Supplemental ERD; June 2012; P 5-9] identified the Palm Beach MWC as the basis for the CO BACT analysis: *"The BACT determination for the Palm Beach MWC was cited by EA as the basis for proposing the same emissions limitation as BACT for the Fairfield facility, and for adding an oxidation catalyst to its proposed emission control system."* This statement was inaccurate and does not reflect the final Florida Department of Environmental Protection BACT determination.

The Palm Beach MWC permit [Palm Beach Renewable Energy Park Air Permit No. 0990234-017-AC (PSD-FL-413) Palm Beach Renewable Energy Facility No. 2 Palm Beach County; 12/23/2010] does not require an oxidation catalyst as part of the CO BACT analysis [Florida Department of Environmental Protection; Division of Air Resource Management; Technical Evaluation & Preliminary Determination; DEP File No. 0990234-017-AC (PSD-FL-413); Palm Beach Renewable Energy Facility No. 2; November 15, 2010]. This report specifically states (Page 22 of 49): *"The SCR technology provides the freedom to optimize operation of the grate and furnace so that low CO, VOC and organic HAP emissions can be achieved without installation of oxidation catalyst (oxcat as discussed below");* however, the Palm Beach MWC PSD permit includes a lower CO emission limit [80 ppmdv @7% O_2; 30 day rolling average] than the limit in the FCCRWTE Draft PSD Approval.

In recognizing the more restrictive CO emissions limit in the Palm Beach County Renewable Energy Facility No. 2 PSD permit, the Department is imposing this more restrictive CO emission limit, and has revised Table 1 of the PSD Approval [PSD Approval PSD-2012-01] by adding an additional limit for CO of 80 ppmvd @7-percent O_2 (30 day rolling average, including periods of start-up and shutdown). This would reduce the annual CO emissions to 248.3 tons per year for the facility based on operating continuously at 100% load for 8760 hours per year.

Comment# 12 – CEMS Data

The Permittee should be required to submit all CEMS emissions data and all data regarding monthly throughput to MDE.

Response

The PSD approval (Part G (1) and (2)) specifies the CEM emission data that is to be submitted to MDE-ARMA on a monthly and quarterly basis. Furthermore, COMAR 26.11.01.11- Continuous Emission Monitoring Requirements contains CEM Data Reporting Requirements as follows:

COMAR 26.11.01.11E(2)(a)-(c)

(2) CEM Data Reporting Requirements.

(a) All test results shall be reported in a format approved by the Department.

(b) Certification testing shall be repeated when the Department determines that the CEM data may not meet performance specifications because of component replacement or other conditions that affect the quality of generated data.

(c) A quarterly summary report shall be submitted to the Department not later than 30 days following each calendar quarter. The report shall be in a format approved by the Department, and shall include the following:

(i) The cause, time periods, and magnitude of all emissions which exceed the applicable emission standards;

(ii) The source downtime including the time and date of the beginning and end of each downtime period and whether the source downtime was planned or unplanned;

(iii) The time periods and cause of all CEM downtime including records of any repairs, adjustments, or maintenance that may affect the ability of the CEM to meet performance specifications of emission data;

(iv) Quarterly totals of excess emissions, installation downtime, and CEM downtime during the calendar quarter;

(v) Quarterly quality assurance activities;

(vi) Daily calibration activities that include reference values, actual values, absolute or percent of span differences, and drift status; and
(vii) Other information required by the Department that is determined to be necessary to evaluate the date, to ensure that compliance is achieved, or to determine the applicability of this regulation.

Comment #13 – GHG Emissions

MDE must explain its method of calculating the Greenhouse Gas (GHG) limit and must revise the draft PSD permit to clarify the compliance demonstration method for that limit and the limit's applicability to biogenic emissions.

a. MDE must explain how the proposed GHG emission limit was calculated; it is much higher than that for Energy Answers' Baltimore incinerator; the CO2 emissions factor that was used was forty percent higher than that used by EPA's emissions factor; there is no explanation of how steam flow rate was calculated.

Response

Detailed calculations for GHG emissions from the two combustors and the emergency diesel engine are shown in Appendix B (Table B-10) of the application. Based on the maximum annual throughput of MSW to the combustors and the maximum hours projected for the use of the emergency diesel generator (burning distillate fuel), annual estimates of all GHG emissions for carbon dioxide, methane and nitrous oxides were determined and adjusted based on the global warming potential of each GHG. The proposed GHG BACT limit is based on the use of specific technologies to increase the energy efficiency of the MSW combustors. Those technologies include the following:

(1) Water-cooled grates, which allow the primary air in the combustion zones to be controlled exclusively by the requirements of the combustion process and not on the need for grate cooling, thereby reducing the amount of excess air in the combustion process;
(2) Combustion air preheat system to increase combustion cycle efficiency;
(3) Flue gas re-circulation system, which increases boiler efficiency and reduces the amount of flue gas requiring treatment; and
(4) High steam cycle. Steam will be produced in the boilers at 1,305 psia and 932^{o} F to provide higher steam turbine efficiency that will produce more than

670 net kilowatt-hours (kWh) per ton of MSW combusted.

Based on the use of energy efficient technology and a high steam cycle design, FCCRWTE has proposed a GHG BACT emissions limit of 241 tons of CO_2e per million pounds of steam produced, computed on a 12 month rolling average. The Department has concurred with the proposed limit. Steam production was chosen as a measure of energy efficiency because it is directly and accurately measured. Furthermore, it provides the system operators with the flexibility they need to provide steam for electrical generation and/or supply steam for local district heating.

The Energy Answers Baltimore incinerator is using a processed r=derived fuel ("PDF"), which has a heating value that is approximately 50% higher than typical municipal solid waste. PDF requires less combustion air overall to generate the same quantity and quality of steam for the turbine, resulting in less CO2 generation.

EPA encourages the use of the most accurate emission factor methodologies. MDE did not use EPA's default emissions factor by fuel type of 200 lb/mmBtu for CO2, because in this case, the applicant for the proposed incinerator provided a CO2 emissions factor, based on data obtained from the vendor of the boiler, Hitachi Zosen. That data included the specific fuel to be used (municipal solid waste plus 10% treated sewage sludge), which has a carbon content of 33% as opposed to 24.7% carbon content for EPA's default CO2 emission factor; a project-specific higher heating value [5047 Btu/lb], and specific boiler combustion processes as well as measurement errors and combustion efficiency differences under all operating loads.

Pages 4-66 through 4-68 and Table B-10 in Appendix B of the final PSD application describe the origin of the annual GHG BACT limit.

According to the applicant, the boiler vendor determined that using the fuel input of MSW plus 10% treated sewage sludge at Load Point N (343.7 mmBtu/hour) of the boiler heat balance produces 241.8 lb/mmBtu CO2. This represents, according to the applicant, a boiler operating at its most efficient condition, just after a routine maintenance outage and boiler cleaning event and does not represent continuous operation between maintenance outages when boiler efficiency routinely decreases as the boiler tubes foul.

These efficiency decreases were accounted for by assuming that over the course of the annual 12-month rolling average period, there could be a 10% combined flue gas flow and CO2 measurement error; an 8% loss of boiler efficiency due to routine boiler fouling during each operating

cycle; and an 8% combustion efficiency loss during low load operation (deviation at Load Point N). Using root mean square error to sum the errors (15.1%), the applicant determined the annual CO2 emission factor to be 278.2 lb/mmBtu.

According to the applicant, numerous combined cycle natural gas fired project GHG BACT analyses (e.g., Calpine Garrison, DE and Calpine Russell City, CA) have used a heat rate design margin and equipment degradation factors to determine long term emissions and efficiency of operations. The equipment heat rate degradations included combustion turbine performance degradation (between major overhauls) and auxiliary plant equipment efficiency losses over time. They have typically shown a degradation of a "new and clean" base heat rate of 12.8%. With a more complex process design, larger fuel variability/flue gas flow variability due to boiler fouling, use of MSW and the possibility of lower load operation, the applicant determined that the 15.1% margin was within best engineering practice judgment for the FCCRWTE MSW combustors.

EPA's emission factors for CH4 and N2O in 40 CFR Part 98, Subpart C, Table C-2 are identical for all fossil-fuel derived (MSW, petroleum coke (solid), plastic and tires), and biomass fuels. Table B-10 of the PSD application indicates that CH4 and N2O are approximately 1.5% of the total CO2e emission rate of the municipal waste combustors. Since these make up such a small percentage of the total GHG emissions, use of these generic emission factors was determined to be adequate.

b. MDE must revise the draft PSD permit to clarify the compliance demonstration method for the GHG limit.

Response

The PSD Approval requires FCCRWTE to install, operate, maintain and calibrate CO_2 CEMS from each MWC. The PSD Approval further requires FCCRWTE to maintain records and supporting documentation and combined MWC mass emissions of CO_2 for each calendar month and each rolling 12-month period.

c. MDE must revise the PSD permit to state that the GHG limit applies to biogenic and non-biogenic emissions.

Response

There is no exemption in the PSD approval for biogenic emissions.

Comment # 14 -- Preconstruction monitoring data for NOx, CO, SO_2 and PM10

MDE should require the NEA to submit preconstruction monitoring data for NOx, CO, SO2 and PM10; the commenter references the January 22, 2013 D.C. Circuit Court of Appeals decision in *Sierra Club v. EPA*

Response

The PSD regulations for these pollutants require an ambient air quality evaluation that involves the analysis of monitored concentrations in the vicinity of the PSD source if model predicted source impacts are greater than the monitoring *de minimis* value for each criteria pollutant. If representative monitoring data are not available, a PSD source may be required to collect pre-construction ambient data for up to a year. However, if impacts are below the *de minimis* values specified in 40 CFR §52.21(i)(5)(i), the regulatory agency may exempt a source from the pre-construction monitoring requirement. MDE-ARMA compared the impacts from the criteria pollutants with a significant emissions increase from the project to the ambient air monitoring de minimis values and confirmed that the ambient impact for each criteria pollutant with a significant emissions increase is less than the prescribed *de minimis* level for each pollutant. Therefore, preconstruction monitoring is not required.

With regard to the January 22, 2013 decision in *Sierra Club v. EPA*, the court in that decision determined whether EPA had authority to adopt a significant monitoring concentration for PM 2.5. The court did not rule on preconstruction monitoring requirements for the pollutants identified in the comment.

Comment #15 – Air Quality Impacts

MDE must ensure that NEA has analyzed the impact of all allowable emissions on PSD increments and the NAAQS.

a MDE must define the incinerator's "Maximum Continuous Rating" and must revise the permit to limit the incinerator to operation under modeled conditions.
b MDE must identify which SO_2 emission rate was used in evaluating SO_2 impacts on short-term air quality standards.

Response

a. The fact sheets and application documents incorporated by reference include calculations of short term emission rates and total annual emissions based on the concentration limits provided in the PSD Approval and PTC.

The "maximum continuous rating" or "MCR" is the design heat input of the combustor based on the fuel/waste throughput (e.g., pounds per hour),

multiplied by the average heating value of the fuel/waste. For the FCCRWTE incinerator:

MCR = 750 tons/day * 24 hrs * 2000 lbs * 5500 Btu/pound = 343,750/hr = 343.8 MBtu/hr.

Table B-21 Fuel Consumption Rates of the PSD permit application defines the 100% Maximum Continuous Rating as 343.8 MMBtu/hour per unit when combusting 750 tons per day of 5,500 Btu/lb (HHV; higher heating value) municipal solid waste/tires/sewage sludge and operating 8760 hours per year. The Department has amended the NSR approval, PSD approval, and the Permit to Construct to define each combustor as having a Maximum Continuous Rating of 343.8 MMBtu/hour. The short-term operating conditions will be limited to 110% MCR [378.1 MMBtu/hour per unit] which is the operating scenario evaluated for all short-term (1-Hour, 3-Hour, 8-Hour and 24-Hour) dispersion modeling impacts.

b. The requested identification is in the PSD application. The application used the 24 ppmdv SO2 emission rate at 110 percent of Maximum Continuous Rating for all short-term (1-Hour, 3-Hour, 8-Hour, 24-Hour) modeling impacts. [See page 7-2 (third paragraph), Table 7-1 (Combustor Operating Scenario Analysis- AERMOD Dispersion Modeling Results), and Table B-4 (110 percent of Maximum Continuous Rating (MCR) Short-Term Average Potential Emission Rates and Page 9 of Appendix H SUPPLEMENTAL AIR QUALITY IMPACT ANALYSES 1-HOUR NO2 AND SO2 IMPACTS (Section 3.0) of the PSD application].

SECTION II, Subsection 2: Responses to Georgetown University Law Center, Institute for Public Representation

The following air related comments were received from a single organization – the Georgetown University Law Center, Institute for Public Representation.

Comment 1 Potential to emit SO_2.

a. The proposed permit misstates the facility's potential to emit SO_2 at maximum capacity.

Response

Table 3-2 of the PSD application clearly summarizes the estimated maximum annual emissions for all the regulated pollutants of concern, including SO_2. The detailed emissions associated with each piece of equipment or activity are shown in Appendix B of the application. These facility-wide annual emissions have been included in a new Table 4 of the PSD approval as a federally

enforceable emission limit. FCCRWTE will be a synthetic minor for SO2 NA-NSR. FCCRWTE must demonstrate compliance with SO_2 emission standards through the use of SO_2 CEMS which will allow the Department to ensure that the facility does not exceed NA-NSR applicability thresholds or PSD BACT limits.

b. Potential to emit calculations are inadequate because they do not include fugitive emissions from truck traffic. Fugitive emissions must be considered in determining the major status of a large municipal waste incinerator."

Response

The commenter is partially correct -- fugitive emissions from stationary sources of air emissions must be included in PSD or NA-NSR applicability determinations for municipal waste combustors. Trucks are not considered stationary sources and, therefore, are not included in PSD or NA-NSR applicability determinations.

c. The basis for calculating the potential to emit is inadequate.

Response

The commenter does not indicate why it believes the basis for calculating the potential to emit (PTE) is inadequate. Regardless, the emission calculations are detailed in Appendix B of the application. The basis for the estimates are summarized in the prelude to Appendix B as follows: "The emissions data provided in Appendix B are based on preliminary engineering and design information provided by Wheelabrator Technologies, Inc, the project developer and operator; the supplier of the municipal solid waste combustor equipment; and Burns and Roe Enterprises, Inc …. This information was used by ECT (consultant to the applicant) to prepare the Appendix B emission tables." .

Comment #2 - Fuel Mix Assumption

The commenter states that "A revised permit application should explain the assumptions made about the fuel mix and the sources of the data used to calculate potential to emit for the full range of pollutants."

Response

FCCRWTE has proposed to process Municipal Solid Waste (MSW) that is generated in households, commercial establishments, institutions, and businesses. The MSW will include garbage, trash, rubbish, used paper, discarded cans and bottles that have not been separated for recycling, food scraps, yard trimmings, and other items that are normally collected from

residential, commercial, industrial, governmental, or institutional establishments. FCCRWTE has also proposed sewage sludge and tires as an acceptable and processible solid waste, as permitted.. By its very nature, it is a heterogeneous waste mix that can fluctuate. Irrespective of the heterogeneous characteristics of the waste stream, MWCs are constrained by a MSW throughput limit as well as a maximum continuous rating limit. In addition, FCCRWTE is required by Federal and State regulations, and the PSD BACT determination in particular, to meet an array of federal and State emission standards. As a consequence, the design of the MWC and the various air pollution control devices are designed to achieve and maintain continuous compliance with the emission requirements, even if the solid waste stream should fluctuate. (See also response to Comment #1 of this subsection).

Comment #3 – SO_2 emissions

"The PSD permit application similarly fails to explain why the annually averaged and short-term SO_2 emission rates vary so significantly, or why the lower annual rate was chosen for the SO_2 potential to emit."

Response

In contrast to typical fuels like distillate fuel oil, natural gas, or spec coal, the sulfur content of MSW can vary significantly over a short period of time. Consequently, the permitted short term emission standard is based on the highest projected short term emission rate. In contrast, the projected annual emissions are more reflective of the anticipated average sulfur content of the waste stream. The values assumed by the applicant are not significantly different from other MWC projects. Furthermore, all proposed emission limits are at least as restrictive as prescribed Federal and State emission limitations and the facility is, therefore, expected to comply with all Federal and State emissions standards.

The annual rate for the SO_2 potential to emit was calculated in accordance with the requirements of the federal PSD regulations at 40 CFR 52.21.

Comment #4 – Toxic pollutants

II. Applicants have miscalculated annual ambient impacts for several toxic air pollutants.

"Because the facility's emissions at 110% capacity will be higher than those at 60% capacity, the applicant must recalculate the ambient impacts of toxic emissions assuming a 110% MCR [maximum continuous rating] scenario."

Response

MDE-ARMA conducted its own independent review for compliance with State air toxics regulations and confirmed that the proposed project easily complies with the maximum allowable ground level concentration for each toxic air pollutant. (See Table 2 of the MDE-ARMA Permit to Construct Fact Sheet.)

With respect to the MWC Maximum Continuous Rating, since federal rules allow municipal incinerators to operate at 110% of the name plate capacity, it is incumbent upon the applicant to demonstrate that emissions associated with the highest operating level will not cause or contribute to a violation of any national ambient air quality standard (NAAQS). Since worst case air quality impacts are directly linked to the maximum continuous operating rates of the combustors, FCCRWTE used the 110% operating rate as the basis for demonstrating compliance with the NAAQS, in particular the short term 1-hour standard for NO_2 and SO_2. MDE-ARMA confirmed the adequacy of that demonstration. Similarly, as shown in Table B-4, the analysis for air toxics was conducted at an assumed operating rate of 110% of the design throughput.

Comment #5 – Dioxins/furans

The proposed permits' heavy metal and dioxin/furan monitoring requirements are inadequate.

a. FCCRWTE's proposed permit must require more frequent monitoring

b. Annual stack testing of cadmium, lead and dioxins/furans is inadequate.

Response

The requirements for pollutant testing and monitoring are detailed in Table 1 of the proposed PSD approval, including requirements for cadmium, lead, and dioxins/furans. Specifically, Table 1 has been amended to include how the facility is to achieve and maintain continuous compliance with the standards for each regulated pollutant. While all pollutants will undergo routine annual tests, continuous emission monitoring technology is not available for certain pollutants like cadmium, lead and dioxins/furans. As a consequence, FCCRWTE will have to perform parametric monitoring to ensure that the combustors will be in continuous compliance with the applicable standard. A parametric monitoring system measures a parameter (or multiple parameters) that is a key indicator of system performance. The parameter is generally an operational parameter of the process or the air pollution control device (APCD) that is known to affect the emissions levels from the process or the control efficiency of the APCD. For example, parametric monitoring for lead and cadmium will include monitoring the pressure drop indicator across the fabric filter control device, making use of a broken bag detector, and monitoring the

inlet flue gas temperature. For dioxins/furans, parametric monitoring will include monitoring the carbon injection flow rate as well as the inlet flue gas temperature.

c. The proposed permits do not adequately specify mercury monitoring requirement or explain the rationale for the proposed heavy metal monitoring regime.

Response

To demonstrate compliance with the annual mass limit for mercury, FCCRWTE must install on each combustor either a continuous emissions monitoring system for mercury or a sorbent trap mercury monitor. The general requirement to install a mercury CEM is contained in the PSD approval, Part E, Condition 1. A more detailed monitoring description is presented in the PSD approval, Table 1 – Summary of BACT Requirements.

d. MDE must revise its permit approval because it has not specified the monitoring regime for mercury.

Response

Emissions of mercury were analyzed as part of the PSD pollutant review of MWC Metals which include cadmium (Cd), lead (Pb), and mercury (Hg). (See "Review of Prevention of Significant Deterioration Approval Application"). With respect to Hg, NSPS Subpart Eb sets a numeric emission standard for Hg at 50 ug/dscm corrected to 7% O_2 or 85% removal efficiency, whichever is less stringent. However, this limit is superseded by a more stringent PSD BACT limit established at 17 ug/dscm, corrected to 7% O_2. Compliance with the short term Hg standard shall be demonstrated by using EPA Reference Method 29, except as prescribed in 40 CFR 60.58b(d)(4).

The Permit to Construct provides that, based on the short term emission rate of 17 ug/dscm, the annual Hg emissions from the facility cannot exceed 92 pounds in any consecutive 12 month rolling period. The Permit to Construct further provides that in the event the Hg mass emissions exceed 92 pounds during any consecutive 12 month period, the FCCRWTE must secure the services of an independent environmental consultant to perform an optimization study of the Hg control technology and prepare a report that includes recommendations for improving the efficiency of the control technology. Upon MDE review and approval of the report, the FCCRWTE is obligated to implement the report recommendations within 60 days unless MDE agrees to an extended implementation schedule.

Under the Permit to Construct, in order to demonstrate compliance with the annual mass limit for Hg, the FCCRWTE must install one of the two Hg monitoring options described below:

a. A continuous emissions monitoring system for Hg on each combustor in accordance with 40 CFR 60.58b(d)(4); or
b. A sorbent trap Hg CEM installed and operated in accordance with Performance Specification 12B.

Finally, as part of a mercury mitigation project involving public outreach, the FCCRWTE is required to establish a memorandum of understanding (MOU) between MDE-ARMA and the FCCRWTE prior to the commencement of construction. The MOU will include a provision requiring the FCCRWTE to contribute $30,000 annually for a period of ten years for the purpose of achieving the specific goals established in the MOU.

Comment #6 – Sewage Sludge and Tires

The proposed permits must set limits on the amount of sewage sludge and scrap tires it will accept. MDE must set enforceable limits to ensure that the facility operates as a municipal waste combustor.

Response

Pursuant to subsection 129(g) of the Clean Air Act, to qualify as an incineration unit burning municipal waste for purposes of section 129 or section 111 of the Act, the unit must combust a fuel feed stream of which more than 30 percent of its weight is comprised, in the aggregate, of municipal waste. Clean Air Act regulations pertaining to large municipal waste combustors at 40 CFR Part 60, Subpart Eb, apply to the FCCRWTE incinerator. Under section 60.51b of these regulations, municipal waste includes tires, but does not include sewage sludge. The Permit to Construct identifies this regulation as applicable to the FCCRWTE facility. Therefore, under the applicable statutory and regulatory provisions, as well as the Permit to Construct, the portion of FCCRWTE's fuel feed stream that may be comprised of sewage sludge is limited.

Additionally, FCCRWTE must operate the facility in a manner that will continuously comply with the applicable air quality emission limits.

See also the response to Comment 16(f)(iii) in Section IV of this document.

Comment #7

The proposed permits must set minimum standards for imported waste.

Response

See responses to Comments 3 and 16.b.2 of Section IV of this document.

Comment #8 – Alternative site analysis

The PSD permit materials do not provide a sufficient alternative analysis.

Response

The PSD program does not require an alternatives analysis. However, the alternatives analysis is a requirement under non-attainment New Source Review. COMAR 26.11.17- Nonattainment Provisions for Major New Sources and Major Modifications contains the following specific requirements under COMAR 26.11.17.03(B)(6). The applicant must conduct "An analysis of alternative sites, sizes, production processes, and environmental control techniques for a proposed source [that] demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification."

The alternatives analysis is discussed in Section VIII of the Nonattainment New Source Review Tentative Determination.

Frederick County, in its application, did conduct the required analyses. Per the application, the Frederick County Board of County Commissioners evaluated eleven sites for location of the proposed incinerator. Most of these sites were eliminated because of lack of access or distance to suitable and reliable non-potable water sources, inadequate land area for the facilities and/or buffers, and distance to electrical interconnection.

The final site was selected based on the following criteria:

a. Proper zoning;
b. Convenient access to the electric transmission system either via a 34.5-kV transmission lime from FCCRWTE to the adjacent power line along the railroad tracks or by a 230-kV transmission line from the Facility switchyard to Allegheny Power's Lime Kiln substation, approximately 2 miles away.
c. Adequate supply of potable water from Frederick County and non-potable water for processes and cooling water tower makeup water from the wastewater treatment plant.

With regards to alternative production processes, the applicant evaluated various options and determined that a "1,500-tpd regional waste-to-energy facility would result in the lowest net present value cost to Frederick County

over a 20-year planning period. The cost of long-haul transfer was evaluated as more expense than the selected option of a 1,500-tpd waste-to-energy facility that would serve both Frederick and Carroll Counties."

The FCCRWTE incinerator's air emissions will comply with all applicable Maryland air quality regulations and Clean Air Act requirements, including LAER, NSPS, and BACT .

Section 5.2 of the application contains a detailed Benefit-Cost Analysis of the project. Frederick County provided an analysis of eleven alternative sites and a detailed analysis as to why the County selected the proposed site. MDE believes this alternatives analysis fulfills the requirements of COMAR 26.11.17.03(B)(6), and the requirements of section 173(a)(5) of the Clean Air Act.

Comment #9 – Carroll County

Wheelabrator and the Authority must account for Carroll County's pending withdrawal.

Response

MDE is not privy to the details of the contractual arrangement between the Authority, Frederick County and Carroll County; and knowledge of that agreement is not a prerequisite for conducting the necessary project review, ensuring that compliance can be achieved, and issuing the required MDE permits and approvals.

Comment #10 – Material separation Plan

The Best Available Control Technology Determination for Greenhouse Gases must include waste separation and limits on the recyclable content of waste.

A. MDE must consider waste separation as a fuel-cleaning technology.

The commenter states that "EPA has long recognized waste separation as BACT for municipal waste combustors (MWCs) and "a proper BACT analysis requires consideration of all potentially "available control technologies."

1. Separation programs targeted at fossil carbon and nitrogen-containing materials would target greenhouse gas emissions
2. Waste separation would calculably reduce GHG emissions
3. Waste separation would not redefine FCCRWTE

B. MDE must revise its BACT analysis of clean fuels to include separated waste.

1. Maryland law does not require FCCRWTE to qualify as "renewable" in order to operate.
2. Municipal waste is not clean.
3. MDE's "clean fuels" analysis must consider separated waste as a control technology.
4. The waste separation program chosen must impose some responsibility for separation on the applicant.

C. Waste separation is not only an available technology, it is the best available technology for GHG reduction

Response

The Department conducted the proper "top down" BACT analysis referenced in the comment for all pertinent pollutants—including GHG--and selected energy efficiency measures as BACT for GHG. The Department does not agree that a municipal waste combustor which meets the federally established NSPS/MACT standards for municipal waste combustors, including the preparation of a Material Separation Plan, must be required to conduct additional materials separation as BACT for GHG.

FCCRWTE included Appendix E- Material Separation Plans and Public Review Documentation as part of its air permit applications, as required by 40 CFR Part 60 Subpart Eb, New Source Performance Standards, Section 60.57b. The final MSP discusses Materials Separation Programs in Frederick and Carroll Counties including 1) Single-Stream recycling, 2) Business recycling, 3) Yard Waste Composting, 4) Household Hazardous Waste collection programs, 5) Waste Oils/Antifreeze recycling, 6) Electronics, 7) Scrap Metals/Recyclable White Goods and 8) Education/Awareness/Outreach.

As stated in the Final Draft Materials Separation Plan, "Through the reduction, reuse, and recycling strategies described herein, a considerable amount of materials will be separated, reused, and recovered for recycling purposes prior to entering the MSW stream. Only nonrecycled solid waste will be delivered and processed at FCCRWTE, where it will be used to generate clean, renewable electricity for potential use at the government facilities of Frederick and Carroll Counties.

More specifically:

"Acceptable and processible solid waste will include all municipal solid waste except the following:

a. Source-separated yard waste (grass, leaves, branches, twigs and brush).
b. Acceptable recyclable material collected as part of any recycling program in the solid waste management collection areas.
c. Bulk loads of construction and demolition waste." [PSD application; Page 2-6]

The material separation programs currently in place are identified in Sections 3.2 (Frederick County) and 3.3 (Carroll County) of the Material Separation Plan (MSP)[Appendix E of PSD application]. These include:

- Single-Stream Curbside Recycling
  - Glass
  - Plastics
  - Metal
  - Paper/cardboard
- Additional Recyclable Programs (varies by county)
  - Fluorescent bulbs and tubes
  - Bulky/Oversized Rigid Plastics, grocery bags, DVD/CD cases and disks.
  - Automotive Materials
    - Lead Acid Batteries
    - Waste Oils/Antifreeze
    - Large rigid, plastic car parts
  - Flexible Foam
    - Foam carpet padding
    - Foam couch cushions
    - Foam-only mattresses
  - Reusable Clothing
  - Appliances/Scrap Metal
  - Concrete/asphalt smaller than 6 inches in diameter
- Yard Waste Composting/Mulching
- Household Hazardous Waste
- Tires
- Electronics
- Ash Metal Recovery (ferrous and non-ferrous)[through FCCRWTE]"

Moreover, some additional waste separation will occur at the incinerator. For example, see response to comments in Section IV of this document, specifically Comment 16(c), pertaining to Part III, General Condition A of the Refuse Disposal Permit, which discusses the handling, at the facility, of large metal objects, appliances containing chlorofluorocarbon (CFC), and radioactive items. The response to comment 16(b), pertaining to Part II, Facility Specific Condition E of the Refuse Disposal Permit discusses the facility's Mercury Diversion Plan which includes visually identifying mercury containing items on the tipping floor and isolating them from the waste stream to be incinerated.

With regard to "clean fuels", EPA "Guidance for Determining Best Available Control Technology for Reducing Carbon Dioxide Emissions From Bioenergy Production" dated March 2011 states the following:

> "The CAA includes "clean fuels" in the definition of BACT. While clean fuels that would reduce GHG emissions should be considered, EPA has recognized that the initial list of control options for a BACT analysis does not need to include "clean fuel" options that would fundamentally redefine the source. Such options include those that would require a permit applicant to switch to a primary fuel type (e.g. coal, natural gas, or biomass) other than the type of fuel that an applicant proposes to use for its primary combustion process."

The comment asserts that the applicant could make the waste-to-energy incinerator's fuel stream (municipal solid waste) "clean" by conducting additional materials separation at the incinerator. As previously stated, pursuant to the Materials Separation Plan submitted in the PSD application, the waste arriving at the incinerator to be used as fuel will have already undergone materials separation, in an effort to remove recyclables, hazardous materials, yard waste and other materials, and once the waste arrives at the incinerator, the facility will further inspect the waste, and additional materials separation will occur.

See also the response to Comment 2 in Section IV of this document.

Comment #11 – NOx Offsets

The permit application fails to identify offsets for NOx emissions

Response

In accordance with COMAR 26.11.17.03B(5), the applicant is not required to purchase emission reduction credits (ERCs) before a permit is issued. However, the Permittee must either purchase the ERCs outright or own the option to buy the ERCs prior to the commencement of construction. If the option to buy is in effect, it must be exercised prior to the commencement of operation of the affected unit(s). Further, documentation regarding the status of the ERC requirement must be submitted to MDE before commencing construction.

Comment #12

The Refuse Disposal Permit does not specify disposal sites for ash.

Response

Although the Refuse Disposal Permit does not require identification of specific sites where the ash must be disposed of, it does specify that the permittee may dispose of incinerator ash, if evaluated to be non-hazardous and free of liquid, at permitted municipal landfills which are in compliance with current design standards. The permittee does not expect the incinerator ash to be hazardous; if it is, then it must be disposed of at a permitted hazardous waste disposal facility. See also response to Comment 9 in Section IV of this document.

SECTION III
Responses to comments on water related permits

Comment 1 - Deny the discharge permit.

There were a number of comments that expressed opposition to the construction of the facility, and recommended that the Department deny the permit.

Response

The Department has no authority to summarily deny issuance of the requested National Pollutant Discharge Elimination System (NPDES) permit without a basis. Reasons to withhold issuance of a permit application are described in 40 CFR 122.4 (Code of Federal Regulations) and COMAR 26.08.04.02 (Code of Maryland Regulations). If a proposed discharge can comply with the provisions of the Clean Water Act (CWA), then the Department is obligated to issue the permit. In this regard, the Department's final determination is that the project can meet all applicable requirements and, as such, the Department must issue the permits and approvals.

Comment 2 - Deposition of pollutants

The permit does not address pollutants in air emissions from the smokestack that will fall to earth and into State waters either directly or in storm water runoff.

Response

The CWA, by means of the NPDES permit, regulates direct point source discharges to State waters only. A point source is a pipe or comparable conveyance discharging water directly into a water body or a storm drain that carries the wastewater to State waters. The USEPA has repeatedly confirmed that air emissions are not a point source and are thus not subject to NPDES permitting.

Air quality related issues, including air emissions from the smokestack, are comprehensively addressed in the ARMA Final Determinations for the air

quality Prevention of Significant Deterioration approval, the Non-attainment New Source Review Approval, and the Permit-to-Construct. Furthermore, similar questions concerning stack emissions that were raised during the public hearing are specifically addressed in SECTION II.

Comment 3 - Temperature of discharge

There were several comments made regarding temperature. They included suggestions that the Department should not allow the discharge of 90°F (or even 80°F) water, concerns that the discharge would raise the temperature of the Potomac, concerns about the cumulative effect of other warm discharges, concerns that elevated temperatures would deplete dissolved oxygen in the Potomac and, in a statement that there is no river in the mid-Atlantic that has 90°F water, concerns about the propriety of a 90°F limit.

Response

All permit limits must reflect use of the best practical pollution control technology available and must protect the receiving water quality for its given uses. There are no technology standards for temperature, but there are receiving water quality standards. For Use I waters (which describes all of the nontidal, main stem Potomac) the standard is a maximum of 90°F or the ambient temperature of the river, whichever is greater. This standard applies at the end of a mixing zone described in COMAR 26.08.03.03-05. This standard was developed by a search of available literature on harmful effects and a statistical analysis of the data, and completed by adding a margin of safety. Therefore, while the standard is used as the basis for a binding limit in a permit, a waterway that is at or slightly exceeding the standard does not result in a harmful outcome.

A limit of 90°F or ambient (whichever is greater) is appropriate because it will not result in harm to the river. Temperature is limited in this permit because the water to be discharged will have been used for cooling. This is consistent with the Department's practice of selecting parameters to limit based on what the industrial process does or might generate. The decision to include a limit does not necessarily mean or imply that there is a significant risk of harm to the receiving water.

Inside the heat exchange system, the influent water will be raised to about 86°F normally, with a maximum of 130°F, after cooling the condensers at the power plant. Regardless of the peak temperature, that water will be cooled in the cooling towers to a maximum of 90°F and then travel ten miles through a buried pipe, where some level of geothermal cooling will take place. The Department therefore expects that this discharge will rarely reach 90°F.

Furthermore, even if the effluent temperature of this discharge reached 90 degrees or higher, it would not affect the Potomac River due to instantaneous mixing on reaching the Potomac. At seven-day, ten-year low flow, a worst-case condition that is the basis for protection of aquatic life, the Potomac River flows at 555,600,000 gallons per day (USGS gauge at Pt. of Rocks), which means the stream flow to effluent ratio is 1389:1. The resultant immediate temperature rise would be too small to measure. The driving forces in river temperature are air temperature, duration and angle of sunlight, and, intermittently, inflow from major rainfalls. There would be no long-term change because the effects would be superseded by the dynamics of these ambient influences.

There is only one other thermal discharge on the Potomac River between the proposed discharge and tidewater, and that is GenOn's Dickerson Station, the discharge from which includes the effluent from the Montgomery County WTE facility. This discharge has been thoroughly studied, and the results have demonstrated that the river rebounds to slightly above ambient temperature within a few miles.

Regarding the dissolved oxygen levels, if the river were 90°F at the altitude of the discharge (about 200 feet above sea level) the solubility of oxygen would be about 7.2 mg/l, well above the dissolved oxygen water quality criteria of 5.0 mg/l. Furthermore, as stated above, this standard has a significant margin of safety.

Regarding the statement that no mid-Atlantic rivers are above 90°F, making this limit inappropriate, this statement is inaccurate. The Potomac River itself has repeatedly exceeded this temperature. The City of Brunswick monitors the Potomac at its water plant intake (a point about ten miles upstream of the proposed discharge). A review of recent records revealed that the river temperature exceeded or was equal to 90°F seven days in 2012 (getting as high as 91.4°F), 11 days in 2011 (getting as high as 91.4°F), and one day in 2010. The USGS monitors the river's temperature at its gauging station at Little Falls, just above Washington, D.C. A review of recent records revealed that the river exceeded or was equal to 90°F nine days in 2012 (getting as high as 93°F), 12 days in 2011 (getting as high as 95°F), and 21 days in 2010 (getting as high as 95°F). The USGS also monitors the James River above Richmond, Virginia, at Cartersville. Those records revealed that the river exceeded or was equal to 90°F 14 days in 2012 (getting as high as 95°F), 17 days in 2011 (getting as high as 97°F), and 24 days in 2010 (getting as high as 94°F). Even headwater USGS monitoring stations on the Cacapon River at Great Cacapon, West Virginia and the South Branch Potomac at Springfield, West Virginia commonly reach the upper 80s°F and occasionally top 90°F in late July and early August.

Comment 4 – Toxic pollutants

There are a variety and great quantity of potentially harmful pollutants that are going to be discharged from the process. Other comments described waste incinerators in general as sources of toxic wastewater.

Response

This permit authorizes the redirection of an existing discharge of up to 1.2 million gallons per day of Frederick County's Ballenger-McKinney Wastewater Treatment Plant effluent from the Monocacy River to the Potomac River, in reduced quantity, via a sewer that was expressly constructed for the purpose of conveying Ballenger-McKinney and Eastalco effluent. All toxics are those already associated with the treated municipal wastewater effluent and are present in trace amounts so low that they are below standards of treatability. The activities at the proposed facility will add only temperature and chlorine (which will be removed by dechlorination prior to discharge) and, to a small extent, will reduce some pollutants in the water that is to be discharged. The discharge will include only noncontact cooling water. "Noncontact" means that the cooling water will be confined to stainless steel tubes and hence there will be no opportunity for entrainment of pollutants from the facility. Also, because stainless steel is used, there will be no contamination from corrosion, as with copper or galvanized heat exchange media.

Comment 5 – Dilution of pollutants

The permittee should not be allowed to achieve compliance by dilution (the context of this remark was regarding trace heavy metals).

Response

An NPDES permit must require that all effluents shall have their pollutants minimized to the greatest extent practicable and economically achievable, regardless of how insignificant these pollutants might be, and must be minimized even more if necessary to protect receiving water quality. We call the former technology-based standards and the latter water quality based standards. Dilution is not allowed in technology-based standards, because the standards are a measure of the permittee's ability to remove or keep out those pollutants. However, when we reviewed the effluent quality of the facility's discharge, we determined that the concentrations of pollutants were already below any treatability standard. Thus the only question is whether the receiving water quality standards could be met.

For protection of water quality, mixing with the greater volumes of the clean river is allowed by both the Clean Water Act regulations 40 CFR 122.44.d and Maryland's water pollution regulations, COMAR 26.08.02. For protection of

aquatic life, that allowance is contingent on mixing being almost instantaneous. The existing diffuser outfall is designed to achieve this. In summary, both the load and concentration of metals in the Potomac will be insignificantly increased below the point of discharge and will be decreased below the confluence of the Monocacy River because of consumptive use of wastewater that would otherwise be discharged to the Monocacy River.

Comment 6 – Temperature effect on chemical composition

The heating of the sewage effluent may cause changes in the chemical composition of the effluent.

Response

The water use will only briefly elevate the water to 86°F on a regular basis and, under the worst conditions, to 130°F. These temperatures are in the heat exchangers, not the point of discharge to the river. There is no reason to expect that this would drive any new chemical reactions. Any effect on biological growth will be addressed by chlorination.

Comment 7 – Self-monitoring

There are concerns about the veracity of results from self-monitoring.

Response

Self-monitoring and regular reporting of the results are required by the Clean Water Act. Judging by the number of excursions reported most permittees report honestly. Additionally, the Department regularly inspects its permittees and has limited ability for testing. While that is no guarantee of compliance, it does serve as a deterrent for risk-adverse permittees. Another consideration is that permittees who have invested considerable sums of money in their facilities and treatment systems do not want to risk monetary penalties and/or the cost of litigation. Finally most permittees do not want to sully their reputations. For them, effluent monitoring is a quality control measure that goes with doing business.

Comment 8 – Toxicity concerns

There are concerns about toxicity to those who engage in downstream water contact recreation or consumption of fish caught in downstream waters.

Response

The change proposed by this permit will not increase risk to downstream users. All chemical pollutants associated with this discharge are currently being

discharged to the Potomac River, via the Monocacy River, as effluent from Frederick County's Ballenger-McKinney Wastewater Treatment Plant. As proposed, the plant will extract as much as 10% of the pollutants currently discharged, so water quality in the Potomac will improve slightly.

Comment 9 – Pollutants from Eastalco

The discharge will pick up pollutant residuals from Eastalco, the former aluminum smelter, which discharged via the same county sewer as proposed for the waste to energy discharge.

Response

The discharge is unlikely to pick up pollutant residuals from Eastalco because while Eastalco ceased all operations in 2009, the sewer has continued to carry storm water from the site, which would likely have scoured the pipe of any residuals. Furthermore, in the unlikely event that there are any significant residual pollutants on the sewer surface from the former aluminum smelter, these would all be pollutants that were authorized for discharge under that facility's discharge permit. If these are flushed, the duration will be short, the concentrations well below what was authorized in the discharge permit, and the daily load far less than was allowed in the permit.

Comment 10 – Contaminated washwater

There was concern about the discharge of contaminated washwater from inside the facility.

Response

The only wastewaters proposed by the applicant for discharge and authorized by the proposed permit are noncontact cooling water and storm water. The applicant has stated in its application that washwater will be treated and then used for ash management.

Comment 11 – Cooling tower additives

There was concern stated about additives used in cooling towers, with sodium bisulfite and corrosion inhibitors specifically cited.

Response

Adjustment of water chemistry is essential in cooling towers to prevent scale build-up, corrosion, and biological growth. The applicant proposes to use chlorine as its biocide, and that will be destroyed by dechlorination. Other additives are yet to be determined and, even if they were already selected, they

would change over time. To address that situation, the permit includes a special condition directing the permittee to provide information to demonstrate that the product will not result in aquatic toxicity. Other than biocides, most modern cooling tower materials have low toxicity.

Comment 12 – Dissolved oxygen levels

There was a question about what the discharge would do to dissolved oxygen in the Potomac. Maintaining dissolved oxygen levels in the river is essential for fish and other aquatic life.

Response

The Department anticipates no impact on dissolved oxygen for multiple reasons. The wastewater will leave the facility well-aerated after being agitated in the cooling tower. While elevated temperature reduces the solubility of oxygen in water, as discussed above, the effluent temperature will be close to the water quality standard. That means the solubility of oxygen will be about 7 mg/l compared to the water quality standard of 5 mg/l. The anticipated biochemical oxygen demand (BOD) from Ballenger-McKinney WWTP is low. Finally, both the greater volume of the Potomac and its reaeration capacity will assure no measurable drop in downstream dissolved oxygen.

Comment 13 – Products of combustion in the wastewater

What products of combustion will be in the wastewater?

Response

No products of combustion will be in the wastewater. All wastewater is used for noncontact cooling, which means it is segregated from the process by the stainless steel tubes through which it passes.

Comment 14 – Anti-degradation

The discharge would conflict with the anti-degradation policy described in COMAR 26.08.02.04.

Response

Both the Potomac and Monocacy are Tier I waters. For Tier I the requirement states that “Waters of this State shall be protected and maintained for existing uses and the basic uses of water contact recreation, fishing, protection of aquatic life and wildlife, and agricultural and industrial water supply as identified in Use I. “ As explained in the permit fact sheet, all limits easily achieve these protections. The commenter appears to be citing requirements for Tier II waters

instead, which have been recognized as high quality waters, and does not apply to this discharge. The proposed discharge of cooling water will not conflict with the anti-degradation policy.

Comment 15 – Toxicity testing

There were questions about whether the frequency of biomonitoring is adequate and whether associated schedules are too long, and a request for increasing the testing frequency, shortening deadlines, and commencing steps earlier.

Response

In any permit, toxicity testing (also known as biomonitoring) is applied sparingly as it is an expensive test. Its utility is to determine effects of pollutants not accounted for or synergistic effects. The Department does not anticipate that this discharge will be toxic to aquatic life, but because of the concentration of pollutants caused by evaporation, it is appropriate to require some toxicity testing. The permit includes follow-up procedures to identify and reduce toxic pollutants in the event of unfavorable test results. Regardless of the results, the discharge volume is sufficiently small that it is not going to impair the Potomac River. Therefore, the current schedule for this expensive procedure is adequate and consistent with the Department's protocol to which all dischargers are subject.

As for commencing testing earlier, the present schedule is consistent with Departmental biomonitoring policy, and the lag time is generally needed to develop a plan and receive the Department's approval.

Regarding the possibility of consecutive test results showing toxicity, there is no reason to assume these are representative of ongoing conditions, especially considering that the source of the wastewater is well-treated sewage. As stated above, immediate corrective action is not necessary because the effluent, in the unlikely event that a test shows toxicity, will not be toxic after mixing with the Potomac.

Regarding prefacing the requirement that biomonitoring be coordinated with the worst-case conditions (5-6 cycles) with the qualifier "if possible," that qualification is included because 5-6 cycles will be the exception, not the norm. Therefore, by specifying 5-6 cycles, there is a high probability the permittee would not have an opportunity to obtain all of the required samples.

Regarding the time allowances on the toxicity reduction evaluation, decades of experience has proven that it takes the time allotted to accomplish these steps. Significant time is needed for the technical communications between the

permittee and the Department's biomonitoring staff in order to isolate and correct any causes of toxicity.

Comment 16 – Preventing storm water runoff

There was a question, in reference to the Storm Water Pollution Prevention Plan (SWPPP) requirement, as to how the Department is going to prevent storm water runoff from the facility.

Response

The Department does not propose to prevent all storm water runoff, but rather minimize the potential entrainment of pollutants from the operation in storm water that falls on the facility. Specifically, the SWPPP sets the framework for maintaining a clean workplace in any areas exposed to precipitation.

Regarding storm water volume, in accordance with COMAR 26.17.02, the Department does require minimization of runoff from new facilities, which are now required to follow environmental site design criteria that will reduce runoff.

Comment 17 – Contamination of storm water runoff

There was a concern that facility operations would result in contaminated storm water runoff.

Response

EPA's NPDES storm water permitting regulations (40 CFR section 122.26), do not include incinerators on the list of facilities subject to that regulation. Moreover, waste incineration facilities are not significant sources of storm water contamination, as the Department has observed at facilities similar to the proposed FCCWTE facility in Lorton, VA, Baltimore City, Montgomery County, MD and Harford County, MD. Nevertheless, the Department, citing the similarity of these facilities to other steam electric generating stations (which are identified by EPA as subject to storm water permitting), has included in the permit the standard requirements for industrial facilities to develop and operate under a storm water pollution prevention plan. Such procedures should assure no release of solid waste, ash, or any other pollutants associated with this activity.

Comment 18 – Metal limits and monitoring

There was a question as to why some heavy metals were not limited and why those that are limited are monitored so infrequently (once per quarter).

Response

There is a detailed discussion in the permit fact sheet explaining why metals are not limited. In short, they are not limited because they are present in concentrations lower that any practicable technological treatment standards and below levels that will be toxic to aquatic life or that will affect other uses of Potomac River water. Monitoring is required only to verify that intake water quality assumptions do not change. Changes are unlikely and if they did happen, would occur as long-term trends. The proposed quarterly monitoring is more that sufficient to gauge the long-term trends.

Comment 19 – Scrubber effect of cooling towers

The recognition (in the permit fact sheet) that the cascading water in a cooling tower will entrain some ambient air pollutants was cause for concern by one commenter. The commenter construed the effect as potentially harmful.

Response

From the standpoint of local air quality, the cooling towers are removing, not adding, pollutants. As for regulation of those pollutants in the effluent, this would not be regarded as a new source of pollutant load as those solids are primarily ambient dust and pollen borne in the prevailing winds, not pollutants associated with the facility's activity. These substances would otherwise find their way to the Chesapeake by entrainment in storm water, direct deposition, etc.

Comment 20 – Disposal of ash

There was a concern that the use of water for ash transport and quenching would ultimately result in landfill leachate discharges to the environment once this material is disposed of.

Response

Any landfill in Maryland receiving ash for disposal must have a liner and leachate collection system. Rainwater percolating through the landfill or small amounts of liquids contained in the waste material will be collected on the bottom of the lined landfill by the leachate collection system and removed offsite for further treatment. General Condition Part III.A.3(b) of the refuse disposal permit for municipal landfills specifically prohibits the landfill from accepting liquid waste or waste containing free liquids, as determined by the EPA method 9095 Paint Filter Liquids test, as outlined in the EPA Publication SW-846 "Test Methods for Evaluating Solid Waste, Volume One, Section C: Laboratory Manual Physical/Chemical Methods", Third Edition, dated November 1986, except for small containers contained in household waste only.

General Conditions Part III.D.2 and D.4 of the Refuse Disposal Permit for the incinerator require that the ash and non-combustible material from incineration be sampled and analyzed quarterly to determine the free liquid content of the ash using the Paint Filter Liquids test, and allow the incinerator permittee to dispose of the ash, non-combustibles and other residual solid waste at permitted municipal landfills if evaluated to be non-hazardous and free of liquid.

The ash to be disposed in the landfill will be moistened prior to leaving the waste-to-energy facility to prevent escape of particulate matter during transport, but cannot contain excess liquid that will cause the ash to fail the Paint Filter Liquids test upon receipt at the landfill. The Refuse Disposal Permit Application notes that the water content of the ash will be between 10 and 20%. The landfill permittee is responsible for ensuring that the ash does not contain free liquids and passes the Paint Filter Liquids test as noted above.

Comment 21 – Sewer concerns

There was a concern about the condition of the public sewer that will convey the plant discharge to the Potomac.

Response

The Frederick County Division of Utilities and Solid Waste Management (DUSWM) owns the sewer and is responsible for its operation and maintenance. The DUSWM recently completed an $8.9 million construction improvement project for the outfall that increased its hydraulic capacity and reliability, in addition to other waterline related efforts. This work was completed under Maryland Department of the Environment Water and Sewer Construction Permit #7-11-1060, issued on 11/16/2007. The entire outfall system is constructed of ductile iron pipe, most of which is less than 25 years old. The older (Circa 1968) pipeline(s) are manifolded together to improve hydraulic capacity and system reliability. The improvements that were recently completed on the outfall included connections at several different locations along the outfall alignment. During this construction, inspection of the pipe identified no unacceptable pipeline deterioration or material deposition within the pipe.

Comment 22 – Disinfectant concerns

There was a question about the effects of chlorine or bromine on aquatic life, whether they will be monitored, and whether they can be removed.

Response

As required by COMAR 26.08.03.06C(5), the permit limits the discharge of chlorine to a nondetectable level of less than .01 mg/l. This limit of detectability is specified in COMAR 26.08.03.06D. Though the applicant does

not presently intend to use bromine, the total residual chlorine limit covers that substance also. This will assure that the effluent will not even come close to causing an exceedance of the receiving water criteria for protection of aquatic life (described in COMAR 26.08.02.03-2G) for chlorine. Based on these criteria, the Department has set discharge limits for total residual chlorine in the permit. The permit also requires monitoring to verify compliance with these limits. There is a more detailed discussion of the rationale for the chlorine limitations and monitoring regime in the fact sheet.

Comment 23 – Impacts on Monocacy

The question was asked whether the reduction in flow at Ballenger-McKinney will affect the Monocacy and why the discharge is not being sent back to the sewage treatment plant.

Response

The seven-day, ten-year low flow in the Monocacy at the USGS gauge in Frederick is about 49 cfs, or 31.7 mgd. When one adds the inflows from Carroll Creek, Bush Creek, and the wastewater treatment plant discharge, the effect of this diversion would be a flow reduction of about 5%, a change far smaller than drought-driven swings.

As for why the discharge will not be directed to the sewage treatment plant, the Department has no authority to require this alternative for the same reason that it cannot deny the permit. Please see the response to Section III, comment #1 for an explanation.

Comment 24 – Reuse of wastewater

There was a request for the permit to require reuse of a greater percentage of the wastewater.

Response

The percentage specified in the permit was based on that which the applicant stated they could reliably use. They will use more when they can as there is a monetary incentive to do so, rather than purchase water from the county for the same use.

SECTION IV
Responses to comments on the solid waste permit

Comment #1 - Proximity of the proposed incinerator to schools and day care facilities

Concern was expressed about the proximity of several schools and day care centers within a couple miles radius of the proposed incinerator.

Response

Section 9-204(k) of the Environment Article, Annotated Code of Maryland, states that the Secretary of the Department of the Environment may not issue any permit, including a refuse disposal system permit to construct and operate a municipal waste incinerator for disposal of a solid waste stream (as defined in Section 9-1701 of the Environment Article), within one mile of a public or private elementary or secondary school. This section also states that a person may not construct or operate a municipal waste incinerator for disposal of a solid waste stream, within one mile of a public or private elementary or secondary school. There is no applicable State or federal statute or regulation that would require a minimum buffer distance between the municipal waste incinerator and day care centers.

Page 1-6, Figure 1-4 of the Refuse Disposal Permit Application shows that there are no public or private elementary or secondary schools within a one mile radius of the proposed incinerator.

Comment #2 - Waste incineration creates a market for trash in Maryland which will have negative impacts on local recycling and composting programs.

There should be more recycling and composting (i.e., sustainable strategies). Does the contract with the Northeast Maryland Waste Disposal Authority (NMWDA) or Wheelabrator include a clause that prevents a reduction in the County's recycling rate due to the needs of the incinerator? Are there any guarantees that curbside and pickup recycling programs will not be negatively impacted in order to meet the needs of the incinerator? The permit should prohibit acceptance of loads containing more than 30% recyclable materials.

Commenters were concerned that more trash would be imported into Frederick County, and there would be negative impacts on local recycling and composting programs. Many stated that the counties should do more recycling to reduce the amount of waste going into landfills. One commenter recommended that the permit be modified to exclude solid waste loads with greater than 30% recyclables.

Response

Under Sections 9-503 and 9-505 of the Environment Article, Annotated Code of Maryland, each county must have a county plan or a plan with adjoining counties that is approved by MDE, covers at least the next 10-year period following adoption of the plan by the county governing body, and among other things, provides for facilities that are adequate to treat, recover, or dispose of solid waste in a manner that is consistent with the laws of this State that relate to air pollution, water pollution, and land use, and for counties with populations greater than 150,000, includes a recycling plan. Under Section 9-204.1 of the Environment Article, MDE "may not issue a permit to install, materially alter, or materially extend an incinerator for disposal of a solid waste stream, as defined in § 9-1701 of this title, unless the county where the proposed incinerator is to be installed, materially altered, or materially extended has a recycling plan submitted and approved in accordance with § 9-505 of this title."

Both Frederick and Carroll Counties have current solid waste management plans that have been approved by MDE and which include approved recycling plans in accordance with Section 9-505 of the Environment Article. Under Section 9-210 of the Environment Article, MDE may not issue a permit to install, materially alter, or materially extend a refuse disposal system such as an incinerator, until the county where the proposed refuse disposal system is to be located has provided MDE with a written statement that the refuse disposal system meets all applicable county zoning and land use requirements, and is in conformity with the county solid waste plan. On May 23, 2011, MDE received a letter from the Board of County Commissioners of Frederick County stating that the project is in conformity with the Frederick County Solid Waste Management Plan and meets all applicable county zoning and land use requirements.

On October 1, 2012, a new law passed by the Maryland General Assembly (House Bill 929: Environment – Recycling Rates and Waste Diversion – Statewide Goals, Chapter 692, Acts of 2012) requires each county to revise its recycling plan by July 1, 2014 and fully implement the plan by December 31, 2015. The revised plan must include a provision that provides for a reduction through recycling of at least 35% for a county with a population greater than 150,000 or 20% for a county with a population less than 150,000, of the county's solid waste stream by weight, or submit adequate justification, including economic and other specific factors, as to why the reduction cannot be met. Frederick and Carroll Counties achieved a 44.30% and 41.17% recycling rate in 2010, respectively, thus exceeding the State-mandated recycling rate of 35%. As the Refuse Disposal Permit Application states: "The Counties' recycling programs will not compete with FCCRWTE for solid waste. Only solid waste that is not recycled will be used for conversion into energy at FCCRWTE. It has been shown that communities nationwide using WTE programs have an aggregate recycling rate at least 5 percentage points above the national average (Recycling and Waste-to-Energy, Are They Compatible?

2009 Update Governmental Advisory Associates, Inc. Eileen Brettler Berenyi June 2009). This is true in Maryland as Baltimore, Harford and Montgomery Counties have some of the highest MDE waste diversion rates (MDE 2009 data: 42.94, 62.03, and 47.04 percent, respectively)." There will also be additional recycling of ferrous and non-ferrous metal at the proposed incinerator.

According to information provided in the Refuse Disposal Permit Application, the proposed incinerator has been sized to meet the needs of all residential, business, industrial, institutional and commercial waste generators of Frederick and Carroll Counties, and is sized to accommodate long-term growth in these Counties. The application also states that additional waste from outside the primary service area will be accepted at the facility. Selection of a method of disposal of the wastes generated by a county or sources of the wastes to be accepted at a facility are strictly within the authority of the local planning authority, except for environmental regulatory and permitting requirements, which are within the Department's authority. The role of MDE is to evaluate the proposed site and the proposed design for compliance with applicable State and federal environmental regulations and statutes, and to issue the necessary environmental permits, provided the applicant demonstrates that these statutory and regulatory requirements will be met.

At the request of MDE, the applicant provided a response to the comment regarding the contract with NMWDA and Wheelabrator as follows: "Although the applicant's contracts are not part of the scope of the MDE permitting process, the applicant has stated that the waste delivery contracts with Frederick and Carroll County provide specifically that the Counties are not required to deliver materials that the County recycles to the Waste-to-Energy facility. Specifically, the project's Energy Recovery Agreements (individually signed by each County in July 2009 with the Northeast Maryland Waste Disposal Authority) do not restrict any County recycling programs or require the delivery of solid waste that either County elects to include in a future recycling program."

Comment #3 – effect of potential lower trash volumes on the incinerator

If Carroll County backs out of the agreement to send its trash to the incinerator, will that invalidate the requested permits? Where is the trash going to come from then and where is the residual ash going to be deposited? MDE should evaluate compliance with recycling requirements for all jurisdictions providing trash to the proposed incinerator. The incinerator solves no problem – a landfill will still be needed for the approximately 151,110 tons of ash produced each year.

Response

There is no requirement in the Refuse Disposal Permit that Carroll County must send its waste to the proposed incinerator. If Carroll County withdraws from the agreement, that development will not invalidate the permit. Section 2.1 of the Materials Separation Plan provided in the Refuse Disposal Permit Application states: "Additional waste from outside the primary service area must be accepted to enable FCCRWTE to operate at its designed capacity. NEA will allow Acceptable Waste from outside the Counties' service area upon written direction from both Counties." As long as the facility can operate in accordance with the approved plans and meet all applicable emission or pollution limits specified in the permits, the facility can receive similar acceptable waste streams from sources outside of both Counties.

Section 9-204.1 of the Environment Article, Annotated Code of Maryland, specifies that MDE "may not issue a permit to install, materially alter, or materially extend an incinerator for disposal of a solid waste stream, as defined in § 9-1701 of this title, unless the county where the proposed incinerator is to be installed, materially altered, or materially extended has a recycling plan submitted and approved in accordance with § 9-505 of this title." The incinerator will be installed in Frederick County, which has a recycling plan that has been approved by MDE. The statute does not prohibit MDE from issuing a Refuse Disposal Permit based on the compliance of other counties with § 9-505; however, to date, all counties in Maryland have recycling plans approved by MDE.

MDE concurs that a landfill will likely still be needed for the disposal of the incinerator ash, and the Refuse Disposal Permit Application identifies the Frederick and Carroll County municipal landfills as recipients of the ash. At the request of MDE, the applicant provided additional information as follows: "Each county is responsible, at its expense, for the recycling or disposal of its proportionate share of residue (including bottom ash and fly ash) generated from the facility for the term of the agreement. [FCCRWTE Energy Recovery Agreement (individually signed by each County in July 2009) Section 3.7; Recycling or Disposal of Residue]. Also, as stated in Appendix B of the Operations Plan submitted with the permit application, "Alternatively, the counties may secure space in other landfills and arrange for out of county ash disposal". Due to the absence of any nearby Maryland landfills other than the Frederick and Carroll County Municipal Landfills, the permittee anticipates that such landfills would be outside the state of Maryland. The permittee may dispose of the incinerator ash, non-combustibles and other residual solid wastes if evaluated to be non-hazardous and free of liquid at permitted municipal landfills, which are in compliance with the current design standards contained for municipal landfills.

Comment #4 – ship trash out of state

Trash should be sent to the incinerator in Pennsylvania or to mega-landfills.

Response

Disposal of solid waste in an out-of-state permitted facility is an option that Frederick or Carroll County can choose to manage their waste stream. Decisions relative to the selection of a method of disposal of the wastes generated by the counties are within the province of the local planning authority, excepting those environmental issues addressed in the State's permitting process.

Comment #5 - Current and future recycling efforts will leave little left in the garbage stream with very much burnable energy.

Concern was expressed that as more trash is recycled, what trash goes to the incinerator will provide almost no energy. A more complete review of the energy generation potential of the proposed incinerator should be done taking into account future recycling efforts.

Response

The applicant's solid waste tonnage projections for Frederick and Carroll Counties from 2015 to 2025, as noted in the Materials Separation Plan provided by the applicant, do not indicate a decrease in the amount of solid waste not recycled, which would mean that the amount available to process at the proposed waste-to-energy facility is not expected to decrease. In any event, the amount of energy the facility is to produce is not within the scope of the Department's review of the permit/approval applications. Our review considers the impact that air emissions, water discharges and the physical operation of the facility may have on human health and the environment. Impacts are evaluated under a maximum operations scenario. If the operation is eventually curtailed due to a reduction in burnable waste, the emissions and water discharges will correspondingly be reduced, and therefore the incinerator's impact on human health and the environment should be less than under a maximum operations scenario. Although less energy may be produced as a result of less waste being available, that is not within the scope of the Department's review.

Comment #6 - Adverse environmental impact and public health concerns.

Concerns were expressed about the potential health impacts to children due to the facility's close proximity to schools and its adverse effect on the environment.

Response

Comments relative to air emissions and water pollution issues have been addressed under sections for the air and water permits. The Refuse Disposal Permit contains several requirements designed to protect the public health and environmental quality. Part IV, Standard Condition D states: "The permittee shall take all measures necessary to control pollution, health hazards or nuisances. This facility shall be operated and maintained in such a manner as to prevent air, land, or water pollution, public health hazards or nuisances." Under Part IV, Standard Conditions I and J, the permittee must control litter and dust on the site, and the operations of the facility must be conducted in a manner that conforms to the applicable noise provisions under local regulations. Under Part III, General Condition D, the ash from the facility must be transported in covered trucks or covered containers in such a manner as to prevent leakage of liquid on public roads and release of material during transport. The roads on the site must be maintained in such a manner so as to prevent the tracking of soil, ash, or waste onto any public roads and/or to cause a public nuisance.

All waste unloading and loading operations will be conducted in an enclosed building. The permittee will be responsible for complying with all conditions of the permit. MDE will inspect the facility on a routine basis and direct the permittee to take corrective action, if necessary, to comply with laws and regulations to protect public health and the environment.

Comment #7 – dust

Are there mitigation measures in place to minimize the risk of dust nuisance during the construction phase?

Response

Part IV, Standard Condition D of the Refuse Disposal Permit states: "The permittee shall take all measures necessary to control pollution, health hazards or nuisances. This facility shall be operated and maintained in such a manner as to prevent air, land, or water pollution, public health hazards or nuisances." The applicant is required to have an Erosion and Sediment Control Plan approved by the Frederick Soil Conservation District prior to start of construction, which will provide for features to capture sediment laden water on the site and discharge only clean water, as well as require stabilization measures to limit the disturbance of soil on the site.

Comment #8 – effects of solid waste handling issues on Monocacy Battlefield

The National Park Service expressed concerns about pest control, noxious odors, facility and transportation vehicle noise and blowing litter effects on visitors to Monocacy National Battlefield and the battlefield property itself.

Another commenter stated the incinerator will give off odor in the hot months of the year.

The Refuse Disposal permit only includes general terms about the control of vectors, odor, noise and litter at the proposed facility, and failure to control these conditions could lead to negative impacts to the Monocacy National Battlefield site as well as visitors to the battlefield. How will the permit requirements be enforced? There should be a detailed monitoring plan for ensuring compliance with odor and noise control.

Response

The Operations and Maintenance (O&M) Plan included in the Refuse Disposal Permit Application includes operational procedures that the facility will follow in order to control nuisances such as odor, litter, noise and dust, as well as pest control. Odors will be controlled primarily by conducting unloading and loading operations inside an enclosed building and maintaining negative pressure inside the tipping bay building, sewage sludge building, and solid waste storage pit areas using the combustor/boilers' primary air system to destroy the odors. The waste material in the storage pit areas will be continually rotated so that older waste is disposed of as quickly as practical, thereby reducing the potential for odors and vector attraction. In addition, should excessive odors be detected at the property line, building doors will be closed where possible. A local licensed pest control company will be retained for scheduled monthly treatments to maintain pest control. Part III, General Condition C.2 of the Refuse Disposal Permit requires that the refuse unloading/tipping areas shall be maintained in a sanitary condition, including washing and cleaning as is necessary to control nuisance odors offsite. Part V, Standard Condition J requires that the site be policed daily or more often, as needed, to control litter. However, the O&M Plan does not include procedures for periodically washing the tipping floor area, nor does it include procedures for policing the areas outside of the building daily for litter. Therefore, MDE has modified the permit to include the following condition to Part II, Facility Specific Conditions:

> "F. Operations and Maintenance Manual:
> Within sixty (60) days of the issuance of this permit, the permittee shall submit a revision to the Operations and Maintenance Manual to include a plan for periodically washing the tipping floor, and a plan for daily litter control on the property."

Noise will be controlled by conducting operations inside an enclosed building, as well as integrating silencers and other noise controls into the design of the system and structures within which key pieces of equipment will be housed. Vehicles entering and exiting the facility will be subject to the noise provisions governing other motor vehicles in Frederick County. As of October 2012, MDE no longer enforces noise regulations. During the 2012 legislative session,

House Bill 190 effectively transferred noise enforcement authority to local governments. In Frederick County, noise complaints should be referred to the Board of County Commissioners.

MDE will inspect the facility on a routine basis. MDE will enforce the conditions of the Refuse Disposal Permit and will order corrective action if necessary to ensure compliance with the Permit.

Comment #9 - Concerns about disposal of toxic ash generated from burning trash at the County's landfill.

A landfill will still be required for ash disposal, and toxic ash will eventually seep into the groundwater (leak through landfill liners) easier than trash biodegrading at its own pace.

Commenters conveyed their concerns over the disposal of incinerator ash at the County's landfill and its effect on groundwater due to possible leaks in the liner.

Response

Only ash that is non-hazardous and non-liquid may be disposed in a municipal landfill, such as the Frederick County Reichs Ford Road Landfill.

In addition, Part III, General Condition D of the Refuse Disposal Permit will require that an analysis of the incinerator ash be conducted quarterly for the first two years of the facility's operation and semi-annually thereafter (see Response No. 16(e)(iii). Toxicity testing and evaluation of the incinerator ash must be determined in accordance with the most recent edition of the "Guidance for the Sampling and Analysis of Municipal Waste Combustion Ash for the Toxicity Characteristic", U.S. Environmental Protection Agency (EPA) Publication No. EPA530-R-95-036, and the results submitted to MDE.

The Frederick County Landfill is constructed with an approved liner and leachate collection system. The liner system from bottom to top consists of two feet of prepared subbase with a permeability of less than $1x10^{-7}$cm/sec, a secondary 60-mil High Density Polyethylene (HDPE) textured geomembrane liner, a bonded composite drainage net secondary collection system, a primary 60-mil HDPE textured geomembrane, a bonded composite drainage net and one foot of protective layer on top. The bottom of the landfill has a minimum vertical buffer distance of 3 feet to the maximum observed or predicted groundwater elevation. The landfill floor is designed so that all liquid that percolates through the waste (i.e., leachate) is collected at a low point (sump) on the cell floor. Leachate is then pumped from the sump to aboveground storage tanks for further treatment. The multiple liner system at the bottom of the landfill is designed to provide adequate resistance and a safe barrier to prevent leachate from seeping into the groundwater, and it exceeds the minimum

requirements under State and federal regulations for municipal landfills. There are also monitoring wells installed around the landfill that are monitored on a semi-annual basis. The onsite monitoring wells serve as a first-warning of any potential contaminants present in the groundwater migrating from beneath the landfill. Should it be determined through the ongoing monitoring that the landfill has negatively impacted the groundwater such that the landfill is out of compliance with permit or other regulatory requirements, the Department would require the permittee to take corrective action.

Comment #10 – Ash volumes in the landfill

There will be more ash disposed in the Frederick landfill than trash. The landfill will be fully depleted in less than 14 years after the plant begins operation, and the County will be required to site a new landfill or revert to hauling ash to an out of County landfill. Has MDE considered the implications of dumping 151,000 tons of ash into the Reichs Ford landfill? Burning the trash will eliminate the possibility of future mining of landfilled trash.

Response

The Refuse Disposal Permit Application states that the ash will be taken to properly permitted landfills, and the permits associated with these landfills must be modified by the landfill operators if required to allow the acceptance of the ash. The application identifies the Reichs Ford Road Landfill in Frederick County and the Northern Landfill in Carroll County as recipients of the ash, and also states that the counties may secure airspace in other landfills and arrange for out-of-county ash disposal.

Incinerator ash can be disposed in a permitted municipal landfill as long as the ash is non-liquid and non-hazardous. The Refuse Disposal Permit requires testing of the ash to ensure the material is non-liquid and non-hazardous. MDE will require that the receiving landfill submit a revised operations plan to MDE to describe the handling of the ash at the landfill. At this time, MDE has not received a request from either landfill to accept incinerator ash; however, the disposal of ash from the proposed facility would not occur for at least 18 months or longer.

Each county in Maryland is required to provide for facilities that are adequate to treat, recover, or dispose of solid waste in their county for a 10-year period in a manner that is consistent with the laws of this State that relate to air pollution, water pollution, and land use. As part of the planning process, Frederick County must review its Solid Waste Management Plan every three years to ensure adequate options are available for the handling of the county's waste for the next 10 years. Should the current landfill exhaust its permitted capacity, Frederick County will need to find other means of managing its solid waste and amend its Solid Waste Management Plan as needed.

Mining of landfilled trash has occurred at several landfills in Maryland, and is a viable option to recover recyclables and provide for additional landfill airspace

in the future. The decision to mine a landfill would be up to the owner of the landfill, provided a mining plan was submitted to, and approved by, MDE.

Comment #11 – blowing ash

Present regulations allow ash to be used for daily cover in landfill operations; ash particulates will easily blow off site polluting wide areas of the County.

Response

The solid waste regulation found under Code of Maryland Regulations (COMAR) 26.04.07.10D for a municipal landfill states that "A uniform compacted layer of clean earth at least 6 inches in depth, or an approved cover material of a thickness specified by the Approving Authority, shall be placed over exposed solid waste by the end of each day's operation, or more frequently as may be determined by the Approving Authority. To secure approval, the cover material may not: (1) Contain free liquids, putrescibles, or toxic materials. Moisture which is present in the cover material solely as a result of precipitation is not free liquid. (2) Create a dust or odor problem. (3) Attract or harbor vectors. (4) Impede compaction with standard landfill equipment." This regulation does not specifically allow the use of ash as daily cover material at a landfill, and in order for ash to be used as such, the landfill permittee would need to demonstrate to MDE how the ash would meet the requirements of a daily cover material as listed above. How the landfill permittee would propose to prevent escape of particulate matter from the ash would be closely evaluated by MDE prior to the granting of any such approval. At this time, incinerator ash from the Frederick facility is not approved for use as daily cover at a permitted landfill.

Comment #12 – Ash transport mitigation measures

What mitigation measures are proposed for the transport of ash?

Response

Part III, General Condition D.5 of the Refuse Disposal Permit states: "The permittee shall transport the ash in covered trucks or covered containers in such a manner as to prevent leakage of liquid on public roads and release of material during transport." Part IV, Standard Condition H states: "Roads shall be maintained in such a manner so as to prevent the tracking of soil, ash, or waste onto any public road and/or to cause a public nuisance." According to the Refuse Disposal Permit Application, the ash will be wetted with water so that the ash moisture content is between 10 and 20 percent before it is loaded into trucks for transportation offsite. The ash trucks will be covered and fitted with leak proof doors (gasket seals) to keep the ash in the truck until it has reached the disposal site. In addition, a wheel wash system will be provided for trucks exiting the ash storage building on the site to remove any ash dust that may adhere to the tires.

Comment #13 – Is ash a hazardous waste?

What is MDE's position on fly and bottom ash from these types of facilities in regards to the statement on EPA website, "On May 2, 1994, the U.S. Supreme Court decided that ash which exhibits a hazardous waste characteristic is a hazardous waste."?

Response

Part III, General Condition D of the Refuse Disposal Permit requires characterization of the incinerator ash for hazardous characteristics on a quarterly basis for the first two years of the facility's operation and semi-annually thereafter (see Response No. 16(e)(iii)). These analyses must be submitted to MDE for review. The ash is required to be managed in compliance with all applicable Resource Conservation and Recovery Act Subtitle C program requirements if it is determined to be a hazardous waste.

Comment #14 – Self-monitoring

Wheelabrator will self monitor themselves; it's a conflict of interest for them to make the decision for the county citizens when they have a financial interest and will gain financially.

Response

The permittee for the proposed facility is the Northeast Maryland Waste Disposal Authority, not Wheelabrator. The permittee has entered into a contract with Wheelabrator to operate the facility, but the permittee is responsible for ensuring the facility remains in compliance with applicable laws, regulations, and permit conditions. Under Part IV, Standard Conditions P, Z, and AA of the Refuse Disposal Permit, the permittee is subject to penalties for falsifying, tampering with, or knowingly rendering inaccurate any monitoring device or method required to be maintained under the permit, and subject to civil and criminal penalties for noncompliance with applicable laws and regulations and the issued permit. As stated previously, MDE will routinely inspect the facility for compliance, and will take appropriate enforcement action as needed.

Comment #15 - Violations of environmental regulations by Wheelabrator.

Wheelabrator was fined millions of dollars at an out-of-state facility for environmental violations. Slapping Wheelabrator with a monetary fine isn't good enough when damage to the environment and nearby populations is already done.

Response

The comments regarding the violations refer to another facility out-of-state. The permittee is responsible under Maryland regulations for maintaining compliance with their Refuse Disposal Permit. The Refuse Disposal Permit includes general requirements with which the permittee must comply. The permittee must also comply with other regulations, plans and specifications referenced in the permit, which are also enforceable. MDE performs routine inspections of the permitted facilities for compliance with the permit, and also

has scientific and engineering staff available to help assess elements of compliance as needed.

Comment #16 - The following are comments received on specific conditions of the draft Refuse Disposal Permit:

a. Part II, Facility Specific Conditions C.1 and 2:

(i) The Refuse Disposal Permit limits the acceptance of waste to a maximum of 602,250 tons per year, while the air permit allows 1,500 tons per day to be burned. The average per day should be allowed to exceed 1,500 to allow for some variability, but the average over a year should not exceed the 1,500 tons per day. Are there specific emission, pollution or air quality parameter limits above which MDE will impose restrictions on the volume of material accepted at the facility?

Response

The air permit to construct contains emission limits for specific air pollutants. If those emission limits are violated, MDE will take appropriate enforcement actions.

At the request of MDE, the applicant has also provided additional information to address this comment: "The maximum waste acceptance limit takes into consideration the variability of the heating value of municipal solid waste due to composition and moisture and allows for additional waste to be accepted so that the facility would always have available material to process. The air permit allows for the acceptance of 1,500 tons per day of fuel averaging a higher heating value (HHV) of 5,500 Btu/lb which equates to 547,000 tons per year. The combustion technology can accommodate fuel with lower average HHV and therefore more fuel is required to produce the same amount of energy. Waste with a HHV at the lower end of the acceptable range would result in up to 1,650 tons per day delivery or an annual rate of 602,250 tons. Also, in a given year more fuel may be accepted than processed due to timing of maintenance outages and therefore additional waste may be accepted to have material available to process."

(ii) Who determines if nuisance conditions, harborage of disease vectors, etc. are occurring at the site and will monitoring results determine if these restrictions are undertaken or will the responsibility fall on neighbors to detect the nuisance conditions?

Response

MDE will perform routine inspections of the facility for compliance with the permit and applicable laws and regulations. If citizens believe that the facility is in non-compliance, they can contact the Solid Waste Program at 410-537-3315 and an inspector will investigate the complaint.

b. Part II, Facility Specific Condition E:

(i) How will Wheelabrator mitigate mercury in waste if their preliminary Mercury Diversion Plan (MDP) says mercury-containing items are typically small in size and difficult to identify in the waste stream? The MDP relies heavily upon efforts of the counties to inform the public of potential environmental issues associated with improper disposal of mercury; will there be new programs set up and who will pay for them?

Response

The intent of the MDP is not to restrict all mercury-containing items from the waste stream brought to the incinerator. Instead, the intent of the plan is to establish means for diverting mercury-containing items from the solid waste stream that is to be subsequently combusted at the incinerator through identification, separation, collection and recycling or proper disposal of mercury-bearing products contained in the solid waste stream. The permittee will still need to meet all emission limits set for mercury in the air permit. The preliminary MDP submitted by the applicant states that mercury-containing items which can be visually identified by the tipping floor loader operator such as boxes of fluorescent light bulbs, cathode ray tube monitors and televisions, old mercury containing appliances, and other older electronic equipment, will be identified and isolated from the waste stream to be incinerated. In addition, at least four times per shift, random solid waste loads will be pulled aside for a more thorough examination for unacceptable waste, and haulers who deliver loads that fail such inspections will be identified, and notice of the failed loads will be transmitted through the haulers to the generators of the waste material. Smaller mercury-containing items such as thermometers or thermostats placed inside trash bags or mixed in a load of waste would be virtually indiscernible on the tipping floor. The MDP also relies on mercury education and collection programs established for citizens and businesses by Frederick and Carroll Counties. Questions regarding any new mercury diversion programs to be set up or who will pay for them should be directed to Frederick and Carroll Counties.

(ii) The facility will likely need to import half of its waste stream per year from unknown sources in order to operate at full capacity. The MDP does not address waste coming from outside sources, and the permit should require that jurisdictions providing waste meet standards satisfying Frederick and Carroll Counties' hazardous waste diversion goals. Will the public be able to comment on the MDP? Acceptance of sewage sludge at the facility should be limited to sewage sludge from wastewater treatment plants that serve dental offices that use amalgam separators, due to the presence of mercury in sewage sludge.

Response

The comment that the MDP does not address mercury in waste coming from outside sources is noted. Part II, Facility Specific Condition E of the Refuse Disposal Permit requires the permittee to submit the proposed MDP to MDE for review and approval at least 180 days prior to initial start up of the facility. In response to this comment, MDE has modified Condition E to require the permittee to submit an amendment to the MDP addressing mercury diversion measures for waste sources outside of Frederick and Carroll Counties at the time such sources of waste are identified. Condition E has also been modified to add numbering for ease of identification, and to change the date for submittal of an annual progress report to MDE on the effectiveness of the MDP to December 31. Condition E now reads as follows:

"Mercury Diversion Plan:

1. The permittee shall prepare a Mercury Diversion Plan (MDP) for all service areas of the facility in accordance with the Preliminary MDP submitted to the Department, dated November 8, 2012. The MDP shall establish means for diverting mercury-containing items from the solid waste stream that is to be subsequently combusted at this facility through identification, separation, collection and recycling or proper disposal of mercury-bearing products contained in the solid waste stream. The MDP shall also include proposed measures to determine the effectiveness of the MDP in removing mercury-containing items following implementation. The MDP shall, at a minimum, include the following four elements:

    a. An education/outreach program for citizens, businesses and local governments;

    b. A collection program for unused mercury and mercury-containing items;

    c. A recovery/recycling program for mercury-containing devices; and

    d. A proposed schedule for implementation of the MDP.

2. The permittee shall submit the proposed MDP to the Department for review and approval at least 180 days prior to initial startup. The permittee shall implement the MDP in the intended service area as approved or amended by the Department prior to commencing operation of the facility. The permittee shall submit a progress report to the Department annually by December 31, documenting the effectiveness of the MDP, and

making recommendations, as appropriate, to enhance the effectiveness of the MDP.

3. Any modifications to the MDP must be submitted to the Department for approval. The permittee shall implement any modifications as approved by the Department.

4. Prior to acceptance of a solid waste stream generated from outside of the service areas of the facility, the permittee shall submit to the Department, for approval, a plan for diverting mercury-containing items from that solid waste stream."

MDE will also recommend that Frederick and Carroll Counties provide information to dental offices about amalgam separators as part of their recycling programs. Anyone outside of MDE can request a copy of the final MDP in accordance with the procedures of the Public Information Act; MDE will not be soliciting comments from the public on the final MDP.

c. *Part III, General Condition A:*

This general condition prohibits the acceptance of certain waste material, such as sewage sludge and scrap tires unless authorized by the Department, and bulky material such as white goods, refrigerators and items which will not fit in the combustion chamber or material handling systems. However, Part II, Specific Condition A lists sewage sludge, scrap tires and bulky waste as Acceptable Wastes. Are there limits on quantities accepted? Permit should be revised to exclude acceptance of these materials, as well as acceptance of wastes from hydraulic fracturing or sewage sludge from plants that accept wastewater from hydraulic fracturing operations, and to require radiation monitoring at the gate. Permit should also prohibit acceptance of municipal solid waste loads containing more than 30% recyclable materials (paper, plastic, glass, metal).

Response

The Refuse Disposal Permit is divided into several sections consisting of Parts I, II, III, IV and V. Part I, Referenced Documents lists the permit application and all plans, specifications and other pertinent documents that relate to the design and operation of the facility. Part II, Facility Specific Conditions contains conditions which are applicable to the Frederick incinerator, such as type of waste it can accept, yearly tonnage limits and hours of operation, and are based on what the applicant has proposed in the Refuse Disposal Permit Application. Part III, General Conditions contains conditions which are generally applicable to all incinerators similar to the proposed Frederick incinerator. Part IV,

Approval Conditions contains conditions which are generally applicable to solid waste acceptance facilities (landfills, incinerators, transfer stations, etc.) that accept and process scrap tires. Part V, Standard Conditions contains conditions which are generally applicable to all solid waste acceptance facilities. Plans and specifications which are approved under Part I and Part II of the permit satisfy the requirements under Parts III, IV and V. The approved plans and specifications override the requirements under these conditions to the extent that they do not conflict with applicable laws or regulations, unless a variance has been granted under COMAR 26.04.07.26.

Part III, General Condition A prohibits the acceptance of sewage sludge and scrap tires unless authorized by the Department, as handling of these materials is regulated separately under Maryland statute. Since the applicant requested and received approval from MDE to accept these materials at the Frederick incinerator, they were included as Acceptable Waste in Part II of the permit. The applicant will still need to receive a separate Sewage Sludge Utilization Permit from MDE to incinerate the sewage sludge; however, scrap tire acceptance was approved and Part IV, Approval Conditions applicable to scrap tire acceptance and processing were added to the Refuse Disposal Permit. Section 2 of the Refuse Disposal Permit Application states that the facility will receive up to a maximum of 20,000 tons per year of scrap tires, and the quantity of sewage sludge to be delivered may be up to 10 percent by weight of wet sludge as compared to municipal solid waste. According to additional information provided by the applicant in response to this comment, the applicant stated “For technical reasons (combustor fuel mix limits), the facility cannot increase the amount of tires and sewage sludge beyond the amount stated in the applications.”

Because of the combustor feed chute width, the Operations & Maintenance Plan (O&M) included in the application states that the facility will not accept bulky waste larger than 6 feet in any dimension. However, particular large items, such as sofas that can easily be broken up with the loader or crane, may be accepted. Large metal objects will be set aside in a roll-off container to be disposed off-site. Appliances containing chlorofluorocarbon (CFC) will be either reloaded onto the delivery truck or set aside in a designated area until a certified CFC recovery technician can inspect and recover the CFC; afterwards, the appliance will be placed in the scrap metal bin.

The O&M states that a radiation meter will be installed at the scale house to detect radiation sources in the incoming waste. An alarm will be sounded in the scale house and control room on detection of radiation. The truck will then be detained, the load may be screened again with a hand held detector, and the truck will remain parked until the radioactive material is recovered or the load is deemed not a threat. MDE will be informed of the radioactive load. As long as the material is

not a controlled hazardous substance, a radioactive hazardous substance, or bulk liquid as defined in Part III, General Condition A of the Refuse Disposal permit, the material can be accepted at the facility.

d. Part III, General Conditions B and C:

(i) Permit should specify exactly how the facility must be enclosed, and whether hanging slats are required or sufficient to consider truck entry and exit openings "closed".

Response

COMAR 26.04.07.25D requires that "Activities involving the unloading, separation, reduction, or alteration of waste shall be conducted in an enclosed building." The incinerator building will be enclosed on all sides except for the openings through which the trucks will travel to unload waste material. These openings will have doors that can be closed, as needed. Hanging slats have been tried at other solid waste facilities and found to pose a safety hazard to truck traffic and are routinely torn by the trucks. The facility will operate the tipping bay building, sewage sludge building, and solid waste storage pit areas under negative pressure to control odors. The approved plans for the facility are referenced in Part I of the permit, and thus enforceable under the permit.

(ii) Will there be regular inspections of the facility to ensure that solid waste is being handled appropriately and nuisance conditions are controlled? What means of enforcement does the county have to ensure compliance with the permit conditions, how can the county force compliance if complaints are received, and can the county assess financial penalties and take legal proceedings if the facility is in violation?

Response

There will be regular inspections conducted by MDE inspectors to ensure the facility is operating in accordance with the Refuse Disposal Permit and applicable laws and regulations. The authority for enforcing Maryland solid waste laws and regulations is under the jurisdiction of MDE. Should Frederick County receive complaints about the facility or believe the facility is noncompliant, they can refer the matter to MDE for investigation at 410-537-3315.

e. Part III, General Condition D:

(i) How is it determined where the ash will be disposed, and what will prevent the Reichs Ford Road Landfill from running out of space if all ash goes there? Will records be kept on how much ash is disposed of and where it is landfilled?

Response
It is up to the applicant to choose a permitted disposal site for the ash. The facility will need to keep records on how much ash is disposed of and where, and provide this information to MDE in an annual report due by March 1 of each year the incinerator is in operation. The application states that a percentage of the ash will be taken to the Frederick County Reichs Ford Road Landfill. The application also lists Carroll County's Northern Landfill or other designated facilities as possible acceptance sites. Both of these landfills may accept incinerator ash as long as the permittees address the management of the ash in the landfill operating plan and submit the plan to MDE for approval. It is up to Frederick County which owns and operates the landfill to determine how much ash will be accepted at their landfill. Under Section 9-505 of the Environment Article, Annotated Code of Maryland, Frederick County is required to have a plan that provides for facilities that are adequate to treat, recover, or dispose of solid waste in a manner that is consistent with the laws of this State that relate to air pollution, water pollution, and land use. As part of the required 3-year review of the county plan, Frederick County will need to evaluate the remaining capacity of the Reichs Ford Road Landfill and determine whether the landfill will be able to handle the County's solid waste disposal needs for the next 10 years or propose alternate means of solid waste handling.

(ii) A recipient facility for ash should be identified in the application for ash that required testing demonstrates to be hazardous.

Response
The Refuse Disposal Permit Application is required to identify a proposed disposal site for the ash generated by the facility. The application has identified the Frederick County Reichs Ford Road Landfill and the Carroll County Northern Landfill as possible disposal sites for the ash generated by the facility. In MDE's experience, the combined fly ash and bottom ash leaving a waste-to-energy facility is not hazardous. However, in response to this comment, the applicant was asked to identify a recipient facility for ash that may be hazardous and the applicant replied as follows: "The applicant's experience in operating waste to energy facilities has never shown the ash to fail a regulatory test and meet the definition of hazardous waste. Should that highly unlikely event ever occur, the permittee would properly dispose of any hazardous waste material according to MDE and US EPA regulations. This includes transport manifest and documentation at a permitted hazardous waste disposal site. Examples of landfills which could accept hazardous waste are the landfills located at:

- Modern Landfill, Inc. 1550 Balmer Road, Model City, New York, or

- CWM – Emelle, 36964 Hwy. 17 North, Emelle, Alabama.

Alternatively, other properly licensed, out of state hazardous waste landfills could be used."

(iii) Yearly testing of the ash is not sufficient and it's unrepresentative; the waste stream is variable and the different types of waste material as well as the ash itself can be manipulated prior to the annual testing. If an annual sample is found to be hazardous, how will it be possible to retrieve previous loads that were potentially disposed of improperly at local landfills or determine which ash was toxic? Bottom ash and fly ash should be tested separately and the designation of whether the ash is hazardous should be based on total concentrations, not how much leaches in short-term laboratory tests. The EP Tox test should be used rather than the TCLP test. Dioxins/furans and zinc should be added to the list of parameters to be tested.

Response
MDE has reevaluated the annual ash testing frequency in the draft permit using the Toxicity Characteristic Leaching Procedure (TCLP) and the annual test for total concentrations of contaminants listed in 40 CFR 261.24. To better characterize the toxicity of the ash and account for variability in the waste stream, MDE agrees that more frequent ash testing is warranted. In accordance with U.S. Environmental Protection Agency (EPA) Publication No. EPA530-R-95-036 "Guidance for the Sampling and Analysis of Municipal Waste Combustion Ash for the Toxicity Characteristic", an initial characterization of the ash should be done by collecting two daily composite samples for a minimum of one week's operation. Following this initial ash characterization, MDE will require the permittee to conduct quarterly sampling of the ash for the first two years of the facility's operations, and then semi-annual sampling thereafter. MDE will also require that the permittee submit a detailed ash sampling and analysis plan to the Department for review and approval. The test for total concentrations of contaminants was requested in the draft permit in the event the ash would be used for a purpose other than disposal at a landfill. Since the permittee has not requested use for the ash other than disposal, MDE finds the test for total concentrations to be unnecessary at this time. Testing for dioxins and furans is not included in the TCLP, and under federal rule, these parameters are not considered in the determination of whether a waste material is hazardous. Should the final disposition of the ash change in the future, MDE will reevaluate the testing requirements for the ash at that time.

In accordance with EPA's Notice of Statutory Interpretation published in the February 3, 1995 edition of the Federal Register, EPA interprets

RCRA §3001(i) to first subject the ash generated by a waste-to-energy facility to RCRA Subtitle C (hazardous waste regulations) when the ash exits the combustion building following the combustion and air pollution control processes. Under this interpretation, the fly ash and bottom ash can be combined within the combustion building and conditioned before a hazardous waste determination is made.

The generator of the ash is responsible for determining whether the ash is hazardous at any point in time. One of the characteristics by which a hazardous waste is identified is whether the ash exhibits the Toxicity Characteristic; this identification is generally made by either testing using the TCLP which simulates leaching through a landfill or by using knowledge of the combustion process to determine whether the ash would exhibit the Toxicity Characteristic. In 1990, EPA promulgated a rule which replaced the Extraction Procedure (EP) Toxicity Characteristic test with the more comprehensive TCLP. Upon notification of testing results indicating the ash failed the TCLP, MDE would require the permittee to take additional action as deemed appropriate, such as increased monitoring of the ash and handling of the ash as a hazardous material, until such time as the sample results indicated the ash no longer tested hazardous.

The permittee will keep records of how much ash is generated at the facility and where each truckload of ash is taken. If a sample were to test hazardous, it should be possible to determine where the ash was disposed. However, if the ash has already left the facility, it may not be possible or practical to retrieve the ash once it has been disposed in the landfill. Municipal landfills, such as the Frederick and Carroll County landfills, are designed with liner and leachate collection systems that function as effective barriers against migration of pollutants into groundwater. In accordance with EPA's Notice of Statutory Interpretation published in the February 3, 1995 edition of the Federal Register, EPA conducted studies on the land disposal of municipal waste combustor ash from waste-to-energy facilities and found no evidence to suggest that disposal in a Subtitle D landfill would endanger human health and the environment. The landfills have a network of monitoring wells to detect a release from the landfill. Should a release be detected, the landfill permittee must perform corrective action to clean up the ground water to the satisfaction of MDE.

MDE has modified Part III, General Condition D of the Refuse Disposal Permit to read as follows:

> "1.The permittee shall submit an Ash Sampling and Analysis Plan to the Department for review and approval within ninety (90) days of issuance of this permit. The Plan must address the

parameters to be sampled, the sampling frequency, and the sample collection, preservation, chain of custody, and analytical protocols that will be used to obtain representative samples of the ash residue. The ash shall be tested for leaching potential using the Toxicity Characteristic Leaching Procedure (TCLP), Test Method 1311, which is published in the U.S. Environmental Protection Agency (EPA) Publication SW-846. Proposed changes to sampling equipment or procedures must be submitted to the Department for review and approval.

2. Within 30 days of initial operation of the facility, an initial testing and evaluation of the waste characteristics of the ash as it exits the combustion building following the combustion and air pollution control processes shall be determined in accordance with the most recent edition of the "Guidance for the Sampling and Analysis of Municipal Waste Combustion Ash For The Toxicity Characteristic", U.S. EPA Publication No. EPA530-R-95-036, using the TCLP. The sample results shall be submitted to the Department within 30 days of the sample date.

3. Should the facility be modified or a change made to processes which could reasonably be expected to change the characteristics of the ash generated by the facility, the permittee shall re-characterize the ash in accordance with the EPA ash sampling guidance and submit the testing results to the Department.

4. The permittee shall sample both the bottom ash and fly ash as it exits the combustion building following the combustion and air pollution control processes. The ash shall be sampled on a quarterly basis for the first two years of the facility's operations and on a semi-annual basis thereafter for the life of the permit, in accordance with the Ash Sampling and Analysis Plan approved by the Department. If the bottom ash and the fly ash are combined prior to exit from the combustion building, only the combined ash shall be sampled. The quarterly ash testing results shall be submitted to the Department by March 31, June 30, September 30 and December 31, and the semi-annual ash testing results by June 30 and December 31, of each year, unless an alternate schedule is included in the Ash Sampling and Analysis Plan and approved by the Department.

5. Facilities that produce less than 1000 tons of ash per year shall sample both the bottom ash and the fly ash on an annual basis for the life of the permit, in accordance with the Ash Sampling and Analysis Plan approved by the Department. If the bottom ash and the fly ash are combined prior to disposal, only the combined

ash shall be sampled. The ash testing results shall be submitted to the Department by December 31 of each year, unless an alternate schedule is included in the Ash Sampling and Analysis Plan and approved by the Department.

6. Renumber D.2 as D.6.

7. Renumber D.3 as D.7.

8. Renumber D.4 as D.8.

9. Renumber D.5 as D.9.

10. Renumber D.6 as D.10.

11. Renumber D.7 as D.11."

(iv) The permit should require more detail on how the trucks transporting ash are to be covered to prevent the escape of particulate matter and liquid leakage.

Response
Details on how trucks transporting ash are covered to prevent the escape of particulate matter and liquid leakage are included in the Refuse Disposal Permit Application. The application states that the ash will be wetted to a moisture content of between 10 and 20 percent to prevent the loss of ash during transport, and the trucks will be covered and fitted with leak proof doors (gaskets) to keep the ash in the truck until it has reached the disposal site. MDE inspectors will observe the trucks to ensure adequate measures are taken to prevent loss of particulate matter.

f. Part IV, Approval Conditions

Questions were raised concerning the acceptance and burning of tires at the facility:

(i) Is there a limit to the quantity of tires that can be present prior to processing or time allowed before processing?

Response:
According to the Scrap Tire Solid Waste Acceptance Facility Permit Application submitted by NMWDA, the facility anticipates receiving up to 64 tons or approximately 5,700 scrap tires per day. Scrap tires will be delivered by truck and unloaded directly on the tipping floor and immediately transferred to the refuse pit for combustion as a fuel. Waste placed in the refuse pit is mixed by the crane operators to form more

homogenous fuel. There will be no separate storage of scrap tires at the facility. The facility is designed for a maximum of 193 tons of scrap tire in the refuse pit at any one time.

(ii) Why is the permittee maintaining records on incoming and outgoing scrap tires for only three years?

Response
Even though Maryland regulations do not require a scrap tire acceptance facility to maintain records of incoming and outgoing scrap tires, Part IV.D of the Refuse Disposal Permit for the incinerator requires that these records be maintained for three years similar to the requirement under COMAR 26.04.08 for a scrap tire collection facility. The permittee is required to submit a semiannual report to MDE for the life of the facility which provides a summary of all scrap tire records. These reports are maintained by MDE for the life of the facility. MDE considers this period adequate to confirm proper disposal of the scrap tires.

(iii) What happens if the 20,000 tons per year allowable burn capacity is exceeded? Is there a limit on the number of tons per year of tires that can be burned after five years and does this limit last for the operational life of the facility?

Response
The applicant has proposed to incinerate up to a maximum of 20,000 tons of scrap tires a year. Exceeding the limit would be contrary to the approved plans and a violation of the Refuse Disposal Permit. Should the facility want to increase the amount of scrap tires to be incinerated, the permittee would need to demonstrate to MDE that the facility will be able to meet emission limits. The 20,000 tons per year limit remains unchanged for the operational life of the facility, unless the permittee obtains MDE approval to accept additional tires. According to the applicant, for technical reasons (combustor fuel mix limits), the facility cannot increase the amount of tires and sewage sludge beyond the amounts stated in the applications.

(iv) For how many years will the permittee have to submit semiannual tonnage reports; will these reports be filed through the lifetime of the facility; and will receipts be issued for the duration of the facility? The scrap tires from consumers need to be tracked in the same fashion as those from commercial haulers and in perpetuity.

Response
The permittee will have to submit semiannual scrap tire tonnage reports to MDE for as long as the facility accepts scrap tires under a valid

Refuse Disposal Permit. The tonnage report must account for all scrap tires received at the facility, whether from consumers or from scrap tire haulers. Under Part IV, Approval Condition F of the Refuse Disposal Permit, the permittee will also be required to issue a written receipt to each scrap tire hauler upon receiving a load of scrap tires at the facility; this will be required for the operational life of the facility.

(v) Why does the permit detail the exportation of tires from the facility if the tires are to be burned?

Response
It is the intent of the facility to incinerate the scrap tires that are received at the facility. However, Part IV, Approval Conditions of the Refuse Disposal Permit do allow for the exportation of scrap tires from the facility by a licensed scrap tire hauler, if for some reason the facility was not able to accept and incinerate the tires.

(vi)What enforcement options can MDE employ after a violation? Whole tires are a health hazard and permit should require tires to be chipped prior to receipt at the facility and stored within a building.

Response
MDE has broad enforcement authority to address violations at the facility, and the type of enforcement action taken will be dependent on the violation. Such action can consist of a Site Complaint or Notice of Violation, administrative or civil actions, or even criminal penalties. According to the Scrap Tire Solid Waste Acceptance Facility Permit Application submitted by the applicant, there will be no separate storage of tires at the facility. Scrap tires will be delivered by truck and unloaded directly on the tipping floor and immediately transferred to the refuse pit to commence the fuel combustion process.

(vii) What will be done with partially burned scrap tire material since often tires don't fully combust?

Response
Given the anticipated temperature and residence time, it is anticipated that all but the metal constituents of the tire will be consumed in the furnaces. Part III.D.3 of the Refuse Disposal Permit requires ash and non-combustible material from incineration to be stored in the designated ash containers, and to be transported off-site to permitted facilities for disposal as frequently as is necessary to maintain capacity for additional ash storage.

At the request of MDE, the applicant provided the following additional information regarding this comment: "Scrap tire residues remaining

after combustion will be processed through the ferrous and non-ferrous recovery system and the remaining residues will be transported with the ash to a landfill for final disposal. The metals recovery system includes a finger deck which separates larger items (greater than 6"; called "bulkies") from the ash. Any unburned tires will be removed from the ash by the finger deck and will be directed to the oversized scrap metal bunker. All oversized scrap metals will be purchased by a scrap metals recycling company and recycled. Scrap metals recycling vendors are responsible for proper disposal of waste (non-recyclables) generated in their process. Any portions of unburned tires that pass through the finger screen (< 6") will no longer resemble tires and will be disposed of with the ash."

(viii)What will be done with the scrap metal from the tires; is it clean enough to go to a salvage yard and will trucks transporting the metal be covered during transport?

Response
At the request of MDE, the applicant provided the following additional information regarding this comment: "The applicant anticipates that most tires delivered for processing will not include rims or other significant metal components. Any metals remaining in the ash will be processed through the facility's ferrous and non-ferrous metal recovery system. The applicant assures the Department that the transportation of recovered metals will be provided by a licensed transport company that will meet all of the environmental requirements for transportation of recovered metals including covering loads as required by state requirements.

The proposed metals recovery system includes both ferrous and non-ferrous metal recovery components. The mechanical processes involved in metal recovery, including the finger deck screen, vibrating feeder and the separation process will serve to remove some ash that may have adhered to metals. It is Wheelabrator's experience operating metal recovery systems at other facilities that the recovered metals are clean enough for transport and delivery to metal recycling facilities.

The recovered metal is a product, not a waste stream and will be marketed as such, similar to the electric power produced by the facility. The specific scrap metal recycling companies and recycling facilities to be used will be determined through a competitive process, prior to the facility beginning operation. There is significant competition among scrap metal recycling companies both within and outside of the State of Maryland. The FCCRWTE facility will select recycling vendors/facilities which can maximize the revenue to the project and meet environmental standards. The specific vendors may change at

irregular frequencies throughout the life of the facility due to market conditions. It is likely that different vendors will be used for the ferrous and non-ferrous metal material."

The hauling of recovered scrap metal to scrap metal recycling facilities has been a common practice at other waste-to-energy facilities around the country for a long time and MDE is not aware of any adverse environmental or health effects associated with this practice.

(ix) The draft permit states that the permittee shall not operate the facility in a manner that will "impair the quality of the environment". This statement needs to be detailed with examples.

Response
MDE does not believe the statement "The permittee shall not operate the facility in a manner that will impair the quality of the environment" requires detailed examples. The Refuse Disposal Permit also includes more specific provisions that are protective of the environment, such as requiring solid waste handling activities to be conducted in an enclosed building, maintaining the tipping floor in a sanitary manner, preventing standing water on the tipping floor, and controlling dust, odor and litter. The applicant has described in detail how the facility will be operated and maintained to control air, ground and surface water pollution, as well as nuisance conditions, in the Operations and Maintenance Plan included in the Refuse Disposal Permit Application.

g. Part V, Standard Conditions

(i) Section A: What is meant by a "responsible individual" and what credentials or education is required of this individual? (ii) Section B: The Right of Entry condition states that MDE, at reasonable times, will be allowed access to the facility. Since the facility will operate 24 hours a day, why would MDE not be granted access at any time? This section should also allow for the use of handheld test meters for air sampling.

Response
The Refuse Disposal Permit requires that the facility be under the supervision of a responsible individual present at the disposal site at all times during the operation. Parts B and G of the Air and Radiation Management Administration's Permit to Construct provides standards that must be met for municipal waste combustor operator training and certification. Each chief facility operator and shift supervisor must complete full certification with either the American Society of Mechanical Engineers or a State certification program; each chief facility operator, shift supervisor and control room operator must complete the EPA or State waste combustor operator training course; the

incinerator operator must complete an annual review course approved by the Department; and the owner or operator of the facility must develop and update on a yearly basis a site-specific operating manual that shall, at a minimum, address the elements of municipal waste combustor unit operation. Part C of the Air and Radiation Management Administration's Permit to Construct provides that the owner or operator of the incinerator shall not allow the facility to be operated at any time unless at least one qualified, trained person, such as a fully certified chief facility operator, is on duty and at the facility. Part C of the Permit to Construct contains more details.

The Right of Entry clause in the permit is a standard condition that is included in permits for all solid waste acceptance facilities. Since the Frederick incinerator will be operated 24 hours a day, MDE will have the right to enter the facility at any time.

(iii) Since there will be limited personnel on the tipping floor and many hazardous wastes are small, is it feasible to expect that all incoming loads will be sufficiently inspected to detect unacceptable waste?

Response
Under federal and State regulations, household waste, which is any waste material derived from households (including single and multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas) is not considered hazardous waste. Therefore, small quantities of substances, such as chemicals may be included in bagged household waste that is collected at curbside and brought to the facility and incinerated. Monitoring of the unloaded waste will be done primarily by the crane operator and the tipping floor loader operator; however, at least four times a shift, random load observations will be conducted by plant personnel for unacceptable waste. Municipal waste coming to the facility in transfer trailers from the Frederick and Carroll County transfer stations will have undergone additional inspection at the transfer stations when unloading and loading operations occurred there.

(iv) Section F.1 and G: "insure" should read "ensure".

Response
According to Webster's dictionary, "insure" and "ensure" both mean "to make certain", which is the intent of the wording used in the permit condition.

(v) Section K: Under what conditions would MDE authorize contaminated liquids to be discharged to waters of the state and not a treatment facility?

Response

MDE would need to evaluate any request to discharge contaminated liquids to waters of the State on a case-by-case basis. The permittee would need to demonstrate to the satisfaction of MDE that any such discharge would not exceed State or federal water quality standards. Under Part B of the General Conditions of the NPDES permit for the facility, all authorized discharges must be consistent with the terms and conditions of the permit. The discharge of any pollutant identified in the permit at a level in excess of that authorized would constitute a violation of the permit, and would require the submittal of a new application to the Department at least 180 days prior to the commencement of the changed discharge except that if the change only affects a listed pollutant and will not violate the effluent limitations specified in the permit, the permittee need only provide written notice to MDE. Following such notice, the permit may be modified by MDE to include new effluent limitations on those pollutants.

(vi) Section O: MDE should specify how quickly repairs should be made to damaged monitoring and pollution control systems; the wording "damage shall be completed as soon as practical" is too general.

Response

MDE cannot specify how quickly repairs should be made to damaged monitoring and pollution control systems, since each situation will differ with regard to time needed for mobilization and repair. The Refuse Disposal Permit requires the permittee to notify MDE within two hours of the incident or within two hours of discovery of the incident if it occurred outside of working hours. In many cases, supplemental equipment acquired through rental may be available if repairs will take some time.

(vii) Section P, Penalties for Tampering: This condition should include the word "testing."

Response

The comment is noted. However, Section 9-343 of the Environment Article, Annotated Code of Maryland, gives MDE the authority to seek criminal penalties if a permittee knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the issued permit, including testing results.

(viii) Section U: Can the actual expiration date of the permit be included in this section?

Response
Part V, Standard Conditions of the Refuse Disposal Permit are standard conditions that are applicable to all solid waste acceptance facilities; therefore adding the expiration date of the Frederick incinerator under Part V, Standard Condition U would not be appropriate. The permit issuance and expiration dates are noted on Page 1 of the Refuse Disposal Permit.

(ix) If Wheelabrator goes out of business or enters bankruptcy while this facility is operational, is the Authority responsible for finding a new business partner to run the operations, would this lead to increased costs to the taxpayers or the Authority, and would this impact local pickup services or importation of waste from Carroll County?

Response
The Authority is the permittee for this facility. Therefore, if Wheelabrator should no longer be the operator of the facility, it will be the responsibility of the Authority to find a suitable replacement. MDE cannot speculate on whether this would lead to increased costs to the taxpayers or the Authority, and whether this would impact local pickup services or importation of waste from Carroll County, as this is outside of the purview of MDE.

(x) Section X: How will MDE monitor the facility for noncompliance of the permits and regulations and what actions may be taken if noncompliances occur?

Response
MDE inspectors will routinely inspect the facility for noncompliance with the Refuse Disposal Permit and applicable regulations and laws. MDE has broad enforcement authority to address violations at the facility, and type of enforcement taken will be dependent on the violation. Such action can consist of a Site Complaint or Notice of Violation, administrative or civil actions, and criminal penalties.

h. General Comments

(i) How much filter cake residue is there, how is it disposed and where, and how is it tested?

Response
At the request of MDE, the applicant provided additional information concerning this comment, as follows: "The filter cake residue is dust

and residual adsorbent captured in the fabric filter system. This residue will be removed from the fabric filter bags during the filter bag cleaning cycle. The solids will fall into the hoppers below the filter bags and removed from the hoppers by fluidized air pneumatic conveyors. A major portion of the collected solids will be recirculated back into the Turbosorp® reactor to maintain the fluidized bed level, while the rest of the solids will be discharged and transported to the residue silo. This residue material will be transported to the ash and metals recovery building where it will be combined with the bottom ash and fly ash. The combined ash will be routinely tested as part of the ash testing and disposal program."

(ii) How many bag filters are there, how often are they changed and under what criteria, how are they tested, how are they disposed and where, and are there specific regulations regarding their disposal?

Response

At the request of MDE, the applicant provided additional information concerning this comment, as follows: "The air emission control system will include fabric filter units that will have approximately 3,200 bags per unit; 6,400 total. These bags can have a typical operational life of 3-5 years depending on a number of operation and maintenance issues. When individual bags approach the end of their effective life they are replaced. Individual bags may also fail from time to time and they will be managed in a similar manner. Prior to removing fabric filter bags, a full cleaning cycle will be performed on the bag compartment. Compressed air is used to inflate the bags and remove most of the adhered ash. Fabric filter bags that need to be replaced will be placed inside of plastic "contractor" type disposal bags within the fabric filter compartment and then transferred outside to a collection container. Wheelabrator plans on disposing of these bags off site so any removed fabric filter bags will be properly characterized and disposed of in accordance with applicable state and federal regulations including EPA's February 3, 1995 Notice of Statutory Interpretation and related March 22, 1995 Revised Implementation Strategy regarding proper management of ash from Municipal Waste Combustors. A proper disposal site will be selected based upon the outcome of the fabric filter bag characterization."

There are no specific MDE regulations dealing with the disposal of the bag filters. If the material is non-hazardous and non-liquid, it can be disposed in a permitted municipal landfill as long as its disposal does not violate any of the landfill's permit conditions (i.e. dust control). If the bag filters should test hazardous, then they will need to be handled as a hazardous material.

(iii) Is scrap metal recovered from the ash stream to be covered and placed in leak proof containers during transport? How will it be handled at metal scrap yards and are there requirements for the proper handling and recycling of ash coated scrap metal?

Response
Part III, General Condition D.5 of the Refuse Disposal Permit requires ash to be transported in covered trucks or covered containers in such a manner as to prevent leakage of liquid on public roads and release of material during transport. Trucks transporting scrap metal which may include some ash material from the facility would need to meet these same requirements. See Comment No. 16(f)(viii) for the applicant's response on how the scrap metal would be handled at metal scrap yards. Scrap yard facilities are required to have a Stormwater Pollution Prevention Plan which addresses best management practices on the site to minimize erosion and runoff of pollutants and sediment into waters of the State. This Pollution Prevention Plan is a requirement of the General Permit for Stormwater Discharges Associated with Industrial Activity which is required for the site, unless MDE determines that a particular site needs an individual NPDES permit. Scrap yard facilities are also required to perform benchmark monitoring to validate their control measures are effective and maintained. They must perform visual monitoring and annually evaluate their operation. These are important features of MDE's new stormwater permit that provide additional confidence in these controls and practices.

(iv) How will the waste ash from the burning of tires be returned to their respective/originating landfills, if scrap tires will be brought to the facility from all points and from various scrap tire haulers? How will this be monitored?

Response
The applicant has identified the Frederick Reichs Ford Road Landfill and the Carroll County Northern Landfill as recipients of the ash. The applicant has also noted that the counties may secure airspace in other landfills and arrange for out-of-county ash disposal. There is no requirement in the Refuse Disposal Permit that ash generated at the facility must be returned to the municipality from which the scrap tires were hauled.

17. *Frederick Solid Waste Management Plan (SWMP)*

Frederick County Resolution 09-19 is not included in Frederick County's Recycling Plan in the SWMP, and therefore MDE should withdraw its conditional approval of the SWMP update.

Response
Frederick County Resolution No. 09-19 dated July 9, 2009, approved the Memorandum of Understanding between Frederick/Carroll Counties and the Northeast Maryland Waste Disposal Authority for the development and use of the incinerator. The regulations in COMAR 26.03.03, which contain the requirements for County Solid Waste Management Plans, and which require MDE approval of such plans, do not require the inclusion of Resolution 09-19 in Frederick County's SWMP. On September 9, 2010, Frederick County adopted Resolution No. 10-26 and forwarded the resolution to MDE for its review and approval in accordance with the requirements of COMAR 26.03.03 and Section 9-503(c) of the Environment Article. Resolution No. 10-26 amended Frederick County's SWMP to include the waste-to-energy facility that would provide long term disposal capacity for Frederick and Carroll Counties. In addition to this resolution, Frederick County made other changes to the SWMP and forwarded the revised SWMP to MDE for its review and approval.

On January 18, 2011, MDE approved Resolution No. 10-26 and conditionally approved the other sections of the revised SWMP. The SWMP amendment was conditionally approved provided the County updated its population information in Chapter 2, County Background Information, to be consistent with the adopted April 2010 Frederick County Comprehensive Plan population information.

SECTION V
Comments Received in Support of Project (no response necessary)

"It's time for the Maryland Department to issue the tentative permits and let Frederick County move ahead on building the facility."
"Here in Frederick specifically, every responsible study has confirmed that waste-to-energy is safest, lowest cost and most environmentally sustainable solution to our trash problem."
"These are sophisticated power plants that use post-recycled trash- instead of fossil fuels- to produce energy. They use some of the most advanced technology in the world and meet strict environmental regulations."
"Waste-to-energy operates safely in other locations around the state and the country."
"Waste-to-energy plants reduce net carbon emissions."
"The reality is that, as much as we recycle, there's going to be some waste left. This project gets us the rest of the way."
"I believe it is time for Frederick County to take responsibility for its long-term trash needs."
"Right now Frederick County is trucking our trash and our tax dollars to landfills out of state. It's doubly wasteful."
"In short, it should be recognized that the decision to proceed forward with a WTE facility, which is a decision for our elected leaders, nevertheless is one that was done with input from those of your fellow citizens who gave of their time to serve as volunteers on the County's Solid Waste Advisory Committee."

"I support the Waste-to-Energy project in Frederick County and believe it is the only smart thing to do. With the tax savings, job creation, green power economic development and environmental responsibility what else could we ask for."
"The proposed facility will meet the stringent environment and health standards set by Federal and State law. The selected technology includes advanced emissions controls which are proven to be reliable."
"The reality is that a waste-to-energy facility is just another step in the progress of building our infrastructure and rebuilding the economy."
"We need to move away from burying our trash, whether it's in Frederick County or in out-of-state landfills."
"It is clear to me that a waste-to-energy facility is the right choice for Frederick County."
"…it will provide green, renewable energy that is critical to ensuring that Maryland meets its long-term energy portfolio goals."
"Let us deal with our trash issues now and not leave it for future generations to contend with."
"It will increase recycling rates by recovering metals that we would otherwise send to landfills."