MARYLAND DEPARTMENT OF THE ENVIRONMENT

LAND & MATERIALS ADMINISTRATION

RESPONSE TO COMMENTS

FOR THE

CHESAPEAKE TERRACE RUBBLE LANDFILL (CTRL)

A public hearing was held on February 23, 2023, at the Annapolis DoubleTree by Hilton Hotel for the purpose of receiving public comment on the application for a Refuse Disposal Permit for the proposed Chesapeake Terrace Rubble Landfill to be located along Patuxent Road in Odenton, Anne Arundel County, Maryland. The following comments address both oral comments made at the public hearing and written comments received by the Maryland Department of the Environment (MDE) that relate to the solid waste permit and approval. MDE consulted with the applicant to completely address several comments. National Waste Managers provided subsequent information to MDE on May 7, 2024, which MDE reviewed and incorporated into its responses. The Department's responses are listed below each comment.

1) Location of Landfill - Zoning

Numerous comments were received expressing concerns regarding the location of the landfill. "The Area is poorly suited as a site for a rubble landfill", "The primary deficiency in this plan is that the landfill is very poorly sited."

Response: The location of the proposed landfill relative to surrounding land uses was approved by Anne Arundel County. State law precludes MDE from considering land use issues. As long as the facility meets local zoning and land use requirements, MDE is obligated to review an application for a rubble landfill. "*See Piney Orchard Cmty. Ass'n v. Maryland Dep't of the Env't*, 231 Md. App. 80, 103 (2016) ("MDE's sole obligation during Phase 1 of the permit application process regarding any duty to ensure compliance with local zoning and land use regulations is to receive a statement from the County certifying that the particular facility meets the local requirements.")" *The proposed use as a landfill is subject to Special Exceptions and Variances as issued by Anne Arundel County on December 23, 1993. The conditions contained therein included locations for access, operating life of the landfill, hours of operation, and replacement of shallow potable water wells impacted by the development. The Anne Arundel County Board of Appeals (AA BOA) determination dated December 1, 2022 granted a two-year extension of time for the implementation and completion of a previously approved special exception and a variance for a two-year extension for a previously approved variances for a rubble landfill and a sand and gravel operation. The determination by the AA BOA cited it found the extension of time would have no impact on the community." The complete AA BOA decision is included as part of the record and available for review in the repository or on MDE's website.*

2) Historic Areas

The landfill is situated next to the historic St. John AME Zion Church & Cemetery, Wilson town, and Woodwardsville.

Response: The consideration of historic buildings is outside the regulatory authority of MDE. MDE received a letter from Anne Arundel County confirming that the proposed Chesapeake Terrace Rubble Landfill meets all applicable zoning requirements and conforms to the County Solid Waste Management Plan. This is turn satisfies the requirement of Environment Article §9-210(a)(3)(1), which is a precondition for permit issuance. "*See Piney Orchard Cmty. Ass'n v. Maryland Dep't of the Env't*, 231 Md. App. 80, 103 (2016) ("MDE's sole obligation during Phase 1 of the permit application process regarding any duty to ensure compliance with local zoning and land use regulations is to receive a statement from the County certifying that the particular facility meets the local requirements.")"

3) MDE Permit Processing

The MDE is continuing to process the application while the developer and the County fight it out in the court system. The MDE process should not allow design review until settled. I would request your MDE stop processing the permit to operate unless and until the County and courts approve its operation.

Response: MDE is legally obligated to continue the review of the landfill permit application.

4) Well Water Contamination

Numerous comments were received expressing concerns regarding the contamination of well water.

Response: With the exception of COMAR 26.04.07.18K (see Comments 7, 23, 24), the design and proposed operation of the landfill meets the regulatory requirements specified in COMAR 26.04.07.18. The Chesapeake Terrace Rubble Landfill is designed with a liner and a leachate collection system. The liner system from bottom to top consists of two feet of prepared subbase with a permeability of $1x10^{-5}$ cm/sec, 60-mil High Density Polyethylene (HDPE) geomembrane liner, geocomposite drainage layer, two feet of drainage material with a permeability of $1x10^{-2}$ cm/sec or greater, and 10-ounce of non-woven geotextile on top of the drainage layer. The bottom of the prepared subbase has a minimum vertical buffer distance of 3 feet to the maximum observed or predicted groundwater elevation. The proposed liner design exceeds the minimum requirements found in Code of Maryland (COMAR) 26.04.07.16C(3) for a rubble landfill. The landfill cell floor is designed so that all liquid that percolates through the waste (ie. leachate) is collected at a low point (sump) on the cell floor. Leachate would then be pumped from the collection sump to a wet well and then to one of two, 500,000-gallon aboveground storage tanks where it would remain until it is transported off-site for disposal.

Additionally, the landfill will be surrounded by groundwater monitoring wells which would be sampled on a semi-annual basis for a variety of constituents that would detect a potential release from the landfill before the contaminants could migrate off of the property. The results of these semi-annual sampling events are required to be reported to the Department twice a year.

5) Groundwater Elevation Calculations

Was an algorithm used to interpolate the groundwater levels between the monitoring wells?

Response: In a submittal dated May 7, 2024, National Waste Managers provided "The groundwater contours were developed using the contouring program Surfer as produced by Golden Software and available through GroundwaterSoftware.com. As with any software program subsequent adjustments were made based on geologic and hydrogeologic site conditions." MDE has reviewed the contours developed by the applicant as well as the assumptions used for the calculations and finds the interpolation accurate.

Stormwater runoff and erosion. I'm very concerned about the impact that the landfill's going to have on flooding with the loss of the watershed, and the fact that forever no longer will you have pervious material that will allow the stormwater to drain down into the aquifer. You're going to seal that off by design, and the stormwater now is going to flow in the Patuxent River and the Little Patuxent River.

Response: Stormwater runoff during the construction of each landfill cell would be directed via constructed channels to a sediment basin which are designed to settle out the sediment and allow clean storm water to be discharged. As the landfill is built and is no longer below grade, the sides of the landfill would be built above grade. The outer slopes of the landfill would be covered with one foot of soil as interim grades are achieved and vegetated to provide stabilization of the slopes. The landfill permittee is required to place a minimum of six inches of soil or an alternative approved cover material over the waste by the end of each third day's operation, which serves to control vectors, fire, odor, blowing litter and scavenging. An additional one foot of soil would be placed over each 8-foot lift of waste. Once the landfill has reached its permitted height, the waste would be covered with two feet of soil prior to the placement of a low permeability cap over the landfill. Any rainwater that falls on the outer stabilized slopes of the landfill would be collected as clean stormwater, and any liquid falling on the waste would percolate through the landfill, be collected as leachate, and conveyed to the leachate collection tanks for offsite disposal. The stormwater conveyance structures have been designed with sufficient capacity to convey all stormwater runoff generated by the 25-year, 24-hour storm event to the sediment basin/stormwater management pond. An erosion and sediment control plan for the construction of the landfill is required and was approved by the Anne Arundel County Soil Conservation District. The facility would be required to update its erosion and sediment control and stormwater management plans every 5 years and when new construction takes place. A low permeability cap is required to be placed over the completed landfill. MDE reviews the closure plans for a landfill and inspects the placement of the closure cap during construction. Rainwater that falls on top of this cap would be collected as clean stormwater. The permittee and/or property owner are responsible for maintaining the landfill in a manner that does not cause pollution or harm to public health or the environment, which includes soil erosion.

7) Potential environmental or health risks from the landfill

Response: With the exception of COMAR 26.04.07.18K, the design and proposed operation of the landfill meets the regulatory requirements specified in COMAR 26.04.07.18. COMAR 26.04.07.18 K states - "K. Environmental Protection. The rubble landfill shall be operated to prevent air, land, or water pollution, public health hazards, or nuisances." MDE has determined the location of the entrance to the proposed Chesapeake Terrace Rubble Landfill would create a public health hazard due to its proximity to the Two Rivers Elementary School (formerly West County Elementary School) and intersection of the WB&A Trail. See comment #23 & 24. The issuance of a permit for the operation of the landfill does not relieve the permittee from complying with any additional federal, local, or State laws or regulations.

MDE has reviewed the application for the proposed Chesapeake Terrace Rubble Landfill and has found that with the exception of provision K the design and proposed operation meets or exceeds the minimum requirements specified in COMAR 26.04.07.18. The Chesapeake Terrace Rubble Landfill is designed with a liner and a leachate collection system. The liner system from bottom to top consists of two feet of prepared subbase with a permeability of 1x10-5 cm/sec, 60-mil High Density Polyethylene (HDPE) geomembrane liner, geocomposite drainage layer, two feet of drainage material with a permeability of 1x10-2 cm/sec or greater, and 10-ounce of non-woven geotextile on top of the drainage layer. The bottom of the prepared subbase has a minimum vertical buffer distance of 3 feet to the maximum observed or predicted groundwater elevation. The proposed liner design exceeds the minimum requirements found in Code of Maryland (COMAR) 26.04.07.16C(3) for a rubble landfill. The landfill cell floor is designed so that all liquid that percolates through the waste (ie. leachate) is collected at a low point (sump) on the cell floor. Leachate will then be pumped from the collection sump to a wet well and then to one of two, 500,000-gallon aboveground storage tanks where it will remain until it is transported off-site for disposal.

Additionally, the landfill will be surrounded by groundwater monitoring wells which will be sampled on a semi-annual basis for a variety of constituents that would detect a potential release from the landfill before the contaminants could migrate off of the property. The results of these semi-annual sampling events are required to be reported to the Department twice a year. If groundwater contamination is found through the monitoring system, the owner will be held responsible for remediation. The permittee and/or property owner are responsible for maintaining the landfill in a manner that does not cause pollution or harm to public health or the environment.

The facility will be routinely inspected by MDE, and if the facility is not operating in accordance with its permit conditions, appropriate enforcement action will be taken by

MDE. MDE's responsibility is to ensure the facility complies with the Refuse Disposal permit and applicable laws and regulations. The laws and regulations of COMAR 26.04.07 are prescriptive and based on proven industry standards and practices to ensure protection of human health and the environment.

Pursuant to COMAR 26.04.07.18K, Part IV Standard Condition D, Overall Operation 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." MDE has determined the location of the entrance to the proposed Chesapeake Terrace Rubble Landfill would create a public health hazard due to its proximity to the Two Rivers Elementary School (formerly West County Elementary School) and intersection of the WB&A Trail. See comment #23 & 24.

8) Monitoring Parameters

Should not radium be considered for testing in the monitoring wells at rubble landfills located near localities that have a history of homes having had unacceptable radon levels, requiring treatment. Radon is formed from radium.

Response: Radon is not part of the monitoring parameters at landfills in Maryland. Radon is formed from the radioactive decay of radium, which is a naturally occurring element.

EPA Method 625 provides testing procedures that will determine levels of other organic materials that could be found in the leachate from rubble landfills. In the COMAR required the testing, only volatile priority pollutants are required testing for the organics in the monitoring wells to develop a baseline of contaminants in the groundwater. But, should not this volatile testing be complemented by testing for Base/Neutrals and Acids accomplished by Method 625? For instance, phenol is found in leachate. It has been known to react with certain of the membrane liners used at landfill sites. For this reason, should it not be tested for? What about formaldehyde products found in insulation for older homes. Is this not a concern?

Response: Analytical Methods: A qualified groundwater scientist shall ensure that a water quality sample is collected from each groundwater monitoring well and surface water monitoring point (if applicable) and shall ensure that each water quality sample is analyzed using qualified independent laboratories certified for water quality analysis by MDE that can achieve the desired PQL concentration using only the most sensitive analytical methods listed in 40 CFR 136, 141, 143, and SW-846 for water quality analysis for each required parameter and PQL listed in MDE Monitoring Parameters Tables I and II and any applicable parameters listed in 40 CFR 258 Appendix I and II during each environmental monitoring event. Phenol and formaldehyde are not industry standard constituents of concern. MDE uses 40 CFR 258 as guidance to establish monitoring

parameters. A current list of laboratories certified for water quality analysis by MDE (includes the approved tests for each water quality laboratory) and a list of approved tests for water quality laboratories certified by MDE: https://mde.maryland.gov/programs/water/water_supply/pages/wsp-labcert.aspx

In the end, the best way to determine what additional testing should be required by the MDE to develop baseline data for proposed rubble landfills is by analysis of the raw leachate from existing rubble landfills in Maryland. This data will suggest what further testing the MDE should add to the COMAR list, if it has not already done so.

Response: MDE's approved Tables I and II were created in just this format. Data was collected from various sanitary waste landfills and a list of contaminants of concern was generated. Tables I & II are established monitoring parameters at this time in Maryland. MDE can impose additional parameters as needed.

Did the MDE require any additional testing under this COMAR in items (8) (p) for the Chesapeake Terrace Rubble Landfill?

Response: Yes, MDE has included six (6) PFAS analytes as parameters to be tested for due to their likelihood of being in accepted waste material associated with construction and demolition waste.

9) Fire Suppression and Fire Control

Comments were made concerning the potential for fire and any effects a fire would have on materials accepted at the landfill.

Response: A Fire Prevention and Control Plan is provided in the Operations Plan for the proposed Chesapeake Terrace Rubble Landfill.

10) Timing on the Implementation of a Water Contingency Plan

The permittee has 1 year to submit a draft plan in the event of water supply contamination. That seems like a long time to me. Should there be a requirement for the permittee to supply a bottled water service to affected residents? Presumably, the existing permit language is consistent with the existing requirements under COMAR, although, in my view, this is inadequate if someone's water supply is contaminated.

Response: Groundwater movement is extremely slow, a year's time is more than adequate to find a solution before the plume reaches the homes and businesses in the area. Groundwater monitoring wells are positioned around a landfill in order to detect groundwater contamination long before it moves off-site and poses a hazard to public water supply. If a hazard to public water supply is present, the permittee would need to provide alternative water services, which may potentially include bottled water

installation of public drinking water or having a deeper well drilled for each of the affected residents.

11) Traffic

Numerous comments were received expressing concerns regarding increased truck traffic. Gridlock from truck traffic, the potential for road accidents, the hazard posed by heavily loaded dump trucks on this (Conway) Road.

Response: Line of sight and truck traffic issues are outside of the purview of MDE and are within the jurisdiction of the local land use and zoning approval process. The Anne Arundel County Board of Appeals Special Exception includes conditions that; a right turn lane shall be constructed on eastbound Conway Road at Maryland Route 3 of at least 500 feet, and the road, from the intersection of Conaway Road and Patuxent Road to the entrance of the site, shall be improved with 12 foot travel lanes and 8 foot shoulders where the county right-of-way exists, and road improvements on Conway Road from Route 3 shall be constructed before rubble landfill operation begins. These conditions are County requirements and are outside of the purview of MDE. However, MDE is concerned with the proximity of the approved East Entrance to the proposed Chesapeake Terrace Rubble Landfill to the Two Rivers Elementary School (formerly "West County Elementary School) and the intersection of the WB&A Trial. The entrance of the facility is included as part of the permitted facility and falls under MDE's purview. See Response to Comment #14, #23 & #24.

12) Bond

"The bond that the landfill owner must post to cover any catastrophe appears to be about $4 million as required by Maryland Law. This amount is laughably low considering the kinds of remedial actions that might be required to repair damage from events such as leakage of toxic materials into groundwater."

Response: The applicant is required to post a bond payable to Anne Arundel County, as required under §9-211 of the Environment Article, Annotated Code of Maryland. The bond must be in the amount of $10,000 for each acre of land to which the permit applies, and not less than $250,000, as revised by the Maryland Legislature in 2004. On June 25, 2022 MDE received the Surety Bond as required.

If MDE determines that repairs or remedial actions are required at the Chesapeake Terrace Rubble Landfill, MDE would first hold the applicant financially responsible. The bond would only be used to pay for actions if the applicant is no longer able to finance the required actions.

13) Compliance

"All of the requirements in all of those pages mean nothing if compliance is not continuously monitored and enforced by qualified independent experts who are

accountable not to the landfill owner or operator but to the State of Maryland and to Anne Arundel County"

Response: MDE has no knowledge of whether Anne Arundel County will have its own inspector(s) at the landfill. However, MDE inspectors will conduct routine inspections of the landfill.

14) Nuisance
"COMAR 26.04.07.03 says MDE will consider six factors including is this landfill a nuisance to the public."

Response: The draft Refuse Disposal Permit No. 1993-WRF-0225, Part IV Standard Conditions Part D. Overall Operation requires "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. MDE determined the proximity of the proposed East Entrance for the operation of a sanitary landfill system to the Two Rivers Elementary School (formerly West County Elementary School) to be a harm to public health and therefore a nuisance. COMAR 26.04.07.03A(6) prohibits solid waste handling in a manner which will likely create other hazards to the public health, safety, or comfort as may be determined by the Approving Authority. MDE is gravely concerned that the heavy truck traffic associated with the operation of the proposed Chesapeake Terrace Rubble Landfill along the approved East Entrance poses imminent harm to students, parents, visitors and faculty of the Two Rivers Elementary School (formerly "West County Elementary School") and to pedestrians and bicyclists using the WB&A Trail.

Part H Roads requires "Roads shall be maintained in a serviceable manner to allow passage by a waste hauling, emergency, or inspection vehicle, and to prevent the tracking of soil, ash, or waste onto any public road and/or to cause a public nuisance. MDE reviewed the Operations of the proposed Chesapeake Terrace Rubble Landfill in regards to the passage of waste hauling, emergency or inspection vehicles and in the prevention of tracking soil, ash or waste onto any public road and found the operations sufficient to prevent a nuisance in this regard.

15) Historic Landfill Initiative
In 2009 MDE completed a historical landfill initiative for the EPA, and that report recommended that landfill be at least four miles from residences for - to reduce the impact of airborne emissions and contaminants.

Response: The Maryland Historic Landfill Initiative (HLI) prepared by MDE for the United States Environmental Protection Agency in 2009, was created to document Historic Landfill sites and assess the potential for further pre-remedial investigations of select sites. The objective of the investigation was to collect information concerning conditions at Historic Landfills sufficient to determine the presence or absence of human health

and/or environmental hazards and to determine whether further environmental actions were warranted. For the purposes of the study the term landfill referenced all land disposal practices used prior to the modern age of lined sanitary landfills.

The HLI did not recommend any distance to reduce the impact of airborne emissions and contaminants. The HLI established a target distance limit for the air exposure pathway as a four-mile radius around a site divided into incremental distances, which is the EPA standard for air migration pathway. This exposure pathway was intended to be used in context of the study of the historic landfills. The information in the Maryland Historic Landfill Initiative was not intended to be used in the evaluation of currently proposed landfills. The proposed Chesapeake Terrace Rubble Landfill is a modern, lined sanitary landfill.

16) Property Values

Numerous concerns were expressed about a decrease in property values. "The hard money that you paid for your homes, the value will go down, and that puts you in the -- it will be the lessening of the tax base for the county."

Response: Although MDE appreciates the citizens' 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. MDE received a letter from Anne Arundel County confirming that the proposed Chesapeake Terrace Rubble Landfill meets all applicable zoning requirements and conforms to the County Solid Waste Management Plan. This is turn satisfies the requirement of Environment Article §9-210(a)(3)(1), which is a precondition for permit issuance.

17) Asbestos

Concerns were raised regarding the disposal of asbestos and that asbestos is a hazardous waste.

Response: The Refuse Disposal permit allows the disposal of non-friable asbestos, which is not a hazardous waste. Part III, General Condition A.2(e) allows the disposal of friable asbestos only if it is packaged and labeled in accordance with COMAR 26.11.21.08A and the following conditions are met: prior notification to the landfill supervisor is provided, the friable asbestos is unloaded carefully to prevent emission of fibers into the air as required in NESHAPS 40 CFR Part 61 and specified in COMAR 26.11.21.06, the area used for burial of asbestos is restricted to the working face of the landfill or a separate cell dedicated solely to asbestos disposal, the asbestos is completely covered with earth or other refuse and is not compacted or driven over until sufficient cover has been applied to prevent the release of asbestos fibers to the atmosphere during compaction or application of other cover material, and landfill operators wear respiratory protection and protective clothing and use the equipment specified in COMAR 26.11.21.05. These measures have been determined to be adequate to protect workers and nearby residents.

18) Dust

Concerns were raised about dust generated at the landfill.

"…there will be a release of cement and other hazardous particulates from the concrete crushing operations."
"Concerns with public health issues from airborne particulate emanating from the landfill and trucks. Portland cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products regulations (Class E-corrosive material) and is therefore subject to the labeling and MSDS requirements of the workplace hazardous materials information system. This is a very common material for the landfill, and in deconstructed state produces dust that can and does become airborne."
"The reports by the developer of the proposed landfill address issues like dust from a dirt driveway into the facility, but do not mention the dust from the rubble itself. Certainly, every time a truck dumps a load of material, a dust cloud will be formed, to be carried as far as the winds will carry it."
"Section 12-9 (pg 1248) said "Dust will be controlled by sprinkling working areas with water."

Response: The generation of dust must be addressed as part of the Chesapeake Terrace Rubble Landfill operations. There are three main permit conditions that MDE uses to regulate dust issues. Part IV Standard Condition D, Overall Operation 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." Part IV Standard Condition H, Roads 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." Part IV, Standard Condition I, Dust Control states: "Dust shall be controlled through the application of water to roads, operational procedures designed to limit disturbance of bare soils, and other practices approved by the Department. No chemical, oil or petroleum product shall be used for the control of dust without prior written approval from the Department."

The Phase III Engineering Report states: "Dust and airborne particulate matter are regulated by the State of Maryland. Levels of such matter will be in compliance with Maryland and local regulations, if applicable. Dust is created by excavating operations, hauling cover from stockpiles and covering/filling operations. Vehicular traffic along the aggregate portion of the access roads may raise dust during dry periods and in the summer. Dust will be controlled by sprinkling working areas with water. Stockpiles and excavation areas will be sprinkled periodically while being worked. During dry periods and in the summer, a water truck equipped with pump and hose will be available to add

moisture when dust conditions arise. All paved roads will be swept or washed when dirt and mud have accumulated on them. Outgoing trucks will be routed through the wheel wash to limit the amount of mud tracked out of the landfill property during wet conditions."

The dust mitigation methods proposed by the applicant are those normally used at landfill sites and deemed adequate by MDE. Should it be permitted, the facility will be routinely inspected by MDE, and if the facility is not operating in accordance with its permit conditions, appropriate enforcement action will be taken by MDE.

There is no requirement in COMAR 26.04.07 for rubble landfills for the applicant to implement ambient air quality monitoring at the stie. Should it be permitted, MDE inspectors will routinely inspect the site to ensure the landfill is operating in accordance with applicable permit conditions regarding dust control.

With the exception of COMAR 26.04.07.18K (see Comments 7, 14, 23, 24), the design and proposed operation of the landfill meets the regulatory requirements specified in COMAR 26.04.07. These requirements have been established to protect public health and the environment at any permitted rubble landfill. The issuance of a permit for the operation of the landfill does not relieve the permittee from complying with any additional federal, local, or State laws or regulations. In a submittal dated May 7, 2024, the applicant provided that when available, stormwater runoff from stormwater ponds and collection points outside active waste disposal areas will be utilized for dust control in areas outside the active waste disposal areas. If water is required for dust suppression within an active disposal area, runoff from within the active waste disposal areas may be utilized by only within the waste disposal areas. When accumulated stormwater runoff is not available water obtained from an on-site production well will be utilized. Section 12.7.3 of the Operations Plan has been updated.

19) How far away is Cunningham Excavating landfill from this new proposed landfill, and are they are on the same aquifer? Did that landfill have the same regulations as this new one does? Is it legal to have two rubble landfills within close proximity to one another?

Response: The Cunningham Landfill is located approximately 1.25 aerial miles away from the proposed Chesapeake Terrace Rubble Landfill. The Cunningham Landfill is an unlined landfill that was operated prior to the current regulations for rubble landfills promulgated in 1997, which required rubble landfills to have a liner and leachate collection system. A low permeable cap was installed over the closed landfill in 1997. The cap consists of, from bottom to top, 20-mil PVC geomembrane, geosynthetic clay liner, 2 feet of prepared subbase, 60-mil HDPE geomembrane, and 2 feet of soil with vegetation. The Chesapeake Terrace Rubble Landfill will be constructed with a liner and leachate collection system installed on the bottom of the landfill. The liner will serve as a

barrier to the migration of contaminants from the landfill, and the leachate collection system will collect the liquids that leach through the waste material and remove them from the bottom of the landfill to be hauled offsite to a treatment facility. There is no restriction on the number of landfills in an area. The location of the proposed landfill relative to surrounding land uses was approved by Anne Arundel County.

20) Involvement of other Agencies/Foundations

What has been the involvement of the Maryland Department of Natural Resources in the application? Chesapeake Bay Foundation?

Response: The Maryland Department of Natural Resources received a copy of the Chesapeake Terrace Rubble Landfill permit application documents for their review and comment in accordance with COMAR 26.04.07. The Chesapeake Bay Foundation does not directly receive the proposed landfill application from MDE but may provide comments during the public commenting period.

21) Chesapeake Bay Watershed Agreement

CTRL if approved would operate between the forks of the Patuxent and Little Patuxent rivers. Has the CTRL been evaluated for and comply with the Chesapeake Bay Watershed Agreement?

Response: The Chesapeake Bay Watershed agreement does not have any requirements specifically related to the construction of a landfill. Sediment and Erosion controls and stormwater management are part of the design of the landfill and are designed and reviewed to be protective of nearby waterways.

22) Endangered Species

a) **"Someone needs to check to see if bald eagles are still considered an endangered species in our area."**

Response: According to the United States Fish and Wildlife Service, Bald Eagles were removed from the list of threatened and endangered species on June 28, 2007.

b) **In the Final Phase II Report is Section 10.0 Ecological Considerations, it is stated that "protection measures for rare species habitats should be addressed during the detailed engineering design (Phase 3 Application") (ref: on page 50/678 June 2020 Phase II Report). The text references correspondence with Katherine McCarthy of the Maryland Department of Natural Resources. Ms. McCarthy states that the National Heritage Program recommends that either habitat assessment or species surveys be conducted (ref: Phase II Report, page 481/678). Ms. McCarthy also states that a state endangered fish inhabits the Page | 4 Little Patuxent River in the area. Where was this addressed in the Phase III Report as it is not included in Section 6.0 Site Environmental**

Conditions?

Response: MDE initiated a request for an Endangered Species Act assessment with the Army Corps of Engineers and the U.S. Fish and Wildlife Service for the Chesapeake Terrace Rubble Landfill regarding the Northern Long Eared Bat and received a response dated November 8, 2023. Their response is attached to this Response to Comments document. MDE has reviewed the determination of the U.S. Fish and Wildlife Service and provided that the applicant abides by those recommendations the operation of the proposed Chesapeake Terrace Rubble Landfill will not affect the Northern Long Eared Bat.

23) Proximity of the East Entrance off Conway Road to the West County Elementary School

Response: MDE considers the proximity of the operation of a sanitary landfill system to the proposed East Entrance to the Two Rivers Elementary School (formerly West County Elementary School) to be a harm to public health. The entrance of the facility is included as part of the permitted facility and falls under MDE's purview. The truck traffic estimations provided by the applicant provide for, at a minimum, 80 additional heavy trucks entering and existing the facility whose current entrance abuts the Two Rivers Elementary School (formerly West County Elementary School). The Maryland Department of Transportation and State Highway Administration's Safe Routes to School program identifies that as traffic volume increases, parents feel less comfortable letting their children walk, bicycle or roll to school safely. According to the Center for Disease Control (CDC), 85 percent of children's trips to school are made by car or school bus; only 13 percent of school trips are made by walking, rolling, or bicycling. The increase in car trips to schools increases traffic congestion and creates gridlock near school drop-off and pick-up lines. This often fuels aggressive driving by drivers stuck in these traffic jams. The addition of heavy truck traffic in the vicinity of the elementary school entrance would drastically increase the potential harm to students and parents and disincentivize children walking or riding to school.
According to the Transportation Research Board, more than 25,000 school children are injured every single year in accidents that occur inside of school zones.
file:///C:/Users/agrenzer/Downloads/Children%20Traffic%20Safety%20Facts%202022%20Data.pdf
These accidents often involve motorists failing to recognize the child on the road and the majority of these accidents occur as children are getting on or off of school buses or crossing at intersections near the school. Heavy vehicles have limited line-of-sight due to the size and height of the vehicles. The line-of-sight limitations are exacerbated when pedestrians of small stature (elementary age children) are present. When drivers are speeding, driving recklessly, or driving distracted, serious and sometimes fatal school zone accidents can occur.
Anne Arundel County conducted a traffic impact study in February 2022 to evaluate the transportation improvement needs of the Conway Road Corridor from MD 3 to its

western terminus near the St. John A.M.E. Zion Church. The intent of this study was to identify existing geometric deficiencies, improve traffic level of service (LOS), reduce crash potential, provide additional access to all modes including emergency response services, improve pedestrian and bicycle compatibility, and evaluate alternatives to address deficiencies while minimizing impacts to the natural and built environment. The results of the study prompted the County to evaluate preliminary recommendations (August 2022) to address the needs of the study area and to prepare a Future Conditions Technical Memorandum (August 2022). The study identified several factors including: current and projected vehicular usage of Conway Road exceeding current capacity at some locations; sub-standard pedestrian and bicycle accommodations; and flooding and other blockage hazards resulting in closure of the road that create safety and accessibility issues for residents who can be cut off from vehicular ingress/egress and emergency response services. MDE reviewed the traffic impact study, the preliminary recommendations and the Future Conditions Technical Memorandum and agreed the existing infrastructure along the Conway Road corridor had existing issues with pedestrian level of comfort and bicyclist level of traffic stress without considering the introduction of the proposed Chesapeake Terrace Rubble Landfill. The stress of the Two Rivers Community and the newly built Two Rivers Elementary School (formerly West County Elementary) would not allow for the operation of a sanitary landfill through the currently approved entrance without direct harm to public health. MDE is gravely concerned that the heavy truck traffic associated with the operation of the proposed Chesapeake Terrace Rubble Landfill along the approved East Entrance poses imminent harm to students, parents, visitors and faculty of the Two Rivers Elementary School (formerly "West County Elementary School"). MDE requested that National Waste Managers provide a County approved alternate entrance that would minimize the potential harm to public health. National Waste Managers declined to provide a County approved alternate entrance. MDE has made the determination to deny the permit for the proposed Chesapeake Terrace Rubble Landfill pursuant to Env. Art. § 9-212.1(2) as the operation of the sanitary landfill system would harm public health.

24) Intersection of the WB&A Trail with the East Entrance off Conway Road

Response: MDE considers the proximity of the operation of a sanitary landfill system to the proposed East Entrance intersection with the WB&A Trail to be a harm to public health. The entrance of the facility is included as part of the permitted facility and falls under MDE's purview. MDE is gravely concerned that the heavy truck traffic associated with the operation of the proposed Chesapeake Terrace Rubble Landfill along the approved East Entrance poses imminent harm to pedestrians and bicyclists at the intersection of the WB&A trail. Over 67,000 pedestrians are injured by vehicular traffic each year in the United States. The Solid Waste Association of North America (SWANA) lists vehicles and equipment as the number one cause of injury at solid waste facilities. Anne Arundel County conducted a traffic impact study in February 2022 to evaluate the transportation improvement needs of the Conway Road Corridor from MD 3 to its western terminus near the St. John A.M.E. Zion Church. The intent of this study was to

identify existing geometric deficiencies, improve traffic level of service (LOS), reduce crash potential, provide additional access to all modes including emergency response services, improve pedestrian and bicycle compatibility, and evaluate alternatives to address deficiencies while minimizing impacts to the natural and built environment. The results of the study prompted the County to evaluate preliminary recommendations (August 2022) to address the needs of the study area and to prepare a Future Conditions Technical Memorandum (August 2022). The study identified several factors including: current and projected vehicular usage of Conway Road exceeding current capacity at some locations; sub-standard pedestrian and bicycle accommodations; and flooding and other blockage hazards resulting in closure of the road that create safety and accessibility issues for residents who can be cut off from vehicular ingress/egress and emergency response services. MDE reviewed the traffic impact study, the preliminary recommendations and the Future Conditions Technical Memorandum and agreed the existing infrastructure along the Conway Road corridor had existing issues with pedestrian level of comfort and bicyclist level of traffic stress without considering the introduction of the proposed Chesapeake Terrace Rubble Landfill. The operation of a sanitary landfill near the existing Two Rivers Community and the completed expansion of the WB&A Trail would harm public health due to their proximity to the proposed Chesapeake Terrace Rubble Landfill entrance. MDE requested that National Waste Managers provide a County approved alternate entrance that would minimize the potential harm to public health. (ie not intersect the WB&A Trail) National Waste Managers declined to provide a County approved alternate entrance. MDE has made the determination to deny the permit for the proposed Chesapeake Terrace Rubble Landfill pursuant to Env. Art. § 9-212.1(2) as the operation of the sanitary landfill system would harm public health.

25) Residential Well Sampling

The Phase II report states in Section 3.4 Residential Well Survey that there is no public water service in the area around the proposed Landfill and the residences within ½ mile of the property boundary obtain their water supply from wells or a few residences from springs. As stated in the Phase II Report, the installation (e.g., depth and installation details) and construction methods for all of the residential wells are not known including for existing potable wells. Since monitoring wells are installed using carefully controlled means and methods following permit requirements, they are not analogous to the older residential potable and the potable springs.
Questions:
a) Were any of the unknown screened wells and the potable springs sampled and tested for background levels?
b) Will MDE require periodic sampling of the residential homes to continually evaluate the safety of their potable water?

Response: The unknown screened wells and potable springs were not and will not be required to be sampled and tested for background levels. COMAR 26.04.07 does not

require the sampling of residential wells or potable screens for background levels. Should MDE determine there has been a potential release, it may require the owner/operator to sample residential wells to protect public health. Sampling of residential wells is subject to an agreement of the landowner to allow for the access and sampling of a potable well. A requirement to sample and analyze residential wells without cause is unduly burdensome on the applicant.

26) Floodplain Evaluation

Increased development with impervious land areas have contributed to the increased streamflow rate of the Little Patuxent River. The 89% increase in streamflow rate during 2018 - 2020 was not evaluated in the NWM reports. The Landfill proposes to discharge additional water into the Little Patuxent River that as stated before currently infiltrates into the underlying water table and aquifers.

The impact from the loss of the current NWM watershed in the Landfill area is unknown as water backs up from the Little Patuxent River and is stored in the watershed. The proposed outfalls will drain to established waterways and the overflow from the Little Patuxent River will be impeded. Modeling alone does not take into account the impact the loss of the watershed on the Little Patuxent River, the surrounding community, the roadways, and downstream in the Patuxent River without consideration of current flow rates in both rivers during peak storm events. Without an evaluation of the current River flowrates the potential for catastrophic flooding has not been assessed.

The FEMA Floodplain Map included in the NWM Phase II and Phase III Landfill Application reports shows the extent of the Little Patuxent floodplain as it was prior to 2012 before the increase in streamflow rates. The Floodplain analysis is outdated and not based on current conditions.

Response: The landfill has been designed outside of the 100 year floodplain delineated by FEMA, using the most current maps available.

27) Liability

From the technical specifications 02402 on page 1423 the landfill is making the contractor responsible for pollution of the waterways. The language used is as follows: "Any damage or pollution to adjacent soil or surface waters due to the contractors actions or negligence under this requirement, or any fines, penalties, cost of cleanup or reconstruction required as a result thereof, shall be at the soul expense of the contractor. The contractor shall immediately remedy, cleanup, and correct any conditions as a result of its pollution of surface waters." On the other hand, doesn't NWM which is the prime contractor have the ultimate responsibility to make sure the cleanup is done safely and completely. It will need to make sure that the

subcontractors have adequate insurance/bonding to assure the clean-up is done completely and properly.

Response: MDE considers a permittee to be the responsible party for all permitted activity at a site, and as such will hold the permittee responsible for any issues that occur on site.

28) Manufacturer's Warranty (Liner)

The design specifications for the Liner Systems do not include the manufacturer's warranty and life expectancy for the geomembrane liners and the proposed leachate and stormwater control pumping systems, this information should be included in the Phase III Report, Section 9 as it is relevant to the surrounding community and the long-term potential for impacts (beyond 5 years inspections and operation and maintenance addressed in the Phase III report).

Response: There is not a regulatory requirement to include this information in the Report. The Report is acceptable.

29) Independent engineering company to provide oversight. There is no mention of a third-party checker as required by COMAR 26.04.07.18T

Response: A full time waste inspector is not an MDE requirement, and is not required to be included in the Phase III Report. MDE no longer requires a third-party checker.

30) Origin of wastes to be accepted

Will the waste be from Anne Arundel County or is it from the State of Maryland.

MDE has no prohibition or permit conditions which restrict the origin of acceptable waste. The waste may be sourced from Anne Arundel County, neighboring Counties or from out-of-state. The Phase III Engineering Report says "Due to the cost of transporting rubble, it is a reasonable assumption that most of the rubble waste will originate within a 75-mile radius of the landfill." (Section 2-3).

31) Acceptable Waste Material

Hazardous Waste

A report by the New York State Department of Health states that there is a 12% increased risk of congenital malformations in children born to families that lived within one mile of a hazardous waste landfill site.

Response: The proposed Chesapeake Terrace is a rubble landfill that would not be allowed to accept hazardous waste.

Asbestos

Concerns were raised regarding the disposal of asbestos

Response: Pursuant to Env. Art. 9-210(c)(3)(i), asbestos is a waste that may be disposed of in a rubble landfill as it is included in the 2024-2033 Anne Arundel County Solid Waste Management Plan.

1993 Variance

The Phase III Report does not address the terms of the 760 foot Variance granted by the Appeal Board of Anne Arundel County in 1993. The variance required that any rubble placed into the 760 foot zone be of an acceptable rubble, defined as limited to: "a. Rock and similar irreducible materials such as concrete, non-refractory brick, and asphalt created as a result of construction activities, mining, or regrading projects without limit as to size, provided voids are not formed into which overlaying soils may be washed; and b. Topsoil intermittently layered with non-organic soil."
The current design has moved the landfill to within this 760 foot zone, so is a need to determine the impact on the Appeal Board requirement on the current landfill design and operation. For instance, at least two cells must now be open at the same time in a first lift status, with one to accept the acceptable rubble earmarked for the 760 foot zone, while the second cell, earmarked for all types of rubble outside the 760 foot zone.

Response: In a submittal dated May 7, 2024, National Waste Managers provided: This comment represents the Variance granted by Anne Arundel County as requiring the use of the "clean rubble" within 760 feet of dwellings and implies that the waste placed within the landfill that is less than 760 feet from the residences must also be "clean rubble". This representation is incorrect. The variance as granted, actually reduces the 1,000 ft set back from residences by 760 feet from 1,000 feet to 240 feet. The design as developed maintains the 240 ft minimum distance between the residences and the outside top of berm for the waste disposal area; therefore, the variance has no bearing on the material being placed within the landfill and does not impact landfill operations. The material to be utilized for constructing the landfill berms, exterior slopes and other features around the landfill that are within the 240-foot distance and subject to the variance, are defined in Specification Section 02223 "Structural and General Fill". The specifications exceed the minimum standards for "clean rubble" defined in the variance. In response to this comment we have added the following language to the end of the second paragraph in Section 3.2 (see attached text for Section 3 "Project Description" as a reference to the Variance. "The proposed use as a landfill is subject to Special Exceptions and Variances as issued by Anne Arundel County on December 23, 1993. The conditions contained therein included locations for access, operating life of the landfill, hours of operation, and replacement of shallow potable water wells impacted by the development. The variances granted a reduction in the setback distance for the landfill of 760 feet (1,000 feet to 240 feet) and reduced the distance for regrading by 100 feet (100 feet to 0 feet) to allow NWM to perform grading up to the property boundary

where necessary to eliminate unsafe conditions created by historic quarry operations." MDE agrees that the 1993 Variance reduces the 1,000 foot setback by 760 feet to 240 feet and the distance for regrading from 100 feet to 0. The design is in conformance with the Variance.

32) Leachate generation and disposal

The Phase III Report states 85,000-gal leachate will be generated, but only 75,000 has been agreed to be taken by the treatment company. Where will the un-accounted for 10,000 gallons per day go?

Response: In a submittal dated May 7, 2024, a letter from VLS Environmental Solutions was provided stating that a total of 150,000 gallons of non-hazardous wastewater can be accepted per day.

33) Leachate head exceeds requirement in leachate sump

Response: COMAR 26.04.07.16C(7)(d) requires that an engineered leachate collection and removal system, located immediately above the liner, shall be designed, constructed, operated, and maintained to collect and remove leachate from the landfill. The leachate collection and removal system shall be designed and operated to ensure that the depth of leachate over the liner does not exceed 30 centimeters (1 foot). The Chesapeake Terrace Rubble Landfill has been designed to maintain the 1-foot depth restriction over the landfill liner. The cell sump is a depressed area of the cell designed as a collection point for the leachate to collect prior to being pumped out. More than 12-inches of leachate may be present in the landfill sump. (Phase III Report, Section 10.4.1 Pump Level Sensors and Alarm Systems). Results of all HELP analyses (Phase III Report, Section 10.9 and Attachment 10A) indicate less than 1-foot head on the liner is achieved.

34) Solids in Leachate Storage Tanks

The means to remove an accumulation of solids in the leachate storage tanks were not addressed.

Response: In a submittal dated May 7, 2024, the applicant provided information about the removal of solids in the leachate tank in an updated Section 12.12.1 of the Operations Plan.

35) Leachate Collection System does not have redundancy

Response: In a submittal dated May 7, 2004, the text in Section 10 has been modified to state as required by MDE that duplicate pumps shall be installed in each sump.

36) Leachate Pumps shall be intrinsically safe (Risk of explosion)

Response: In a submittal dated May 7, 2004, the following information was provided "The EPG pumps specified are intended for use in landfill leachate sumps and are suitable for use in Class I, Division 1 hazardous classified locations pursuant to National Electric Code (NEC), Article 50 1-8 condition 4 requirements and is designed to be submerged in a liquid that is flammable when vaporized. We have added language to the first paragraph of Section 10.4 stating that any pump substitutions shall be meet NEC 501-8 condition 4 requirements and be capable of handling biological solids."

37) Leachate Sumps do not meet Regulatory Requirements

According to COMAR 26.04.07.16, under C. (7) (e), the leachate removal system shall be: "Designed to operate solely by the force of gravity in all areas where the system will directly underlie solid waste." This is not the case for this landfill because the pump station is beneath the landfill. Section 10.5 (Vol 1. P. 461) of the Phase III Report confirms that the sump in cell 7 is beneath the top of cap by a thickness of 106 ft. Such a design requires the MDE to issue a variance. Also, On page 355, Vol. 1 Section 10.4 of the Phase III Report, it said, quote: "Pump-on position will be 12 inches above sump floor, and pump high-level alarm will be 16-inches above the sump floor, per COMAR Regulations. This is not accurate. The Phase III COMAR regulations only state in Section 26.04.07.16 C. (7) (d), quote: "Designed and operated to ensure that the depth of leachate over the liner does not exceed 30 cm (1 foot) and (e) Designed to operate solely by the force of gravity in all areas where the system will directly underlie solid waste." Did the Applicant apply for a variance as it should have, or has this step been overlooked? Did the MDE officially provide a variance?

Response: The pumps in the landfill are located at the exterior of the landfill and fully accessible. The leachate removal system does not directly underlie solid waste and is acceptable. The sumps that collect the leachate are two feet lower than the cell floor. The pump high-level alarm is designed to be 16 inches above the sump floor. Therefore, the pump high-alarm level will be reached before the leachate level exceeds the maximum 12 inches on the cell floor liner. The design is acceptable and does not require a variance.

38) Leachate System Design Calculations

What storm event was used for designing the leachate pumps? Is the leachate storage adequate for this storm frequency? Was the design leachate collection and storage system based on average rainfall per year or peak rainfall?

Response: In a submittal dated May 7, 2024, National Waste Managers provided: The leachate production estimates were developed utilizing the USEPA Hydrologic Evaluation

of Landfill Performance (HELP) model. The model does not utilize individual storm events like those utilized when sizing stormwater management facilities. The HELP model is the industry standard for estimating leachate generation. It utilizes region specific rainfall and climatological data, in this case Baltimore, to estimate the amount of evaporation, infiltrations and movement of precipitation into and through the waste to predict the volume and rate of flow into the leachate collection layers."

39) Leachate System Design

The design uses two solenoids to select which tank receives the leachate. Solenoid valves can fail. Is this reliable? Is it better to use manual chain valves to manually actuate valves to control the overflow between tanks in an emergency. The design uses solenoid valves to control filling up the tanker trucks. Why not use a manual valve, which would seem to be more reliable?

Response: MDE does not have a regulatory requirement for the type of valves used. The design is acceptable.

At the leachate storage tanks, the need to isolate the flow meters so they can be removed for repair without shutting down the system should be considered. Also, the possible need for a bypass around each inlet solenoid valves in case they fail should be considered such as for V-104 and V- 204 on DWG 28.

Response: Isolating flow meters and valves is not a regulatory requirement. The design is acceptable.

40) Landfill Gas – Gas Collection System

The gas collection system that's located, how far is the setback to that to housing? And to a road, for that matter. Can they just drive off a road and hit a gas line that's got some sort of -- I mean, can you light a match and toss it out our window with a cigarette and, boom, there it goes?

Response: There is not a setback to a gas collection system from housing or roads required by COMAR 26.04.07. The composition of landfill gas can vary depending on the stages of waste decomposition. Methane gas is a component of landfill gas that is flammable when between 5% and 15% by volume in air. Structures on the landfill are monitored for methane levels, and gas monitoring probes are required to test for lateral movement of gas.

MDE's draft permit includes a provision for the permittee to design, install and operate an active landfill gas extraction system to remove gas from within the landfill within 3 years following the date of the first acceptance of waste. This period of 3 years is too long. Originally, I had read that 6 months was required. Why was this

changed from 6 months to 3 years? The conditions will be ripe soon after start-up of the landfill for the formation of hydrogen sulfide in the landfill. If the active landfill gas extraction system has any value to reduce the hydrogen sulfide in the landfill itself, then 3 years is too long to wait. The design of the gas extraction system should be completed within 6 months of obtaining an MDE permit so that it can be readily integrated into the landfill design and immediately be available if conditions dictate it. That would make more sense.

Response: The period was not changed. An active landfill gas collection system creates a vacuum within the landfill system to collect landfill gas as it is generated. In order to create the necessary vacuum and limit the intrusion of ambient air, which can cause a fire, a portion of the landfill system or cell must be temporarily capped or closed. It is estimated that it will take approximately 3 years before a sufficient portion of placed waste will be generating significant landfill gas. The operation of an active collection system prior to this time period would increase the potential for air intrusion and subsequent risk for fire. The conceptual design of the landfill collection system is part of the Phase III design. If conditions at the landfill require an earlier implementation of the installation of the gas collection system, MDE will proceed accordingly.

41) Landfill Gas – Hydrogen Sulfide

Hydrogen sulfide was not addressed in the Phase III Report, as requested by Edward Dexter of the MDE in his letter dated 11/27/2006 to Warren Halle. In this letter, Mr. Dexter said quote: "The Department has come to recognize that there are two potential areas of concern that must be addressed. These are (a) the generation of hydrogen sulfide. The natural decomposition of gypsum-bearing waste such as plaster and wallboard in an anaerobic environment has the potential to create hydrogen sulfide gas. This can create significant odor problems, and if it occurs at sufficient concentrations can have possible health implications for on-site workers." End quote. On my pdf page 1158, volume 1, of the Phase III Report it says, quote: "the hydrogen sulfide component of rubble landfill decomposition gases may also be of concern due to the toxicity and odor." (I searched for hydrogen in the pdf version and that is all that I found). Well then, why was it not addressed as the MDE had requested? How will it be remediated within the landfill and also within the leachate storage tanks? Where will the remediation system used for hydrogen sulfide reduction of the landfill gas and also for the treatment of the natural venting of gases from the leachate storage tanks be located? Has space been allowed for this in the design? If it will be remediated by the methane destruction system, this will not happen in the first three years according to your draft permit, since a passive system will be allowed during this initial period according to the MDE's draft permit. How will hydrogen sulfide released from the leachate storage tanks be controlled/remediated as leachate pumped into

the storage tanks displaces the odorous air from these tanks? Note that the tanks at the West Landfill are very close to homes.

Response: The control of landfill gas is addressed in Section 11 - Landfill Gas Management Plan of the Phase III Report. Landfill gas will be actively collected and destroyed by flares. Hydrogen sulfide can be detected at low concentrations. The landfill is required to control off-site odors and will be routinely inspected by MDE's Solid Waste Program inspectors. If off-site odors are detected, additional compliance and enforcement actions will be taken. The conceptual design of the landfill collection system is part of the Phase III design. If conditions at the landfill require an earlier implementation of installation of the gas collection system, MDE will proceed accordingly. Leachate storage tanks are designed to be negative pressure systems with containment of gasses contained in their headspace. There are control devices against fugitive emissions in the leachate storage tanks.

No H2S probes to continuously monitor this hazardous compound were provided.

Response: Hydrogen sulfide probes are not required by COMAR 26.04.07.

42) Landfill Gas – Monitoring

"Explosive Gases. A facility may not be designed or operated in such a manner that the concentration of explosive gases generated by the facility exceeds 25 percent of the lower explosive limits for the gases in facility structures, excluding gas control or recovery system components, and the lower explosive limit for the gases at the property boundary. I believe my underlined text for the property boundary was meant to be the same as in the facility structures and should really read: 25% of the lower explosive limit for the gases at the property boundary. Therefore, please validate the interpretation here!!"

Response: COMAR 26.04.07.03(B)(9) is modelled after the Federal Regulation 40 CFR 258.23a(2) that requires owners or operators of all MSWLF units to ensure that the concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary. The full citation is included below and the requirements of part (1) and (2) are independent of one another. The interpretation is incorrect. The Federal regulation is indented for Municipal Solid Waste Landfills, however MDE applies the same limits to Rubble landfills pursuant to COMAR.

§ 258.23 Explosive gases control.

(a) Owners or operators of all MSWLF units must ensure that:

(1) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and

(2) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.

The Facilities landfill gas monitoring network shall be monitored on a quarterly (approximately every three months) basis. This is at the facility structures and perimeter probes on p. 1162 of Vol 1 of the Phase III Report. That is not enough. Should it not be monitored by instrumentation and recorded continuously?

Response: Quarterly gas monitoring is the industry standard across Maryland landfills. The minimum frequency established under 40 CFR 258.23(b)(2) is quarterly and that frequency is acceptable for this proposed landfill.

43) Landfill Gas – Flares

Where are the flare systems located in relation to nearby homes?

Response: Landfill gas flares are located on the landfill property.

How is a passive gas system defined as used in the Phase III Report? If it were true that hydrogen sulfide could be eliminated in a gaseous combustion system, then this would not occur unless the landfill gas was burned. The report does not define what the engineer considers a passive system to be. Is supplemental fuel used in a passive system to burn the gas or is the gas simply allowed to escape to air without treatment?

Response: A passive landfill gas system is a system that does not actively pull landfill gas from the landfill using vacuum pressure. Passive systems may be vented to the atmosphere, or may use supplemental fuel to flare the gas.

44) Location of Methane Sensors

Why are sensors for methane at low point of structures? Methane is lighter than air. Should the sensors not be at a higher point?

Response: Methane is lighter than air, sensors should be placed in the upper area of the breathing zone near the ceiling of a structure. In a submittal dated May 7, 2024, the location of the methane sensors was corrected.

45) Landfill Design Height

§ 18-11-131 (12) of the Anne Arundel County Code requires that the landfill will not be more than 30 feet above the natural grade.

Response: The design was revised prior to the latest Phase III submission and the final design meets the 30 foot height limit.

46) Landfill Design Slope

The grade at the perimeter berm was increased to what appears to be 3/1 which would exceed the County's maximum allowed of 4/1, as noted in the Code article 18-11-131 (12). This slope would need to be made more shallow in order to meet the County's requirements.

Response: In a submittal dated May 7, 2024, National Waste Managers provided "All finished slopes within the proposed waste disposal areas are 4:1 or flatter. This is consistent with the requirements of County Code § 18-11-131 that states that finished slopes will be four to one or flatter. Slopes outside the limits of waste disposal, such as slopes for stormwater basins, embankments and other features are steeper than 4:1. The requirement for 4:1 slopes applies to the final landfill cap and not surrounding features…" MDE agrees that slopes outside the limits of waste are not required to meet the 4:1 requirement.

47) Recycling Operations

Response: In a submittal dated May 7, 2024, the applicant provided information about the proposed recycling program and updated the Operations Plan to include Section 12.15 Recycling and Salvage.

Is CTRL, rather than just hold construction debris in a hole, required to operate as a Construction & Demolition (C&D) landfill and work as a material recovery facility — also known as an MRF?. To do this, the items brought in are dumped into a pile, then sorted by the landfill workers to see what materials are reusable and which would be best sent to the landfill. The reusable materials are donated to or bought by local resale stores or businesses that specialize in building with reclaimed materials. Additionally, the material recovery facility may repurpose the materials on-site, such as taking lumber and chipping it into mulch.

Response: A Rubble Landfill is not considered to be a Material Recovery Facility. However, the proposed Chesapeake Terrace Rubble Landfill is required under Anne Arundel County Code to recycle no less than 30% of the total amount of material received in any 12-month period.

48) The Operation and Maintenance plan should include the weighing of all vehicles transporting solid waste to the landfill for disposal.

Response: Weighing of vehicles transporting solid waste is not a regulatory requirement and does not need to be included in the Operation and Maintenance Plan.

49) Determination of the volume and type of available cover material

Response: Information about the available and needed soils can be found in Section 8: Soil Description. The report is acceptable.

50) Use of Periodic Soil

Within 60 days of issuance of this (MDE) permit, the permittee shall modify the Phase (I?) Report and 9.4 of the Operation and Maintenance Plan to clearly state that periodic soil will be placed over exposed waste at the end of the third day's operation.

Response: Section 12.9.3 Periodic Cover in the Operation Plan states "By the end of the third day's operation, or more frequently if required, the working face and any other exposed wastes will be covered by a minimum of six inches of uniform compacted clean soil." Section 9.4 of the Operation Plan is Intermediate cover. The report is acceptable.

51) Noise

Concerns were expressed about noise at the landfill.

Response:
Part IV, Standard Condition I, Dust and Noise of the Refuse Disposal permit requires that litter and dust be controlled, and the operations of the facility be conducted in a manner that conforms to the applicable noise provisions of COMAR 26.02.03. The permittee is responsible for complying with the conditions of the permit.

The Phase III Engineering Report addressed potential noise impacts "Noise levels are regulated by the State of Maryland. It is expected that the surrounding woodland vegetation and topographic conditions will limit the exposure of the neighbors to landfill operations. All vehicles associated with the landfill operation will meet OSHA standards for noise levels. Operation of site equipment that contributes to excessive noise shall the limited to operating only during approved hours for landfill operation and during landfill cell or cap construction efforts or noise mufflers will be added to the equipment. If landfill personnel observe that mufflers fitted to equipment are damaged, personnel shall report the need to repair the equipment to the Landfill Manager who will schedule the required repairs, as soon as possible. If this damaged muffler results in the noise exceeding regulated levels, the affected equipment will be removed from service until repairs have been completed. If noise levels recorded at the site boundary are determined to be above State of Maryland limits, the Landfill Manager (or his designee) will work with equipment manufacturers to further muffle equipment noise or upgrade

equipment. The Landfill Manager may also choose to adjust his landfill operations to assure that noise levels do not exceed state limits."

Effective October 1, 2012, MDE is no longer responsible for noise enforcement. During the 2012 legislative session, House Bill 190 effectively transferred noise enforcement authority to local governments. MDE will continue to be responsible for setting statewide standards and general exemptions. Citizens who believe that the facility may be in violation of local noise ordinances should contact Anne Arundel County, Eastern District at (410) 222-6145 to report the violation.