STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

June 30, 2022

VIA E-MAIL AND U.S. MAIL

John Barta, General Manager
US Ecology Detroit South
1923 Frederick Street
Detroit, Michigan 48211

Dear John Barta,

SUBJECT: Notice of Deficiency for Renewal Application, Hazardous Waste Management Facility Operating License Renewal Application; EQ Detroit, Inc., DBA US Ecology Detroit South; Detroit, Michigan; MID 980 991 566; Waste Data System Number 399367

The Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has reviewed the Hazardous Waste Management Facility Operating License Renewal Application (Application), originally submitted on September 10, 2008, with comprehensive revisions last submitted October 5, 2020, and Waste Analysis Plan revisions last submitted on October 29, 2021. The Application was submitted by US Ecology Detroit South (USE-DS), pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and its administrative rules (Part 111).

Based on the review, EGLE has determined the Application is deficient.

Deficiencies identified by EGLE on the Application as a whole, and the Waste Analysis Plan (WAP) are enclosed as Attachments 1, and 2, respectively. The United States Environmental Protection Agency (U.S. EPA) identified deficiencies on the WAP with attention to Land Disposal Restrictions, which are enclosed as Attachment 3.

Revisions correcting the deficiencies must be submitted in electronic format and hardcopy within 90 days of the date of this letter.

USE-DS is on notice that, in addition to any other Part 111 rule, the EGLE Director shall deny the operating license application for an existing facility if the applicant has not submitted sufficiently detailed or accurate information to enable the Director to make reasonable judgments as to whether the license should be granted [R 299.9518(2)(c)]. The first Technical Notice of Deficiency was issued on September 30, 2017, and EGLE acknowledges the significant hours that have been spent by USE-DS, EGLE, and the U.S. EPA through the licensing process, with special attention on the nationwide Waste Analysis Plan initiative.

When submitting the hardcopy version, please use the replacement page format with the revision number and date in the footer of each page. Pages should be three-hole punched and numbered, to be placed into existing binders. Submit four copies of the revisions to the EGLE Lansing office:

Jacob Runge, Environmental Engineer
Engineering and Program Support Unit
Hazardous Waste Section
EGLE, MMD
P.O. Box 30241
Lansing, Michigan 48909-7741

Additionally, submit one hardcopy to each of the following:

Todd Ramaly, U.S. EPA, Region 5, Land and Chemicals Division, RCRA/TSCA Programs Section, Mail Code LR-17J,
77 West Jackson Boulevard
Chicago, Illinois 60604-3507.

Todd Zynda, Environmental Quality Analyst
EGLE, MMD, Warren District Office
27700 Donald Court
Warren, Michigan 48092-2793

When submitting the electronic version, please make each file less than 10 MB, as the EGLE e-mail system cannot receive larger files.

If you have any questions regarding this communication, please contact me at 517-242-8496; RungeJ@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Jacob Runge, Environmental Engineer
Engineering and Program Support Unit
Hazardous Waste Section
Materials Management Division
517-242-8296

Enclosures

cc/enc: Tabetha Peebles, Environmental Compliance Manager, USE-DS
Todd Ramaly, U.S. EPA, Region 5, Land and Chemicals Division
Christopher Lambesis, U.S. EPA, Region 5, Land and Chemicals Division
Kimberly Tyson, EGLE
Dale Bridgford, EGLE
Mary Carnegie, EGLE
Rich Conforti, EGLE
John McCabe, EGLE
James Day, EGLE
Todd Zynda, EGLE
Nicole Sanabria, EGLE
Shaun Shields, EGLE
Operating License File

MMD CORRESPONDENCE ROUTING SLIP

Log Letter No. (if applicable): _____ Date of Assignment: _____

Date Due to Office: _____ Assigned to: _____

Signature of: _____ Include "cc" to: _____

File Location/Name: _____

☐ **RUSH** **Basis:** _____

REVIEW		
Staff	Initials	Date
☒ Author	JR	4/11
☐ Unit Secretary	_____	_____
☒ Unit Supervisor	RAC	5/10/2022
☒ Section Secretary	VLT	6/29/22
☒ Section Manager	KMT	6/17
☐ Administration (if budget/personnel related)	_____	_____
☒ OTHER (if needed) Shields McCabe Sanabria _____	NS JM	4/12/22 4/25/22
☐ Enforcement Sect Mgr Review (if needed)	SS	4/26
☐ Field Operations Sect Mgr Review (if needed)		
☐ ☐ ☐	_____	_____
☐ Assistant Division Director	_____	_____
☐ Division Director Secretary	_____	_____
☐ Division Director	_____	_____
☐ Author Reviews Final Draft	_____	_____

Comments: _____

SECRETARY INFORMATION:

Attachment 1
Notice of Deficiency – US Ecology Detroit South (USE-DS)
Review Comments on Hazardous Waste Management Facility Operating License Renewal Application (Application)

Overall Comments:

1. Application must be updated to reflect current conditions of the site and surrounding areas/neighborhoods, as delay in processing and review of the application has resulted in a change in both facility operations and surroundings.

2. Application must be updated to reflect current organization names and position titles, both internally for US Ecology and state agencies.

3. Application must be updated to ensure references to updated sections are accurate.

4. All acronyms should be defined in every section of the application in which they are used, to eliminate ambiguity and improve clarity.

5. All instances of Michigan Department of Environmental Quality and MDEQ should be replaced with Michigan Department of Environment, Great Lakes, and Energy and EGLE, respectively.

6. Where Standard Operating Procedures (SOP) are relied upon to secure information USE needs for waste characterization, waste analysis, treatment, environmental monitoring, or any other requirements for appropriate storage or treatment of hazardous waste, USE must include the SOPs in the license application as required by Rule (R) 299.9508. The Materials Management Division (MMD) must review such SOPs to determine if USE procedures comply with the administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act (Part 111). It is not EGLE's intent to impede the business interests of the facility, or to slow the improvements of these documents. SOPs may not need to be license attachments if a license condition requires compliance with the approved SOPs. However, a review process for critical SOPs (those fitting the definition in the first sentence of this paragraph) is non-negotiable.

7. All unit capacities and calculations must be checked for accuracy and consistency. There have previously been discrepancies over the course of modular updates of the application, especially the Waste Analysis Plan (WAP), *(e.g., LPA max capacity on Sheet C-14, versus Section D-3d(ii), capacities in Table D-5 and Section D-1b).*

Section A – License Application & General Facility Information:

8. Please update the site information section. For example, John Barta is now the site general manager, not Raymond Landsberg.

CERTIFICATION OF CAPABILITY

9. *PE certification that the facility was constructed according to approved plans in the construction permit, or that an existing facility is capable of managing hazardous waste in compliance with Part 111 of Act 451.*
   a. Appendix A-12: The appendix document is titled "Certification Statement of Capability to Dispose of Hazardous Waste" but the text certifies that the facility is "capable of storing and treating hazardous waste." It is signed by a Professional Engineer and dated 9/10/2008. Note that the text of the certification statement references R 508 (d), and not 508 (1)(d). Please correct these discrepancies.

Section B – General Facility Description:

10. Update the information on the surrounding community, including number of residents and general neighborhood characterizations. For instance, it is estimated in the application that 500 people live within one mile of the facility, whereas the United States Postal Service estimates at least 2500 addresses within one mile (realizing not all are residential).

11. The application states that only ~45% of the site is paved. Is this still accurate as stated, and can it be clarified? The soil monitoring waiver requires that all active areas of the facility be impermeable, and thus the use of unpaved areas is a potential for unplanned (and potentially unperceived) releases to accumulate in site soils and spread. Therefore, the unpaved area that has been used for truck staging should be sampled for contamination and paved if current monitoring program waivers are to be renewed.

Section C – Waste Analysis Plan:

12. Technical deficiencies for the WAP are provided as a standalone document due to ongoing discussions and addendums since initial submission. United States Environmental Protection Agency (U.S. EPA)-specific documentation is also included with our WAP comments.

Section D – Plans and Specifications:

13. The draft WAP re-write included the same "C-2" confidential treatment attachment as MDI's WAP, but this attachment was not included in the official WAP re-write submittal. It was clarified with USE-DS staff that this was a deliberate omission. Therefore, a description of the requisite treatment must be added, as the Application must include treatment procedures per R 299.9508(b).

TREATMENT

14. The Application must include the following information regarding USE-DS treatment procedures:
    a. Demonstration of how the treatment will change the physical, chemical, or biological character or composition of the waste; neutralize the waste; recover energy or material resources from the waste; render the waste nonhazardous, safer, etc.
    b. The proper treatment technique, feed rates, operating conditions, and accuracy of devices intended to measure treatment parameters.
    c. Whether the wastes or treatment chemicals will have any detrimental effect on the facility, and measures to control these effects.
    d. Whether the wastes contain contaminants that may interfere with the treatment process and how the interference will be controlled.
    e. Whether the wastes contain contaminants that might cause the release of toxic gases or fumes and how they will be controlled.
    f. Whether the wastes contain contaminants that might form toxic constituents with treatment chemicals and how they will be controlled.
    g. Trial tests.

Section E – Environmental Monitoring:

General:

15. USE-DS must re-evaluate the locations of the ambient air monitoring stations taking into consideration of local meteorological conditions and emission sources and propose and justify the locations of the ambient air monitoring locations. Presently, there is no ambient air monitor located in the southeast corner of the facility property. There are residential areas to the east and southeast of the property. Based on an initial review of local climatological data from the Detroit City Airport, historic hourly wind direction measurements from 1992 to October 2021 indicate a monitoring station in the southeast corner would be downwind of the facility an estimated 35% of the time. In this same timeframe, the northeast station was downwind of the facility an estimated 31% of hourly wind

16. measurements. Based on this initial screening, a more thorough evaluation of the positioning of the ambient air monitoring stations is warranted, and (if revealed necessary) will require moving and re-installing the samplers.

17. USE-DS must add a co-located monitoring station to the monitoring network. This is necessary to more comprehensively assess data quality of collected samples. USE-DS must propose a location for the co-located sampler and update figures reflecting sampler locations in the application.

18. The ambient air monitoring program (AAMP) must identify the following information to be submitted with monitoring program data:
    a. Ambient air monitoring data must include, at a minimum, the following items in an electronic report:
        i. Analytical laboratory reports and associated quality assurance (QA), quality control (QC) information.
        ii. Sampler flow data.
        iii. Sample results.
        iv. Chain of custody documentation.
        v. Sampling narrative, which can include a certification statement and signature, as well as a narrative for any issues identified with monitoring data and actions to address issues, if needed.
        vi. An evaluation of the monitoring data including any supporting figures and tables.
    b. The monthly submission of monitoring results must include an electronic format (such as electronic data deliverables, excel, etc.) for ease of maintaining monitoring databases. If the monitoring method is based on sample volume (ex: metals), the sample results must be reported based on the calculated sample concentration based on air volume sampled, instead of non-detect values being reported as "<DL." At minimum, the submission of monitoring results must include the following fields:
        i. Site ID.
        ii. Monitoring Station ID.
        iii. Sample Date.
        iv. Parameter.
        v. CAS Registry Number.
        vi. Sample result.
        vii. Reporting limit and detection limit.
        viii. Data Qualifiers

19. The SAP or method specific SOPs must describe what field documentation is collected as well as where field notes collected during sample collection will be stored if not submitted with the monitoring data submissions. For example, for leak

20. testing or flow verification testing documentation, USE-DS may elect not to submit this information (unless it affects sample collection or results), but this information should be retained in the operating record.

21. In the proposed AAMP, language states “If any parameter that is analyzed by the laboratory and determined to be non-detectable, the value of the method detection limit for that compound divided by 2 (MDL/2) shall be reported.” This language is presently in the current AAMP; however, USE-DS does not report non-detect values in this method. Please revise language and monitoring data submissions to include reporting of non-detects at the detection limit. Data reported between the detection limit and quantitation limit should be reported and qualified.

22. The SAP must describe sample handling, preservation, hold time requirements, and all other sampling and analysis steps. Examples include where sampling materials are acquired from, confirming sampling materials are of proper quality, what checks are done before installation, how a flow check is performed, etc. The SAP should include a copy of the contaminants of concern (COC) form for reference as an example. As previously described, the SAP must specify that a copy of the COC be provided with each monthly submission. Note that SOPs can be separate from the SAP, but they need to be referenced in it. The SAP must also address record retention, what happens to outdated SOPs, and how are SOPs revised and sent out to operators.

23. Please provide SOPs for all sample collection activities, such as metals, and volatile organic compounds (VOC). SOPs must describe calibration procedures and frequency, sampling procedures, equipment/flow checks procedures, and associated QA/QC requirements. Guidance on SOPs are available in the U.S. EPA’s *Guidance for the Preparation of Standard Operating Procedures EPA QA/G-6*. SOPs may be referenced in the SAP, but USE-DS may modify the SOP and submit the modified SOP to EGLE. The SOPs must also identify the make and model of the flow sampling equipment. Where a specific method is cited, such as the U.S. EPA’s method TO-17, a copy of the method with any additional details or modifications to the SOP must be included. For example, USE-DS’ SOP for TO-17 must clearly outline the pump flow verification and calibration procedures, frequency, and acceptance criteria.

24. USE-DS must describe within the AAMP how ambient air monitoring data will be evaluated to detect a potential violation of 40CFR, Part 55, Outer Continental Shelf Air Regulations (Part 55), including any statistical calculations and ambient air action levels (concentration and duration). The AAMP must also identify and describe what procedures are enacted if monitoring data indicates a potential violation of Part 55.

25. USE-DS must re-evaluate the frequency of sample collection of the AAMP. The frequency of sample collection must be justified based on an assessment of

hazardous constituents managed by the facility, potential nearby community exposures, sources of emissions (including estimated emissions in a failure mode assessment), and local meteorological conditions.

Polychlorinated Biphenyls (PCB):

26. Table E-2 includes PCBs as an analyte to be measured. The monitoring methods specified in the attachment, TO-17; Code of Federal Regulations, Title 40, Protection of the Environment (40 CFR) Part 50, National Primary and Secondary Ambient Air Quality Standards (Part 50), Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere; do not include PCBs within the scope of the method, and are not appropriate to monitor for PCBs in ambient air. An alternative monitoring method must be proposed.

VOCs:

27. EGLE has identified concerns regarding the adequacy of the proposed TO-17 VOC monitoring method. Since USE-DS has used (and proposes to use) a version of method TO-17 similar to Wayne Disposal, Inc. (WDI), and there have been previously documented instances of moisture interference with VOC samples collected at USE-DS, EGLE believes the moisture interferences observed with samples collected at WDI are also present at samples collected at USE-DS. If USE-DS wishes to demonstrate that moisture interference with the TO-17 method is not a systemic issue at USE-DS, USE-DS may provide a response to this comment, including the previous three years of monitoring data laboratory reports and associated batch QC sample data. On February 4, 2021, EGLE received laboratory and QA documents for VOC ambient air samples collected from September 1, 2019, and August 31, 2020, at WDI. EGLE, MMD, and the Air Quality Division (AQD) reviewed the submitted laboratory results and associated QA/QC information. The monitoring data and associated QC information was compared to criteria and guidance contained in U.S. EPA Method TO-17, U.S. EPA's Quality Assurance Handbook for Air Pollution Measurement Systems, U.S. EPA Method TO-15, and University Laboratories' established QC limits for TO-17 analyses. Based on the review of the submitted QC data and other laboratory documents, the MMD and AQD have identified over 80% of the samples collected between September 2019 and August 2020 as impacted by moisture in the sorbent tubes. During this same time, the relative percent difference (RPD) between collocated samples showed poor precision using the current TO-17 method. For VOC analytes, >50% of collocated samples exhibited RPDs greater than 30% and for many analytes, most collocated samples exceeded 50% RPD. Based on this information, it appears moisture interference contributes to a loss of accuracy and precision for VOC samples collected via TO-17. The MMD and AQD have determined that an alternative VOC sampling method is necessary to adequately measure ambient concentrations of VOCs at facility fence line monitoring positions.
    a. EGLE requests clarification and response to the following items:

i. Most laboratory reports included footnotes for moisture interference. However, in some laboratory reports, internal standard recovery was low and surrogate recovery was outside of QC limits, but no footnote indicating moisture interference was present. Additional clarification is needed if the laboratory uses information not presented in the QA/QC reports to identify analytical interference caused by moisture.

ii. Please provide an SOP for the TO-17 analysis or additional detail regarding the laboratory's current TO-17 analytical procedure, specifically the following steps:
   a) What moisture management steps are implemented (for example, is a dry purge step used and is this step performed at elevated temperature?)
   b) A description of how and when internal standards and surrogates are added during sample analysis (for example, are internal standards added after a dry purge step?).
   c) Please confirm which internal standards are used to quantitate which target analytes.

iii. EGLE requests USE-DS submit an alternative VOC monitoring method for EGLE review utilizing U.S. EPA Method TO-15 or an equivalent method. U.S. EPA Method TO-15 is the recommended sampling method for many VOCs and has been demonstrated to be capable of meeting recommended data quality objectives for AAMPs. If USE-DS elects to use a modified version of TO-17 for VOC monitoring, USE-DS must submit a workplan for EGLE review which at minimum includes the following information:
   d) A detailed description of sampling equipment, field sampling method, and analytical procedures. This description must identify any modifications from the current sampling and analytical method.
   e) Target reporting limits for analytes.
   f) A sampling plan to demonstrate, through field testing, a modified TO-17 method with results comparable to TO-15, and which is sufficiently robust to achieve ≥ 75% data completeness with valid samples not affected by moisture or other QC deficiencies (≥ 75% data completeness is a recommended data quality objective per the U.S. EPA's QA handbook). The field tests must include concurrent sampling using TO-15, the current TO-17 method, and the modified TO-17 method. Please refer to U.S. EPA Method 301 and 40 CFR 53 subpart C for guidance on evaluating comparability between methods.
   g) A description of any proposed statistical analysis performed as part of the above item.
   h) A determination of the safe sampling volume and a description of the method to be used to determine the safe sampling volume.

i) Any sampling data collected using a modified TO-17 method collected prior to or outside of the scope of the workplan submitted to EGLE (such as data from preliminary tests used to select a sorbent packing material or operating a moisture trap).

28. If TO-17, or a modified TO-17 method is utilized, the SOP must state whether a particulate filter or ozone scrubber is part of the sampling equipment as well as their frequency for replacement.

29. If TO-17, or a modified TO-17 method is utilized, Section 13.1.2 of TO-17 recommends the safe sampling volumes of sorbent tubes should be retested annually or once every 20 uses, but two methods are outlined in section 10.8. The method SOP should specify which method is utilized to verify the safe sampling volume of the sorbent tubes, frequency, and where the information is retained. While it is not necessary for this information to be submitted with regular data submissions, records of this information may be relevant during in investigating data irregularities or other audit activities and records of this information must be maintained in the operating record.

Metals

30. In the SAP it states “The sampling for multi-metals will adhere to the requirements of 40 CFR Part 50, Appendix G for the determination of lead. All sections referenced by Part 50; Appendix G will likewise be followed.” With the following statement “Quality control and assurance requirements specified in the method will be incorporated in the sampling protocol.” It is unclear exactly what QA/QC requirements are being cited as Appendix G indirectly references 40 CFR Part 58 Appendix A and Appendix B. The referenced appendices have some differences in terms of their QA/QC requirements. EGLE requests USE-DS provide more detail as to which QA/QC requirements are being referenced.

E-2c(i)

31. Target detection or reporting limits must be revised to reflect what the laboratory is capable of meeting on a practical basis for analyte detection or quantitation. For example, current monitoring reports suggest that the actual detection limit for toluene is lower than the 1 µg/m3 detection limit listed in the table. Additionally, please add a detection limit for zinc in Table E-1.
32. USE-DS must provide justification for the analytes to be analyzed as part of the AAMP. This justification should consider possible emission scenarios (including failure mode assessment), types of wastes received, quantity of wastes received, and waste handling and treatment procedures. EGLE recommends this evaluation include monitoring for Arsenic, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, and 1,2-dichloroethane (both isomers) as these parameters are either presently monitored for at USE-DS and or are believed to be present in the wastes received

at the facility and exhibit relatively low Secondary Risk Screening Levels or Initial Threshold Screening Levels developed by AQD.

E-2c(ii)

33. USE-DS must establish quantitative QC criteria for the AAMP to assist in evaluation of data and self-initiate corrective action. EGLE recommends establishing the following criteria:
    a. A rolling 3-month data completeness requirement of 75% for each monitoring station. EGLE requests a data completeness requirement whereas at least 75% of the samples in a 3-month period are sampled and there are no data quality issues which may impact the validity of the results (for instance, if TSP filters show pinholes upon evaluation in the lab, those samples would be biased low).
    b. A measure of precision between co-located samplers (unless otherwise specified in a referenced method). For instance, a relative percent difference limit of 30% could be established and used for evaluating field and laboratory precision and to initiate corrective measures if needed.

34. Ambient air monitoring data submissions must include sufficient laboratory and field information to review and perform data validation. Laboratory or field QC information and samples (such as noted holes in TSP filters, continuing calibration verification samples) must be available for both USE-DS and EGLE to review the validity of the submitted monitoring data and apply appropriate data qualifications. As referenced in item 16 above, EGLE requests this information was submitted as a report with monthly submissions. The AAMP should describe how USE-DS performs data validation and when data is qualified or rejected.
    a. Field documentation indicating any issues such as flow verification discrepancies which could impact sample results
    b. Laboratory narrative identifying any issues identified with analysis
    c. Data qualifications
    d. Batch laboratory QC samples such as method blanks, laboratory controls samples, and calibration samples.

35. EGLE requests an assessment of ambient air monitor siting locations. Several sources (*Quality Assurance Handbook for Air Pollution Measurement Systems Volume 2, Technical Assistance Document for the National Air Toxics Trends Stations Program Revision 3*) offer recommendations for monitor siting criteria to help ensure representative sample collection and prevent interferences between inlets/monitors and nearby obstructions. It is noted that due to the nature of perimeter monitoring, not all siting criteria may be able to be achieved. To this point, the facility should identify siting criteria that cannot be achieved due to site limitations and develop a management plan or maintenance schedule to maintain achievable siting criteria. For example, vegetation near the monitoring stations may need to be periodically monitored, and obstructions to the monitor (such as

parked vehicles or equipment which are taller than the monitor) must be avoided during sample collection. Additionally, it is recommended that site observations are recorded if during sample collection, sample interferences such as construction, vegetation, or temporary obstructions can be noted. EGLE recommends USE-DS establish the following siting criteria to be maintained at the facility monitoring locations:

a. Height from ground to inlet: 2-15m
b. Horizontal and vertical distance from supporting structures to inlet: >1 meter.
c. Distance to trees: >10 meters.
d. Distance from obstructions: Twice the height the obstacle protrudes above the sampler.
e. Collocated monitors must be within four meters of each other.
f. TSP or high-volume samplers must be greater than two meters apart from all other sampling inlets.
g. TSP or high-volume sampler outlets should be greater than two meters apart from all other sampling inlets.

36. Please provide laboratory QA/QC protocols, QC sample frequency, and criteria for laboratory analytical analyses performed as required in R299.9611(2)(a)(viii). For example, TO-17 does not explicitly establish surrogate recovery limits but may be relevant in evaluating sample analysis. A QA manual may be submitted as a response to this request if it contains all the requested information or alternatively may be incorporated into method specific SOPs.

E-5:

37. This section states, “Should any sudden, unplanned discharge to sewers occur, the facility will notify the GLWA in accordance with the provisions established in Environmental Safeguard and Engineering Descriptions. Please provide the referenced provisions.

38. USE-DS must provide any records of releases to soil or groundwater, in addition to the mentioned 1989 UST removal. EGLE is aware of at least one incident – a 2017 household hazardous waste release which was cleaned up – and is not mentioned in the application.

ENVIRONMENTAL MONITORING

39. *SAP. Sampling and Analysis Plan for each environmental monitoring program*
    a. Section E: Environmental Monitoring Program (AAMP) discussion is minimal here. Detailed information on the types of samplers, the methods for deploying and collecting the samplers, the collection procedures for the samplers (including procedures to prevent contamination of the samplers), and sampler transport and submittal to the analytical laboratory (including chain of custody

procedures), along with all relevant forms, must be provided.

40. *SAP. Data analysis, including statistical method used.*
    a. Section E must be revised to include the standards that sample results will be compared to and any statistical or other treatment of the data used to make the comparisons to the standards.

41. *AAMP per Part 55 of Act 451.*
    a. Tables E-1 and E-2 must be updated to indicate analytical method used for each monitored constituent. One monthly sample is not considered adequate; reference Section E, "Environmental Monitoring," for more details.

CORRECTIVE ACTION

42. *Dates of operation for waste management units.*
    a. Please clarify as to whether this information is covered in Table D-1or elsewhere (specify where) in the application.

Section F – Procedures to Prevent Hazards:

43. Define and include a schedule for when fire, spill control, and decontamination equipment, and communications systems are tested and maintained.

Section G – Contingency Plan:

44. EGLE requests that tabletop exercises be regularly hosted with local emergency services to ensure continuity and compliance with the Contingency Plan.
45. Clarify "Evacuation Plan" language – it initially is interpreted as only being concerned with on-site, but later in the section neighborhood evacuation is mentioned – please clarify on what level local authorities would be contacted and when the evacuation of offsite properties would be implemented.

46. Clarify what procedures will be taken for on-site releases of hazardous waste. Even if immediate exposure risks are addressed following a spill, wholistic soil and/or groundwater impacts must be addressed through the RCRA/Part 111 corrective action program.

Section H – Personnel Training Program:

47. Various sections of the Outline for Intro Training Table (H-1a) have a frequency of "PERIODIC." Please revise to define timeframes when training will occur (i.e., six months, annually).

Section I – Closure and Post-Closure Plans:
General Comments

48. Please update the Closure and Post-Closure Plan using the updated EGLE Hazardous Waste License Application Forms previously provided to you.

49. Detailed Sampling and Analysis Procedures must be included which accurately describes the sampling and analytical methods that will be used to determine decontamination (see comment #12 below for more details)

50. Under R299.9613 (6) "The environmental protection standards established pursuant to the provisions of Part 201 of the act shall be used to perform closure and post-closure of a facility under Part 111 of the act if the limits are not less stringent than those allowed pursuant to the provisions of RCRA." Please update language referring to Part 201 criteria to include a statement clarifying that more stringent clean-up criteria might be needed for closure determination if Part 201 limits are less stringent than RCRA.

Unit Specific Information

I-1b

51. Please update the Unit Specific Information table so it is consistent with the information provided in the Plans and Specifications Section of the Operating License. The table does not include the silos S1, S2, and S3, and the vault 901.

Schedule of Final Facility Closure

I-1c(i)

52. The specified extraction technologies are referenced in 40 CFR 268.45 not in 40 CFR 268.65. Please correct with appropriate reference.

53. For this section, the brief description of the tasks to be completed and a schedule is sufficient. Other in-depth details about closing the specific units should be described in I-1e(i)- Unit Specific Closure procedures.

I-1c(iv-ix)

54. The generic groundwater volatilization to indoor air inhalation criteria and soil volatilization to indoor air inhalation criteria established under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 201), have been found to be insufficiently protective of human health relative to the Resource Conservation and

Recovery Act (RCRA) requirements and are therefore not applicable for use at RCRA regulated facilities for determining vapor intrusion risks. The U.S. EPA currently authorizes part 111 to use the statewide default background soil criteria provided in the September 28, 2012, Part 201 Tables, or develop a site-specific background for metals in coordination with EGLE MMD project staff. The remainder of the criteria authorized for use in Michigan are in the September 28, 2012, Part 201 criteria tables. Please specify in the application which criteria USE-DS will be using for each media.

55. Appropriate sampling methods, equipment, bottles, and containers must be used according to U.S. EPA 's and EGLE's guidance, and specific method requirements. Please include further detail on how samples will be collected and preserved accordingly to SW-846.

56. The plan must state that the following information will be collected and provided if contamination is found:
    a. The depth at which samples are to be collected
    b. The procedures to be used to collect soil samples
    c. The parameters that are proposed for testing.
    d. The procedures to be used to decontaminate any non-dedicated equipment and to document that the equipment was adequately cleaned.
    e. A description of the method(s) to be used to evaluate the analytical data.
    f. The proposed response activities that will be undertaken to address any contaminated areas.
    g. A schedule for the work to be conducted.

57. The Operational Memorandum #2 Sampling and Analysis Guidance issued October 22, 2004, has been superseded by the DEQ Application of Target Detection Limits and Designated Analytical Methods, March 2016. Please use the updated reference document to determine appropriate method detection limits (Copy enclosed).

58. Please describe the QA/QC procedures that will be followed.

Unit Specific Closure Procedures:

59. The handling inherent in the process of compositing samples is highly likely to allow additional volatilization of contaminant mass, resulting in a non-representative sample that underrepresents contaminant concentrations. Please provide for collecting discrete samples for waste characterization that includes VOC and SVOC analysis for closure sampling activities.

CLOSURE.

60. *A description of the methods to remove, transport, treat or dispose of all hazardous wastes.*
    a. Section I-1(c), Item 1. refers to "Removal, Treatment and Disposal of Waste Inventory" but no detail is provided The Application must identify the procedures USE DS will use to remove, treatment, or disposal of the waste inventory at closure.

61. *A detailed description of the steps to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils.*
    a. The Closure and Post Closure Care Plan states that cleaning of Tanks, Equipment and Concrete and Asphalt Surfaces, respectively, will be conducted "in compliance with the extraction technologies specified in 40 CFR 268.45 or will consist of triple rinsing." The specific methods (specific extraction technologies or triple rinsing) are to be used on which specific hazardous waste management units must be listed in sections I-1c(i) through I-1c(iii). Section I-1b states that unit-specific methods of closure are "listed in the table below" but they are not.

62. *Criteria for determining the extent of decontamination required.*
    a. Section I-1e indicates that decontamination will be considered complete for concrete and bituminous surfaces, walls, secondary containment, and steel lined concrete vaults after triple rinsing (combined with a detergent wash in the case of steel lined concrete vaults) with no confirmatory sampling required. Confirmatory samples must be collected from (at a minimum) the point of lowest elevation in all these units.

63. *A detailed description of other activities (run-on and run-off control, GWM, etc.) necessary to ensure that the closure performance standard is satisfied.*
    a. No specific mention of methods to comply with this requirement was found. There were scattered references to collecting washwaters and the overall groundwater monitoring program, but a synthesis of these and other activities to satisfy the closure performance standard must be provided in the Closure and Post Closure Care Plan.

Section J – Environmental Assessment:

64. Please clarify which parts of the facility are paved and where secondary and tertiary containment is implemented.
    a. Reevaluate statement made in Section J-1f regarding odors, dust, and/or other inconveniences to local residents. We have received complaints regarding nuisance dust emanating from USE-DS to the St. Aubin bike path, and USE-DS

is currently in an administrative consent order with EGLE, MMD's Solid Waste Section to combat ongoing odor complaints.

ENVIRONMENTAL ASSESSMENT

65. Please update and include information that pertains to the residents, residential buildings, and recreational areas within a one-mile radius of the facility. This potentially includes:
    a. “nearest residential homes are located 0.25 miles to the east.”
    b. ~500 ppl living within one mile of site, ~1,000 within three miles.

66. Many items close to site are not mentioned:
    a. The Eastern Market food processing facilities, located.
    b. The Greenway/bike path that is near the facility.
    c. The Judicial Complex that is being built near the facility.

Section O – Inspection Schedules:

67. Please describe what USE-DS is conducting as inspections on the tanks, including tank integrity testing schedules (including tank thickness testing and the like).

Attachment 2
Notice of Deficiency – US Ecology Detroit South (USE-DS)
Review Comments on the Waste Analysis Plan (WAP)
June 30, 2022

The following have been prepared by EGLE after reviewing USE-DS WAP Revision 6, submitted October 2021. Please revise the WAP to address these comments. The United States Environmental Protection Agency (U.S. EPA) also reviewed this WAP submission for compliance with the Land Disposal Restriction (LDR) regulations. Attachment 3 is provided as a standalone document of these U.S. EPA review comments, and clarifications/questions posed to EGLE within Attachment 3 are provided at the end of this document.

A2 - Introduction

1. Paragraph 1: Add "and that only waste treated to appropriate regulatory standards, such as LDRs, leave the facility." to ". . ., are received at the facility."

A2.A.1(a)

2. Paragraph 3: Replace ". . . exceeding applicable land disposal restrictions may be approved for treatment at EQD or be. . ." with ". . . exceeding applicable land disposal restrictions will be approved for treatment at EQD or be. . ."
3. Paragraph 3: Remove "to be delisted" from "Delisting of waste codes must utilize procedures detailed in the Code of Federal Regulations, Title 40, Protection of the Environment (40 CFR), §260.22 to be delisted."

A2.A.1(b)

4. Please reword the bullet "Ignitable wastes (D001 when flashpoint is <140F) with a flashpoint <90F may be stored but may not be treated," for clarity and to explicitly state what waste is prohibited for treatment.
5. Please attach the Host Community Agreement referenced for definition of radioactive waste; this ensures a change of the status of that waste at USE-DS will be addressed through the license modification process.

A2.A.2

6. Delete one of the two uses of "odor" in the physical characteristics tab of the "Waste Description" bullet.

A2.A.3(a)

7. Paragraph 2, bullet 2: For the statement, "A generating process that has an input with fluctuations that do not alter the characterization, as demonstrated by knowledge, will not require reoccurring sampling analysis unless there is a change to the generating process that impacts the characterization (which

includes the constituents subject to treatment)," how will it be established that fluctuations are not altering characterization?

8. Paragraph 2, bullet 3: What, specifically, does "generated at the highest input levels" mean? Please provide examples of how that occurs in actual waste generation scenarios.
9. Paragraph 3: The mid-sentence tense changes in the parenthetical makes it difficult to understand. Please revise for clarity.
10. Paragraph 5: Remove “as practicable” to begin the paragraph.

A2.A.3(b)

11. Paragraph 1: Reword “general thought process” to state that, "the following steps will be taken to ensure waste is adequately characterized before EQD will agree to accept it" or similar.
12. Bullet 2: Include a caveat saying that the rationale and justification used to make this decision will be provided.
13. Bullet 4: Remove "minimum and maximum" qualifier.

A2.A.4

14. Paragraph 1: Does USE-DS propose any other standards of reasonableness besides Table UTS in 268.48 or is this to be the sole standard?
15. Paragraph 3: Please define "Acceptable Treatment Methods,” including a regulatory standard/citation.

A2.A.4(a)

16. Paragraph 1: Regarding “knowledge of impermissible dilution,” how will this knowledge be actively solicited and obtained by USE-DS?
17. Paragraph 2: Regarding “Constituents may fluctuate…,” what defines a "fluctuation" and what degree of "fluctuation" is tied to what increased frequency of analysis?

A2.A.5

18. Paragraph 2: “Contaminates” should be “contaminants”.

A2.A.6

19. Paragraph 1, bullet 1: How does USE-DS ensure/audit generators' compliance with this requirement?
20. Paragraph 2: Add "or the waste will not be accepted" as a condition at the end of “Changes which impact the waste characterization…”

A2.B.1

21. Paragraph 2: Add “of the waste,” after, “Prior to allowing the transporter to relinquish possession” and before “paperwork is…”
22. Paragraph 3: Please specify what kind of knowledge triggers this additional sampling?

A2.B.1(b)

23. Paragraph 4: What are the decision criteria used to determine if layers or other heterogeneities are composited or analyzed separately?
24. Paragraph 5: Under what specific circumstances will grab samples be collected from the surface of the waste and under what specific circumstances will composite (or other) samples be collected from the surface of the waste? This discussion in unclear.
25. Paragraph 6: Revise the second sentence to read ". . . a roll-off box of soil may not be able to be sampled using an auger, etc.".
26. Paragraph 6: Insert "to sample the free-standing liquids" after the word "utilized" at the end of the paragraph. Also, please describe how the solid portion of a waste with some free-standing liquid will be sampled.
27. Paragraph 7: Please revise the sentence beginning with “Decontamination is only required if…” for clarity; it may be better to use a bulleted list of conditions.
28. Paragraph 7: Please clarify that these "personnel" refers to personnel conducting sample collection at the facility.
29. Paragraph 8: Insert the word "immediately" between "performed" and "following". If screening tests are not performed immediately (less than an hour) after sample collection, please provide the methods by which samples will be preserved until they can be subjected to screening tests.

A2.B.1(c)

30. Level 2 bullet: What does the use of "supplement" mean in this instance? Does it mean that all incoming waste streams will be sampled unless it is physically impossible to do so? If that is the case, please state it.
31. Paragraph 3: Please identify when “Expected screening results are assigned to a waste,” and the personnel making the assignment Are these "expected screening results" the "pre-approval information" mentioned in the following sentence?

A2.B.1(d)

32. Bullet 1: What is "the solvent" discussed here? Are these supposed to be solid (state of matter) wastes contaminated with solvents? Please clarify.
33. Paragraph 2: Delete the phrase "whenever possible". If the following sentence is corrected as noted, this phrase is redundant. Replace “exceptions” to begin the next sentence with, "the only exceptions are. . ."
34. Paragraph 2: The final sentence is a non-sequitur. Please redraft for clarity.
    a. “Debris” sub-bullet 2: This is the first mention of “data quality objectives” in the document. If formal data quality objectives (a specific and defined term) exist, please provide a detailed discussion of what they are, how they were developed, and the quantitative and qualitative procedures for determining if they are met. If they do not exist as described, please remove this term here and throughout the remainder of the document.
    b. “Filters from inside tanks…” sub-bullet 2: “Reason for exception: Representative samples can cannot reasonably be collected.” needs to be redrafted.
    c. “Spent activated carbon…” sub-bullet 1: First sentence combines two fragments of different sentences; please redraft for clarity.
    d. “Spent activated carbon…” sub-bullet 2: First sentence needs to be redrafted.
    e. “Waste with an acute health hazard…” bullet: Are there additional procedures (in terms of generator procedures) to ensure that waste that is an acute health hazard is adequately characterized by the generator? Potentially infectious waste can be sampled using the same personal protective equipment regularly used by personnel at the generating facility.
35. Paragraph 3, “certification from the generator…” bullet: Insert "that" between "generator" and "waste".
36. Paragraph 3, “documentation that must be…” bullet: The parenthetical “(EQD or EQD)” -is confusing the sentence structure, please redraft for clarity.
37. Paragraph 4: Is the first sentence (“An inspection of the shipping document…”) supposed to state that an inspection of the shipping document will be performed, and a land disposal restriction certification must accompany the hazardous waste manifest? As drafted, it is very confusing and open to varying interpretation. Redraft to state explicitly what is meant.
38. Paragraph 4: What demonstration is the "such a demonstration" being referred to here? Revise to specify and clarify.

A2.B.2

39. Paragraph 1: What is the difference between "waste profile information" and the "pre-approval information"? Please revise or define what is being compared.

40. Paragraph 1: Please redraft to, first, define specifically what constitutes a "discrepancy" and, secondly, list how each type of discrepancy will (not might or may) be addressed.
41. Paragraph 2: The second sentence states that the information (not the waste) will not be treated until the discrepancy is resolved. Please revise to state what is meant appropriately.
42. Paragraph 2: Does “the designated facility” in the sentence “The transporter can retain custody…” refer to USE-DS or “an alternate facility” mentioned in the previous sentence? Please redraft for clarity.
43. Paragraph 2: Add “appropriate to the container and waste type.” to the end of the sentence “. . . custody will be placed in a permitted storage area.”
44. Paragraph 2: If re-packaging is required, please describe who will be responsible, the schedule on which it will proceed, and how and where documentation of any such re-packaging will be provided and maintained.

A2.C.1(a)

45. Paragraph 1: What specific compatibility issues result in what specific waste types being transferred to what specific "appropriate containers"?
46. Paragraph 2: Replace “This” in the sentence “This waste must be separated…” with “ignitable and/or reactive”
47. Table C.1, Poisonous Liquids row: Please define PG I, Zone A materials.

A2.C.2(a)

48. Paragraph 1: Please define “constituents of concern” and ensure that it is used consistently through the remainder of the document.
49. Paragraph 1: Add “and the results of pre-acceptance screening” to the end of the final sentence.

A2.C.2(b)

50. Level 1 Paperwork Compatibility (and throughout): Are the “Level X” references to the tiered screening approach in A2.B.1(c)?
51. Level 1 Compatibility Assessment: The sentence “Compatibility grouping is not combined with incompatible waste or reagents that may cause adverse reactions,” is a non-sequitur. Please redraft for clarity.
52. Table C.3, Oxidizers row: “Single oxidizer type will most commonly be processed by itself followed by deactivation confirmation,” but how will single oxidizer types be handled in situations that are exceptions to what is "most common"?

53. Level 2 Reactivity Screening: The waste must be screened for reactivity with the specific reagent(s) that WILL be used to screen it. Please remove the word "may."
54. Excessive Gas Evolution bullet: Define "appear" and "significant amounts" as terms that can be assessed qualitatively (appear) and quantitatively (significant amounts).
55. Level 3 Mock Tank Compatibility, paragraph 1: Replace "which" with "and" in the first sentence.
56. Level 3 Mock Tank Compatibility, paragraph 1: Wastes for which reactivity is a potential concern and for which a sample cannot be collected must be reevaluated (the "pre-approval" process) more frequently than annually. Quarterly reevaluation, along with reevaluation any time the process or inputs generating the waste change, is appropriate.
57. Level 3 Mock Tank Compatibility, paragraph 3: What happens to waste that has already been placed in a tank if it fails compatibility testing?
58. Level 3 Mock Tank Compatibility, paragraph 4: Why is this expected that the reagents used to retreat are compatibilized? Is the waste being retreated with the same reagents used in the initial treatment? If this is the case, please state it. Also, in what specific circumstances will this alternate approach be used? What does "may be compatibilized" mean? Does it mean that the reagent(s) will be exposed to a sample of the unsuccessfully treated tank?
59. Last paragraph page 32, including bullets: This text is redundant, duplicated verbatim previously. It should be deleted.
60. First paragraph, page 33, final sentence: To whom must it be acknowledged and why? This sentence reads like it is a justification for the compatibility testing (as proposed) failing to detect incompatibilities leading to adverse reactions. If that is the case, please revise the proposed compatibility testing so that it is more dependable in detecting the potential for adverse reactions in real world waste treatment scenarios.
61. After Compatibility Testing, paragraph 1: replace "may" in the sentence "If an adverse reaction observed…" with "will either." Add text describing the decision criteria used to determine if the waste in question should be treated in a different tank (or any other changes to the treatment process) or returned to the generator.

A2.C.3

62. Paragraph 1: Please define "different like-wastes."
63. Paragraph 1: In the sentence "EQD does not selectively bulk RCRA hazardous waste…," replace "does not" with "will not."

64. Paragraph 2: Please reword the phrase “pending compatibility confirmation” to indicate no waste will be bulked or consolidated until compatibility is confirmed, for clarity.
65. Paragraph 2: If the intent of the sentence “If a roll-off box or other bulk reusable…” is to address wastes that are bulked, consolidated, and then transported to an off-site location, please redraft to make that clarification. If something else is meant by this sentence, please describe.

A2.D.1

66. Paragraph 1: Replace "treated" with "conducted" in the sentence “No other hazardous waste treatment is proposed to be treated…”. Also, is this paragraph meant to state that immobilization is the *only* hazardous waste treatment to be conducted at USE-DS or that hazardous debris will *only* be treated by immobilization? As written, it states the former.
67. Paragraph 1: Please redraft the sentence, “treatment of the constituents of concern associated with the waste codes…” for clarity (potentially “Treatment of the constituents of concern associated with the waste codes characterized and UHCs (when required) reasonably anticipated to be present at the point of generation, as identified by the generator during the pre-approval process, occurs in accordance with applicable treatment methods, as described in Table D.1, below.” if EGLE interprets the meaning correctly).
68. Paragraph 1: Add “or not accepted by USE-DS.” to the end of the final sentence.
69. Paragraph 2: List (either in this paragraph or in a separate paragraph following Table D.1) the specific situations and decision criteria used to determine when a treatment will deviate from these recommended treatment methods.
70. Paragraph 3 (immediately following Table D.1): What defines “as appropriate” in this situation? Please redraft to list/define scenarios in which waste will be retreated.

A2.D.2

71. Paragraph 1, bullets 1 and 2: Identify/cite these tables and where they are found (bullet 3 provides an excellent example).

A2.D.2(a)

72. Paragraph 1: Insert ",as identified in the pre-approval, pre-acceptance or screening processes," between "generation" and "will" in the sentence, “In addition to the waste codes, UHCS reasonably…”
73. Paragraph 2: This paragraph is inappropriately included here. Please move this paragraph to the appropriate section of the WAP.

A2.D.2(b)

74. Paragraph 1: In the sentence, “This includes waste streams in which generators…” please redraft to define what "this" is referred to in this sentence. As written, the sentence states that all waste received at USE-DS will be disposed of in a subtitle C landfill even if delisting makes disposal in a subtitle D landfill permissible. If this is the case, please leave as-is.
75. Paragraph 3: Replace "one, two, or three" with "any one or more".
76. Paragraph 3: Redraft the final sentence, beginning at “then compliance with treatment standards…” to describe which compliance standards *are* applicable.
77. Paragraph 4: Insert the regulatory reference to the specific concentration-based standards cited here.
78. Paragraph 4: How will USE-DS verify that the concentration-based standards are NOT being exceeded if they do not perform any dioxin or furan analysis on the incoming waste?

A2.D.2(c)

79. Paragraph 2: Does this re-packaging of “like kind wastes” consist of aggregating "like-kind" wastes from different incoming waste shipments? If so, state such.
80. Paragraph 3: Please redraft to add specific criteria for passing or failing the "pour-up compatibility test". If they are the same for the mock tank compatibility test, those criteria may be referenced here by name and WAP section number.
81. Paragraph 4: Please list (or reference an existing list or table elsewhere in the WAP) of waste types and compatible containers.

A2.D.2(e)

82. Paragraph 3: The pair of sentences, “Hazardous debris that exhibits the characteristics of corrosivity, or reactivity (D003 sulfides and cyanides only) will be treated using one of the extraction, destruction, or immobilization technologies identified in Table 1 of 40 CFR §268.45. EQD treats hazardous debris in accordance with immobilization technologies specified in 40 CFR 268.45,” contradict each other. Will USE-DS be using multiple treatment technologies, as indicated in the first sentence, or immobilization only, as indicated in the second sentence? Redraft to resolve this contradiction.
83. Paragraph 4: Redraft the clause “… for toxicity characteristic debris and debris contaminated with listed waste,” to read “for the toxicity characteristic and for each listed contaminant.”

A2.D.2(f)

84. Paragraph 1: Replace “its” with “the wastes”.
85. Paragraph 2: Replace “constituent” with “constituents” when referencing PCBs.
86. Paragraph 2: The final sentence of this paragraph is incomplete. Please redraft.
87. Paragraph 3: Replace “may” with “will” and “must” with “will also.”
88. Paragraph 5: While a single grab sample may be adequate in some cases to make pre-treatment decisions, additional samples are recommended in cases of greater waste volume or variable wastes in order to design the most effective treatment process(es). Single grab samples are not appropriate to determine if post-treatment wastes meet land disposal restrictions and a statistically based sampling strategy, designed to determine if the treated waste meets the treatment standard(s) with a 95% level of confidence, must be utilized.

A2.D.2(g)

89. Paragraph 2: Replace “does not” with “will not.”
90. Paragraph 2: Redraft the final sentence of the paragraph so that it states that it is the waste that is being treated to the applicable standards and not (as it currently reads) the standards are treated to the applicable standards.

A2.D.3

91. Paragraph 3: As previously discussed, with both USE-DS and EPA, a single grab sample is not adequate to be considered representative of the population of treated waste in all but the smallest treatment batches. A statistically based sampling strategy or set of strategies, sufficient to result in the collection of a sample (Incremental Sampling Methodology) or samples sufficient to characterize the true mean of the population of treated waste with a 95% level of confidence must be proposed, approved, and implemented.
92. Paragraph 4: Why is this discussion of mixing inserted here? Please limit the discussion in this section to the collection and analysis of samples for the purpose of verifying that treatment has achieved LDRs or other applicable disposal standards
93. Paragraph 5: Define when “cure samples” will be collected.
94. Paragraph 5: What does “placed into testing” mean? Analyzed? Please redraft for clarity.
95. Paragraph 6: Remove "as practicable" at the start of the paragraph. State that sampling techniques will adhere to 40 CFR §261, Appendix I and SW-846 except in the cases of specific exceptions. List those exceptions and why they are necessary.

96. Paragraph 7: Insert “will be,” between “The excavator bucket” and “decontaminated to…”
97. Paragraph 8: Insert and define "immediately" after "performed".
98. Paragraph 9: How will the proposed check samples be identified and recorded so to ensure that they will not be submitted/used for compliance purposes?
99. Paragraph 10: Are "treatment residues" and 'treatment batch residues" the same thing or different things? If the same thing, use only one term for consistency, if the latter, define each term.
100. Paragraph 11: Please define "tank failure concentration."

A2.E.1

101. Paragraph 1: Replace "the generator has" with "EQD will".
102. Paragraph 1: Replace “may” with “will” in the statement: “… appears to contain free liquids may be analyzed…”.

A2.E.2

103. Paragraph 1: Which "facility" is meant here? USE-DS, the receiving facility, or the facility that originally generated the waste. Please clarify.

A2.E.3

104. Paragraph 2:Please identify which “facility” is being referred to in this context

A2.E.4

105. Paragraph 1: Please identify which “facility” is being referred to in this context.
106. Paragraph 2: Please revise the statement “… originally received material no longer exists and therefore does not qualify as land application,” for clarity.

A2.F.1

107. Paragraph 1: Replace “to” with “with” in the phrase, “… associated with compliance *to* LDRs as described in A2.F.6.”

A2.F.2

108. Paragraph 1: Is the “treatment facility” meant to reference USE-DS? Please revise for clarity.

109. Paragraph 2: Which “facility” will comply, USE-DS or the “different treatment or storage facility”?

A2.F.3

110. Paragraph 1: “The operating log is maintained as follows: Maintained in the operating log…” needs to be revised for readability.
111. Paragraph 1, bulleted list: This is a list of documentation that is maintained in the operating log, not a description of how the operating log is maintained. Redraft the preceding paragraph to state such.
112. Paragraph 1, “Monitoring…” bullet: Does this mean ALL monitoring, testing, or analytical data or just those data associated with corrective actions?
113. “Items kept in a hard copy…” statement and bullets: Are these items kept someplace other than the operating log? If yes, describe where they will be kept and maintained. If no, include them in the list immediately above.

A2.F.4

114. Paragraph 1: Replace each instance of “facility” with USE-DS.
115. Paragraph 2 and bulleted list: The regulatory language itself is not a suitable description of what, specifically, USE-DS will do to meet these requirements and document that they are met. How, specifically, will USE-DS ensure compliance with these regulations for any waste accepted?

Appendix D, Sampling of Containers

116. Paragraph 1: Redraft the first sentence for clarity; while true, state the devices that are used to sample waste at USE-DS. Reference Table A.1.
117. Paragraph 1: Remove the occurrences of “reasonably” and “reasonable.”
118. Paragraph 1: Reference Table A.2 at the conclusion of this paragraph.

Appendix D, Sampling of Bulk Material

119. Paragraph 1: Insert “contained in” between “The bulk solids are large” and “containers such as roll-off boxes…”
120. Paragraph 1: Remove the occurrences of “reasonably” and “reasonable.”
121. Paragraph 2: Replace “in” in the statement “The elevation in which bulk samples…” with “at.”
122. Paragraph 3: What does “as much” refer to in this context? Please redraft for clarity.

123. Paragraph 4: What, specifically, does USE-DS propose to do to ensure that this waste is consistent with the pre-approval characterization?

Appendix D, Sampling Equipment Use

124. There are two identical “Auger” paragraphs, please remove one.
125. “Trier” paragraph: The first sentence needs to be redrafted for clarity. Perhaps “A trier is used to sample waste with a fine-grained consistency, such as soil or similar waste.”
126. “Scoop” paragraph: Insert the word "samples" between "near surface…" and "and…".

Appendix D, Internal Analytical Procedures

127. “pH screen” paragraph: Insert “of known pH” after “…to acidic, neutral, or caustic liquids.”
128. “Cyanide screen” paragraph: Replace “in” the sentence, “All reagents are as prepared in SW846 9014,” with “as per.”
129. “Cyanide screen” paragraph: How will a waste that screens positive be handled?
130. “Sulfide screen” paragraph: How are results to be interpreted and how will the waste be handled based on those results?
131. “Reactivity with Water,” “Reactivity with Stabilization or Solidification Reagent,” “Reactivity with Bleach,” “Reactivity with Caustic,” and “Reactivity with Acid,” paragraphs: What constitutes a reaction for the purposes of requiring the management of the waste as reactive?

Table A.2

132. “Volatiles, Aqueous samples with no residual chlorine present” row, “Preservation” column: Add “Preserve with HCl to pH <2”.
133. Footnote, page 3: USE-DS must specify the “laboratory data objectives” that need to be met for a smaller sample size to be considered adequate.

Table A.3

134. “Odor (Incidental)” row, “Analytical Method” column: Some wastes are not proposed for analytical/laboratory analysis. How and when will odors be identified in those situations.
135. “Reactivity-water” row, “Analytica Method” column: How are the results assessed (what constitutes a reaction)?

136. “Cyanide Screening” row, “Analytica Method” column: If a violet color results from the addition of reagents, the waste must be treated as cyanide containing waste until and unless laboratory analyses demonstrate it is not.

Table B.2

137. “Alternative methods…” footnote(?) at top of chart: The alternative methods must be listed in the “Analytical Method” column.
138. “Odor (Incidental)” row, “Analytical Method” column: There must be a procedure/SOP by which odor is assessed and the assessment documented. Please cite and attach.
139. “pH screen” row, “Discrepancy” column: EGLE and the U.S. EPA have previously requested that a difference of plus or minus 2 standard pH units for the pre-approval waste profile be treated as a discrepancy. Please make this revision.
140. “Free Liquids” row, “Frequency” column: Please revise to include a verification and documentation of verification over time.
141. “pH Liquid” row, “Discrepancy” column: As per pH for solid wastes, a difference of plus or minus 2 standard pH units from the pre-approval waste profile will be considered a discrepancy. Please revise to indicate this.
142. “Frequency” column, beginning at the “Cyanide” row: All entries in this column for the remainder of the table are not a "frequency" as indicated in the column header. These entries state the general type of analysis that will be done. Please revise this column to list the frequency at which the waste will be analyzed.

Table C.2

143. “Alternative methods…” footnote(?) at top of chart: The alternative methods must be listed in the “Analytical Method” column, and a citation (or SOP, if it is a proprietary method) provided.
144. “Frequencies…” footnote(?) at top of chart: Please revise to state something like the following: "This analysis will be completed at a frequency of X times per (/load/batch/container, etc.) unless exempted per the provisions of A.2.B.1(d)".
145. “Frequency” column: "Each incoming waste stream sampled for analysis" is not a frequency. Please redraft so that it is clear how often a waste stream will be subject to the analysis listed under the “Method” column in the same row of this Table.

Attachment 3 Clarifications

146. The U.S. EPA response to comment 50, page 6: EGLE confirms this comment has been addressed.
147. The U.S. EPA response to comment 144, page 15: EGLE confirms this comment has been addressed.
148. The U.S. EPA response to comment 148, page 16. The wastewater rows were indeed removed from Table D.2, but it does not clarify or answer the comment unless USE-DS is no longer treating or disposing of wastewater. See the U.S. EPA's response to comment 149 – 152 for further clarification/comment on Table D.2's content.
149. The U.S. EPA response to comment 152, page 16: The requested SOPs were not provided; the analytical method has been merely listed in the table (with many simply listed as "NA"). This comment remains unaddressed.

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

MEMORANDUM

SUBJECT: Review of October 29, 2021, Response to Comments (RTCs) on the US Ecology Detroit South's (USE-DS) RCRA Waste Analysis Plan (WAP), EPA ID: MID980991566

FROM: Lisa Graczyk, LCARD, Physical Scientist

Christopher Lambesis, LCARD, Environmental Scientist

Todd Ramaly, LCARD, Environmental Scientist

TO: Jacob Runge, Michigan Environment, Great Lakes, and Energy (EGLE), Environmental Engineer

DATE: April 01, 2022

At EGLE's request, U.S. Environmental Protection Agency (EPA) reviewed USE-DS's (also referred as EQD) response to comments on their WAP, dated September 25, 2020, that were related to Land Disposal Restriction (LDR) regulations. Below are EPA's comments. For ease of reading, the original WAP sections, WAP comments, and USE-DS responses have been highlighted gray and the original comment numbering retained.

Overall Comments

1a. Specifying the methods that will be used to meet the waste analysis requirements for the Land Disposal Restriction (LDR) program given in the Code of Federal Regulations, Title 40 (40 CFR) 268.7, as required by R 299.9605(1), and 40 CFR 264.13(b)(6). These methods include the required elements described in 40 CFR 264.13(b)(1-5); the WAP must specify the parameters and rationale for analysis, the test methods, sampling methods, and frequency for each hazardous waste.

EQD Response: The information is included in A2.D and A2.E.

EPA Comment: This information is not included in A2.D and A2.E. However, Table D.2 has general sampling methods and SW-846 analytical methods. It does not appear to have laboratory SOPs. Appendix D has descriptions of sampling methods. The final WAP has a placeholder for Table D.2 describing Table D.2 as having 141 pages while the actual .pdf of Table D.2 has only 54 pages. Please confirm why the .pdf version is only 54 pages.

1b. Providing the information that must be included in the WAP in order to perform analyses that may be needed at USE-DS, as described in 40 CFR 264.13(b) and (c), including:

1b(i). The parameters for which each hazardous waste, or non-hazardous waste if applicable under 40 CFR 264.13(d) will be analyzed, and the rationale for the selection of these parameters (i.e., how analysis of these parameters will provide sufficient information of the waste's properties as specified).

1b(ii). The test methods that will be used to test/analyze these parameters.

1b(iii). The sampling method that will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

1b(iii)1. Appropriate sampling methods in Appendix I of Part 261 for the waste. 1b(iii)2. An equivalent sampling method.

EPA Comment: The sampling methods in Table D.2 state the type of equipment to be used and state in several instances that the sample will be a "single random grab per tank." WAP doesn't describe how a representative sample will be taken. Table D.2 should state the specific sampling method/SOP to be used and not the sampling equipment. If sampling methods are in Appendix D, then the table should reference the SOP with the sampling method to be followed. Further, we disagree that a single random grab per tank would be representative in most instances.

When treating toxicity characteristic (TC) wastes, USE-DS is required to meet LDR UTS for each waste. USE-DS may also wish to decharacterize such TC wastes which can allow for disposal in a subtitle D landfill. These two objectives are not interchangeable. The sampling and analytical methods both differ as characterization is based on representative sampling and the TCLP method while LDR verification is based on grab samples (in consideration of variability). The target LDR concentrations may be a different TCLP concentration than for characterization or a concentration from a totals analysis. The WAP, sections A2.A and A2.D, and Tables A.3 and D.2 must clearly specify the parameters, rationale, sampling and analytical methods, and sampling frequency for each waste for each sampling objective.

An example is waste D030, toxicity characteristic for 2,4-dinitrotoluene, at a concentration of 0.13 mg/L TCLP. To decharacterize D030, the TCLP concentration of a representative sample must be below 0.13 mg/L. The LDR UTS for D030 is 140 mg/kg total 2,4-dinitrotoluene. Meeting the LDR UTS of less than 140 mg/kg total 2,4-dinitrotoluene cannot be interpreted as also decharacterizing D030 as the maximum possible TCLP concentration at 140 mg/kg total is 7.0 mg/L, over 50 times higher than the TCLP concentration needed to decharactarize. Furthermore, sampling for characterization is based on representative techniques while LDR verification should be based on grab samples (in consideration of the waste variability). An example of a WAP table entry containing specifics for the two different D030 analysis objectives with recommended revisions is shown with bold underlined text in the table below.

Waste Code (prior to treatment)	Waste form as generated (LDR Non-wastewater)	Parameter	CAS#	Rationale	Treatment Standard	Sampling Method	Analytical Method	Frequency
D030	LDR-nonwastewater	2,4-dinitrotoluene	121-14-2	Determine if waste or residual **meets LDR treatment standard**	**140 mg/kg total**	Treatment Tanks –scoop, trowel, or trier. **X random grabs per tank**	SW-846 **3550**, 8270	Every tank when waste code has been identified as applicable and property/constituent is subject to treatment
	LDR-nonwastewater	2,4-dinitrotoluene	121-14-2	Determine if waste or residual **is toxicity characteristic with representative sampling**	**0.13 mg/L TCLP**	Treatment Tanks –scoop, trowel, or trier. **1 Y-aliquot composite per tank, or X random grabs per tank**	SW-846 **1311 and then sample preparation following methods in 3500c**, 8270	Every tank when waste code has been identified as applicable and property/constituent is subject to treatment

The WAP must clearly differentiate the parameters, rationale, sampling and analytical methods and sample frequency for each particular objective (characterization vs LDR verification, etc.) for each waste. Other examples where nonwastewater concentrations for decharacterization and LDR verification are not interchangeable include D010 – selenium, D032 – hexachlorobenzene, and D043 - vinyl choride. While totals analysis divided by 20 (TCLP method totals-in-lieu) may allow for totals demonstrations for decharacterization for other TC wastes, the sampling objectives are not the same and must be addressed.

1b(iv). The minimum frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate, up to date, and representative of the waste over time.

EPA Comment: Table D.2 specifies most sampling frequencies. For some characteristic and listed waste codes, "NA" is listed for sampling method, analytical method, and frequency. Please explain what is meant by the "NA."

Most of the waste codes specify the following for frequency in Table D.2: "Every tank when waste code has been identified as applicable and property/constituent is subject to treatment." Please explain how a hazardous waste code needs to be "identified as applicable" when it already appears in the row of a hazardous waste code in Table D.2.

EQD Response: 40 CFR 264.13(b) and (c) require facilities to describes the procedures which will be used in to obtain a chemical and physical waste analysis of the waste to obtain information which must be known to treat, store, or dispose of the waste in accordance with this part and part 268 of this chapter.

Section A2.A details the facilities robust pre-approval process that includes obtaining detailed information from the generator which is required by 40 CFR 261.2 to make an accurate determination as to whether its waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations and includes the frequency the initial analysis is reviewed and repeated. The section also details the process by which EQD reviews the information to make an approval determination.

A2.B describes procedures utilized to inspect and if necessary, sample and analyze the waste to confirm consistency with the pre-approval information including the frequency of inspection, sampling and

analysis and the methods in which the waste is sampled and analyzed. Table B.2 includes test methods utilized and the rationale and the frequency of testing.

A2.C describes precautions taken to prevent accidental ignition or reaction of ignitable or reactive waste.

A2.D provides a detailed description on land disposal restriction requirements found in 40 CFR 268.40.

EPA Comment: See EPA's responses above.

A2.A.1(a)–Acceptable Waste Type Description

9. Paragraph 2: The word "decharacterized" should be replaced with "treated to remove the hazardous characteristic(s)." This section must specifically mention underlying hazardous constituents (UHC).

EQD Response: This change was made; however, this is not a technical deficiency.

EPA Comment: Complete.

10. Paragraph 3: Please clarify that for any waste stream for which a delisting determination is desired, prior authorization is required for the specific waste stream and/or treatment process, and that the procedures detailed in 40 CFR 260.22 must be followed. Additionally, please note that LDRs may have attached to wastes subsequently delisted via treatment. If the treatment that results in delisting occurs after the waste was generated, the treatment residue must still meet LDR standards even though it is no longer hazardous.

EQD Response: Clarification has been added. In general, the generator applies for a delisting as defined in 40 CFR 260.22. If the generator is approved for a specific delisting, then this delisting applies at MDWTP as well. Furthermore, the use of 40 CFR 260.22 is not always a requirement.

EPA Comment: USE-DS response above is confusing. Please clarify response.

11. Paragraph 5: Provide specifics describing debris. This should be explained, and reference provided to other parts of the WAP addressing debris.

EQD Response: Clarification has been added. Debris can be treated with any technology listed in Table 1 of 40 CFR 268.45. The facility treatment technologies are limited to immobilization, but this does not preclude the facility from accepting waste treated by other technologies identified in the table.

EPA Comment: USE-DS does not describe specific debris but leaves it general to allow any debris that can be treated at their facility using immobilization. Provide specifics.

22. Under "LDR", please revise to require generators to explicitly identify all UHCs present or reasonably expected to be present in the waste stream.

EQD Response: This has been addressed.

EPA Comment: Complete.

A2.A.3(a)–On-Site Generated Waste

29. How will variability be determined and documented? Also, when highly variable waste streams are identified, please specify that their evaluations "will" be more frequent, not that they "may" be more frequent. How will these frequencies be determined?

EQD Response: The language used for this section has been changed.

EPA Comment: USE-DS's definition of variability is essentially the concept of "similar wastes" as it pertains to LDR impermissible dilution and waste aggregation. First, large differences in concentrations of the waste constituents could certainly impact treatment performance and would not be identified by USE-DS's approach. Second, the approach assumes that wastes with the same waste code and constituents are automatically "consistent" across other generators or sources. Under USE-DS's proposed approach, for example, a contaminated clayey soil could be deemed "consistent" with an oily filter cake that has the same waste code and contaminant potentially resulting in ineffective treatment. Assessing variability includes identifying waste constituents, constituent concentrations, waste matrix, and other parameters that may be critical to successful treatment such as pH, redox potential, and oil & grease content, among others. The WAP should describe real criterion for variability such as the examples given here.

A2.A.4 – Pre-Approval Land Disposal Restrictions (LDR) Evaluation

46. This section implies that deviations from SW-846 will not occur, in contrast to previous sections and the referenced Table A.3. Please clarify.

EQD Response: The reference to SW-846 has been removed. Table A.3 references it, in addition to alternative methods.

EPA Comment: Reference to SW-846 is removed. Although this section now refers to Table D.2 and not Table A.3 as stated in USE-DS response. This is not an adequate response.

47. Paragraph 1: The last sentence appears to be missing part of the sentence.

EQD Response: This has been corrected.

EPA Comment: Complete.

48. Paragraph 2: While generators are supposed to make UHC determinations, USE-DS should actively confirm generators have done so by requiring appropriate documentation under the pre-approval waste characterization requirements (Section A2.A.2).

EQD Response: A2.A.2 states, "EQD will require the following waste profile information for initial waste shipments from all off-site generators and onsite generated waste prior to processing the waste." Note that 40 CFR 268.7(a)(1) Generators must determine whether their waste is subject to the LDRs for each hazardous waste at the point of generation, including underlying hazardous constituents that are present or reasonably expected to be present in the waste stream and subject to treatment.

EPA Comment: USE-DS should add the statement from A2.A.4 last paragraph beginning with "In the event the generator notification (required by 268.7(a)(2)). . . " to the LDR section of the list of required information in section A2.A.2.

USE-DS should also include testing for all underlying hazardous constituents (any constituent listed in 40 CFR 268.48, Table UTS – Universal Treatment Standards, except fluoride, selenium, sulfides, vanadium, and zinc in such waste) in both the LDR section of the list of required information in section A2.A.2 and in the fourth paragraph of section A2.A.4.

A2.A.4(a) – Dilution and Aggregation of Wastes

49. Paragraph 1: Please clarify the intent of Sentence 2. Dilution of characteristically hazardous non-wastewaters is not allowed under the LDR regulations, except as incidental from the addition of reagents or from appropriate aggregation. Any impermissible dilution constitutes noncompliance and must be reported as such. Please clarify what is being proposed as standards for "proper treatment" of impermissibly diluted wastes and what is being proposed to be done with the waste afterwards.

EQD Response: As stated by US Ecology treatment will occur. Therefore, at the time of land disposal the waste will meet land disposal restrictions.

EPA Comment: Please write this section in active voice to clearly indicate who is taking what actions. Please explain what procedures the facility will take when the facility gains knowledge of impermissible dilution by generators, transporters, handlers, or owner or operators of treatment, storage, or disposal facilities. Please add provision that instances of impermissible dilution must be reported to MI-EGLE, not just recorded in the profile record.

50. Please clarify why was the language in the template omitted, regarding prohibition of partial treatment of listed wastes to change treatability category and/or to comply with different treatment standards.

EQD Response: Template language has been added. It should be noted language regarding treatment residue dilution is included in section A2.D2(g).

EPA Comment: The reference to template and specific missing language might be a MI-EGLE-specific comment. MI-EGLE should check this.

51. Please clarify the recordkeeping and reporting that will pertain to dilution and aggregation of wastes either from USE-DS or the generator.

EQD Response: Clarification has been added.

EPA Comment: USE-DS states "Information will be documented in the generator approval file." The facility's response needs to be detailed. Please see EPA response to #49.

A2.B.1(b) – Sampling Methods and Frequency

67 through 84:

EPA Comment: EPA agrees with MI-EGLE's comments for this subsection and adds that identifying variability (heterogeneity) in incoming wastestreams is an important factor is justifications for LDR verification sampling strategies. EPA recommends that USE-DS further clarify their fingerprint sampling objectives to include assessing homogeneity by describing the specific visual differences used in their visual screening.

The end of paragraph 9 seems to allow the sampler to disregard all the sampling requirements at their discretion. This should be removed.

EPA recommends that each sample collected from each incoming shipment of a single approval-number wastestream should be subjected to both Level 1 and Level 2 screening, not just the first shipment or only those that fail the visual assessment. Furthermore, EPA recommends that samples from individual containers for Level 2 analysis not be composited so that important non-visual discrepancies within a shipment be identified. These changes should be in section A2.B.1(c) of the WAP and Table B.2.

A2.D.1 – Treatment for Purposes of Land Disposal

119. Paragraph 1: Remove "as identified by generator." UHCs that are found by USE-DS that are not added or created by the treatment process but are reasonably expected to have been present at the waste's point of origin still need to be treated to LDR standards regardless of who identified them.

EQD Response: This has been removed.

EPA Comment: USE-DS's response is incorrect. The language was not removed. This was addressed but not by removing "as identified by generator" as USE-DS responded. The following sentence was added to the end of Paragraph 1: "UHCs reasonably anticipated to be present at the point of generation that were not identified by the generator but are independently identified by USE-DS will be managed as a discrepancy as described in A2.B.2 and will be treated to applicable LDR standards." Please replace ". . . reasonably anticipated to be present at the point of generation that were not identified by the generator but . . ." with "not associated with appropriate treatment reagents and . . .".

120. Paragraph 1: Please clarify how USE-DS will track and report UHCs that were missed by the generator but found by USE-DS. Even if the non-compliance is not submitted to the MMD, there should be a system in place to report back to the generator, so they know what to look for in the future.

EQD Response: Language has been added to address this.

EPA Comment: Add similar language as comment #110.

121. Paragraph 1: Attachment C4 Treatment is referenced here but was not included as part of the proposed WAP for USE-DS. Please clarify.

EQD Response: This reference has been removed.

EPA Comment: Complete.

122. Paragraph 1: "EQD will test the waste according to the specification of this plan and such testing will be performed by the methods identified in Table A.3". Does this section intend to refer to Table D.2? Please clarify what sampling and analysis will be performed.

EQD Response: No, it should not refer to Table D.2. If we choose to accept a generator LDR statement, then it is puts the LDR determination on the treatment facility and we will sample and analyze the waste like onsite generated waste. This is done utilizing procedures in Table A.2 and A.3.

EPA Comment: In this instance, wherein the generator defers the LDR determination to the treatment facility, USE-DS proposes to use Table A.3 "Pre-Approval/Waste Characterization Analysis Procedures" to make the LDR (and UHCs if applicable) determinations. Note that USE-DS is not the generator and cannot be expected to have the depth of knowledge necessary to make the LDR determination based on generator knowledge. Therefore, while USE-DS must evaluate the incoming waste in accordance with A2.A, A2.B, and A2.C of the WAP, USE-DS must determine LDRs and UHCs, if applicable, using Table D.2 which includes specifics for LDR parameters, concentrations, test methods for each waste code which Tables A.2 and A.3 do not have. See 40 CFR 268.7(a) and (b).

123. **Table D.1**

a. In the row for "Oxidizer," please separate out oxidizer waste that is non-ignitable and ignitable.

EQD Response: A reference to D001 was added to clarify.

EPA Comment: Adding a reference to D001 for oxidizers did not clarify the WAP. USE-DS added two additional treatment technologies for D001 oxidizers in Table D.1. However, Appendix VI to 40 CFR Part 268, Recommended Technologies to Achieve Deactivation of Characteristics in Section 268.42, does not recommend Stabilization or Neutralization for D001 oxidizers. Please explain why these technologies for D001 oxidizers were added.

b. Please clarify when stabilization is not used when treating oxidizer wastes.

EQD Response: Per 9/30 discussion, EPA stated we just needed to state ignitable waste recommended treatment was not intended of oxidizers. EQD does not treat ignitable wastes.

EPA Comment: The response is not clear because it states USE-DS does not treat ignitable wastes, yet ignitable oxidizers are included in Tables D.1. and D.2. Please clarify exactly how D001 oxidizers will be treated or that they will not be treated.

124. Paragraph 2: Please clarify that any new generation processes occurring during treatment will trigger additional evaluation of UHCs. This would include changes in treatability groups (such as a non-wastewater filter cake derived from a characteristic hazardous wastewater). Additionally, please describe how USE-DS will detect new hazardous characteristics in treatment residues.

EQD Response: Identification of UHCs in waste is managed as a discrepancy. Reference to A2.B.2 procedures has been provided.

EPA Comment: This was not addressed.

A2.D.2 – Land Disposal Restrictions

125. Bullet 1: "All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste ("total waste standards")". Please note that this requirement is to ensure that hazardous constituents are below these values in all portions of the waste.

EQD Response: This is directly from 40 CFR 268.40(a)(1) and (2).

EPA Comment: Please replace "for that waste" with "for all portions of the waste" at the end of bullet 1 (as described in 63 FR 28567).

126. Paragraph 2: The second sentence is incomplete. Please revise to clarify.

EQD Response: Wording added at the end of the sentence.

EPA Comment: Complete.

A2.D.2(a) Characteristic Wastes

127. Paragraph 1: "Waste codes" should be replaced with "wastes", in the third sentence.

EQD Response: This is complete.

EPA Comment: Notwithstanding USE-DS's response, this change was not completed. Please make the requested change.

128. Paragraph 1: Please use consistent, clear language. For example, "appropriate demonstration" here appears to be referring to post-treatment LDR verification sampling and analysis.

EQD Response: This language has been changed.

EPA Comment: Complete.

129. Paragraph 1: In the last sentence, please revise to specify that "…all portions of the waste has met applicable LDRs and has been appropriately treated to remove hazardous characteristics…". Additionally, no on-site disposal is allowed at the USE-DS site.

EQD Response: Reference to 40 CFR 268.40(b) which states, "For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered by the waste extract standards, the test Method 1311, the Toxicity Characteristic Leaching Procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in § 260.11, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: Method 1311, or Method 1310B, the Extraction Procedure Toxicity Test. For wastes covered by a technology standard, the wastes may be land disposed after being treated using that specified technology or an equivalent treatment technology approved by the Administrator under the procedures set forth in § 268.42(b)," has been added.

EPA Comment: The first sentence of the comment was not addressed. The second sentence of the comment is addressed by clarifying that disposal is off-site.

130. Paragraph 1: All testing that is performed to ensure LDR compliance needs to be kept in the operating record.

EQD Response: The recordkeeping requirements are specified in A2.F.3.

EPA Comment: Complete.

133. Paragraph 2: Please clarify what is being claimed in this paragraph. All applicable treatment standards must be met for all waste codes associated with a given waste stream.

EQD Response: The language provided is consistent with 40 CFR 268.9(b) requirements. The language does not circumvent applicable treatment standards.

EPA Comment: Please repeat the second paragraph of A2.D.2(a) in A2.D.2(b).

A.2.D.2(e) – Contaminated Debris

136. Paragraphs 3 and 4: Please clarify what treatment technologies are proposed to be utilized for hazardous debris. Paragraph 4 appears to indicate that only immobilization will be used at the site, whereas paragraph 3 also includes extraction and destruction.

EQD Response: The applicable treatment method will be utilized based on the regulatory reference.

EPA Comment: Details of the specific hazardous waste debris technologies employed by USE-DS should be described with specifications in the Part B application, if not in the WAP. Note that the performance standard in 268.45 also requires that the encapsulating material be resistant to degradation by the debris itself and other materials into which it may come into contact after placement.

A2.D.2(f) – Soil

137. Paragraph 2: Please clarify what is being claimed in the last sentence, regarding PCB treatment.

EQD Response: This language is consistent with 40 CFR 268.48(d) which states, "PCBs are not constituent subject to treatment in any given volume of soil which exhibits the toxicity characteristic solely because of the presence of metals."

EPA Comment: Please address these additional Comments on A2.D.2(f) for added text:

There is new text regarding analyzable and non-analyzable constituents that was not on the previously reviewed WAP version. This new text is unclear and needs to be explained.

Also, there is new text addressing the alternative LDR standards for soils that is inadequate. Please see similar comments to the MDWTP/WDI WAP on the same topic and consult EPA guidance, Guidance on Demonstrating Compliance With the Land Disposal Restrictions (LDR) Alternative Soil Treatment Standards, Final Guidance, OSWER, EPA530-R-02-003, July 2002.

A2.D.2(g) - Dilution and Aggregation of Wastes

138. If USE-DS is to treat wastes with different treatment categories in the same batch, please detail how USE-DS will demonstrate impermissible dilution does not occur. For example, if organic wastes were first treated with oxidization, how will the efficacy of this treatment step be demonstrated prior to the introduction of metalbearing wastes and subsequent stabilization?

EQD Response: EPA rejected a proposal that would have required the quantification of the extent of treatment in the case of aggregated waste streams. 55 Fed. Reg. at 22665-666. EPA recognized that such a requirement would be unreliable and unworkable, stating:

"The Agency's proposal to require reduction of a BDAT constituent as a means of evaluating if impermissible dilution has occurred did not indicate how much reduction would be deemed adequate, and thus without further elaboration not only fails to provide clear guidance but also potentially fails to achieve the objective of assuring that wastes are treated by an appropriate treatment method. More importantly, quantifying the extent of removal necessary to be considered legitimate treatment leads to a very complicated system given the number of prohibited wastes, treatability groups, treatment methods and treatment train configurations." 55 Fed. Reg. at 22665

As described in A2.D.2(g) if the wastes are all amenable to the same type of treatment to be performed, the facility can combine wastes to perform the acceptable treatment. Aggregation for centralized waste treatment may result in dilution which occurs in conjunction with adequate treatment. Incidental dilution may also occur when reagents are added to the waste to perform treatment. This too is considered dilution inherent to an effective treatment process as so long as the reagents are capable of effectively treating the constituents subject to treatment. For example, batches that require both oxidation and stabilization must have reagents that will oxidize and stabilize the constituents subject to treatment.

EPA Comment: USE-DS does not address EPA's comment and the response is unacceptable. The cited preamble language did not conclude that "such a requirement would be unreliable and unworkable." The preamble actually states that "without *further elaboration* [emphasis added]" evaluating legitimate treatment by quantifying contaminant removal may be complicated and attempts to do so may fail "to achieve the objective of assuring that wastes are treated by an appropriate method." However, the Agency *has elaborated* on the type of aggregation USE-DS proposes in other publications both prior to and after the cited preamble regarding meeting the BDAT without impermissible dilution.

In the LDR Third Third Proposed Rule preamble, EPA discusses situations similar to USE-DS's. Specifically,

> ". . . echoing Congress' concern in indicating that dilution to avoid proper treatment was impermissible (H.R. Rep. No. 198, Part 1, 98th Cong., 1st Sess. 38 (1983)), is that individual prohibited wastes not be mixed with larger volumes of other wastes (whether prohibited or not) to meet treatment standards without undergoing treatment that substantially reduces the prohibited wastes' toxicity or mobility" (54 FR 84494).

From a May 23, 1994 policy memo:

> "Chemical Waste Management v. EPA, 976 F.2d 2, 16, 17, 19-20 (D.C. Cir. 1992), cert. denied 113 S.Ct. 1961 (1993); see also S. Rep. No. 298, 98th Cong. 1st Sess. 17 (1983) ("the

> dilution of wastes by the addition of other hazardous waste or any other materials during waste handling, transportation, treatment or storage is not an acceptable method of treatment to reduce the concentration of hazardous constituents")" (RO 13673).

If the facility mixes a waste containing both metals and organics with other wastes (such as those with metals but not organics), this may be impermissible dilution if there is not verification of effective organic constituent treatment (meeting the standard) before further aggregation.

In the LDR Third Third Proposed Rule EPA goes on to state:

> "Consequently, it appears to the Agency that any dilution that fails to meet the standard in § 3004(m) of substantially reducing the prohibited waste's toxicity or mobility is impermissible. To achieve this objective, the Agency believes that there must be some actual reduction in the toxicity or mobility of at least one BDAT constituent in each prohibited waste that is treated, to the extent that these constituents are present in initial concentrations that exceed the treatment standard for that prohibited waste. Further, with respect to Organic constituents, "reduction in toxicity" means actual removal of or chemical change to the constituent" (54 FR 48494).

EPA determines it is appropriate to seek verification of removal or chemical change in organic constituents, at least to the extent the treated waste should meet the organic LDR treatment standards.

EPA's same preamble continues to discuss another situation similar to USE-DS's:

> "Of course, even where one BDAT constituent is treated to reduce its toxicity or mobility, impermissible dilution might occur. For example, a waste with treatable concentrations of metals as well as extremely high concentrations of hazardous organics could be mixed with large volumes of other metal-bearing wastes for metals treatment. To the extent that the high concentrations of organics are diluted by this treatment to below treatable levels, this would constitute impermissible dilution if there is an appropriate organics treatment technology that could be applied prior to metals treatment. In this example, there is an actual reduction in the toxicity or mobility of one BDAT constituent, but dilution to avoid treating organics" (54 FR 48495).

While EPA agrees that USE-DS is first applying organic constituent treatment, as required, there is no provision in the WAP for verification data indicating effective organic treatment other than subsequent dilution by the addition of large quantities of metals-only waste after the organic treatment step.

A2.D.3 - Post-Treatment Sampling and Analysis

139. Paragraph 1: At the end of the first sentence, insert "…in all portions of the waste."

EQD Response: This is complete.

EPA Comment: Addressed incorrectly by removing the sentence that this comment refers to. Alternatively, the text "… in all portions of the waste" should have been added to the end of new bullets 1 and 2 at the beginning of this section.

140. Paragraph 2: In the first sentence, insert "all portions."

EQD Response: Clarity regarding the regulatory requirements specified in 40 CFR 268 has been added.

EPA Comment: This is not addressed. Note that a new Paragraph 2 was added and the previous Paragraph 2 is now Paragraph 3.

141. Paragraph 2: Single grab samples compared to the universal treatment standards (UTS) concentration values are insufficient to ensure treatment residuals meet LDR requirements for large treatment batches, without detailed demonstrations of batch homogeneity, waste stream variability, and treatment process variability.

EQD Response: As noted in the cover letter to this submittal, due to the complexity of this issue and US EPA's and EGLE's apparent departure from past practices, USE cannot respond to this comment until we have had further discussions with all parties involved. USE therefore requests that this issue be separated from EGLE's other comments, and USE will respond separately. USE is confident that an acceptable compromise can be reached on this matter. Although USE remains committed to reaching an acceptable compromise, the following presents our position on this matter. As was outlined in EPA's WAP Guidance (excerpted below), MDWTP documents compliance with concentration based LDR standards using a single grab sample prior to land disposal because it "ensures conformity with the LDR program goals." While the EPA Guidance highlights the fact that a single grab sample approach does make EPA's enforcement of the treatment standards easier, it also acknowledges that the process for establishing the treatment standards accounted for the use of a single random grab sample as the proposed method for determining LDR compliance as well. Considering EPA's published guidance on this issue, MDWTP is confused by EGLE/EPA's claim that the facility's proposed WAP "continues to call for, without justification, the collection, and analysis of only one grab sample..." to demonstrate compliance with LDR treatment standards. The EPA Guidance goes on to say that "a facility may choose to employ alternate sampling methods" but that both enforcement and compliance with the LDR treatment standards are based on a single grab sample. MDWTP has simply chosen to align its LDR compliance sampling practices with the approach envisioned when the treatment standards were established as well as the approach outlined in the EPA's most recent published nationally published guidance on this issue, rather than choosing to employ an alternate sampling method. It should be noted that this method of demonstrating compliance with LDRs has been in place and approved by EGLE for over 20-years now and is in line with the standard approach used by TSDFs throughout the country.

MDWTP has repeatedly stated it performs a robust, well designed mixing procedure on all waste batches, as described in detail in C4 Treatment. This robust mixing procedure ensures that waste and

treatment reagents are uniformly distributed throughout each batch. Although the individual waste streams in some batches may start out as variable, the ultimate treatment residue is uniform.

The fact that a robust, well designed mixing procedure achieves a uniform treatment residue, and that a uniform treatment residue is adequately represented by a single grab sample has been demonstrated at US Ecology's facilities. For example, in 2018 EPA collected multiple grab samples from a treated batch of waste at a US Ecology facility in Detroit, Michigan, which has similar operations to MDWTP. The concentrations in all grab samples were uniform and met applicable LDRs. Also, in 2017, EGLE collected multiple grab samples of MDWTP treatment residue and found the same outcome – uniform, passing concentrations, demonstrating that MDWTP's robust, well designed mixing procedure achieves a uniform treatment residue that is adequately represented by a single grab sample.

As stated in the cover letter accompanying today's submission, given the complex nature of the regulatory issues being discussed, a final deadline at this time is not in the best interest of any of the parties. USE does not believe separating this issue from the remainder of the application will result in any delay in issuing a permit decision. As we move forward with US EPA, USE is requesting EGLE staff proceed with the technical review of the rest of the permit applications, including the Waste Analysis Plan revisions contained in today's submittal. USE is confident that an acceptable compromise can be reached on this matter, but given both the known and unknown implications, USE feels strongly that granting additional time to resolve these complex issues is the most prudent decision at this point in time.

EPA Comment: USE-DS's response is unacceptable. MI-EGLE and EPA have communicated this issue to USE-DS in person and in writing numerous times since at least 2014. USE-DS's excerpted quote from the 2015 WAP Guidance is taken out of context and ignores clear guidelines discussed earlier in the document. USE-DS should not be confused by EPA's comment since we've had multiple meetings and correspondence. USE-DS is misaligned with the approach EPA used to establish the treatment standards. EPA understands USE-DS has been misaligned for 20 years, however, MI-EGLE and EPA have relayed this to USE-DS for at least 8 of those years. USE-DS's response here refers to the permit application and review for their facility in Belleville, MDWTP, and not the application and WAP under review for USE-DS. USE-DS's C4 Treatment does not describe the specific mixing procedures, minimum mixing times, or demonstrations of adequate mixing; only that it will be "thorough." Note that USE-DS's treatment batches can be as large as 500 cubic yards or the equivalent of over 1,800 55-gallon drums in one batch. While it is encouraging that these two batches passed the LDR, the 2017 and 2018 sampling events included no information on the relative variability or concentrations of LDR constituents prior to treatment. The wastes treated could well have all been similar to each other and/or relatively low in actual initial concentration.

142. Please clarify that USE-DS will keep records of all failed LDR testing, specifying how this documentation will be maintained.

EQD Response: Requested information has been added.

EPA Comment: Complete.

A2.F.3 – Record Keeping

144. Please clarify what information will be included under "TSD facility certifications and demonstration".

EQD Response: This is referring to the certification requirements identified in 40 CFR 268.7 which is already referenced in this sentence.

EPA Comment: We believe this is a MI-EGLE comment.

TABLE D.2

147. Additional clarification as to how Table D.2 will be implemented within the framework of the WAP is needed. Please see comments 148 and 149, below.

EPA Comment: See responses to numbers 148 and 149 below.

148. Please clarify what is meant by wastewater table rows included for listed wastes. It appears the treatment standard for non-wastewaters are applied to the rows described as wastewater, so the intent behind including listed wastewaters is unclear. Please describe under what scenarios the wastewater land disposal treatment standards would apply to waste codes treated at USE-DS. It is strongly recommended that the table be limited to only those waste codes and treatment scenarios licensed for treatment at USE-DS.

EQD Response: This has been removed.

EPA Comment: Mi-EGLE should confirm this means the facility will not treat or dispose of wastewater.

149. Additional clarification is needed regarding how the sampling methods prescribed in Table D.2 will be used with regard to waste characterization and LDR verification.

a. The sampling method column states a scoop, trowel, or trier will be used to collect samples for all waste types. This sampling equipment would be inappropriate for some wastes, such as liquid wastes and heterogeneous solid wastes.

EQD Response: Sampling methods for generated waste are described in section A2.A.3(a) and Appendix E provides sampling procedures.

EPA Comment: The appendix for sampling procedures is labeled "D" in the latest version of the WAP, not "E."

Table D.2 should address three items for nonwastewaters, LDR verification for treatment residuals, hazardous waste decharacterization of treatment residuals, and LDR characterization for incoming wastes that were not characterized for LDR by the generator. Please update Table D.2 to include this description. If LDR characterization is needed for wastewaters (when not determined by the generator) please add to the WAP the procedures that will provide for the full LDR characterization of the wastewaters including specification of the necessary parameters, rationale, test methods, sampling methods, and frequency. If the facility will not receive wastewaters for either treatment or consolidation, this should be stated in the WAP.

In Table D.2 all sampling methods say that a scoop, trowel, or trier will be used to collect the sample. Appendix D which contains the WAP sampling procedures lists "auger" twice but does not list "trowel" which is one of sampling methods that they say they are going to use. Please add "trowel" to Appendix D under "Sampling Equipment Use."

Appendix D does not describe representative sampling approaches needed for hazardous waste characterization versus grab sampling approaches needed for LDR characterization and verification. Table D.2 should identify the number and type (random grab or composite) of samples needed for each waste code and Appendix D should provide the detailed methods for all sampling objectives, including random grab sample(s) for LDR verification and representative sampling for hazardous waste characterization.

b. A single grab sample may be insufficient to properly characterize a waste stream for the purpose of pre-approval profiling, especially for higher variability waste streams.

EQD Response: Table D.2 describes post-treatment sampling requirements for purposes of LDR compliance. Additionally, A2.A.4 has been revised to reference it for purposes of characterization and LDR compliance of generated waste

EPA Comment: Please refer to the responses to comment #s 29, 141, and 149a. Further, A2.A.4 merely refers to Table D.2 in the instance of an off-site waste for which the generator has not made an LDR determination. The WAP states this determination will be made according to this plan. It is inappropriate to make the incoming LDR determination the same way USE-DS conducts LDR verification sampling (single grab) when there is no information as to how variable the waste is.

Also, please clarify whether on-site generated wastes include treatment residuals.

c. As previously discussed, the prescription of 1 grab sample per tank to ensure LDR compliance does not account for waste heterogeneity and does not demonstrate that all portions of the waste meet the standard. Reference to number of samples may not be appropriate within a revised table D.2.

EQD Response: Our response to Comment 126, above, is incorporated here by reference.

EPA Comment: This is not addressed. The response to 126 does not seem pertinent here. USE-DS must be referring to a different comment mistakenly identified as 126.

152. Please provide SOPs for all analytical methods cited in Table D.2 and reference the SOPs in Table D.2. The SOPs should also include any sample preparation methods (such as digestion or extraction methods). References to the SOPs can include wording to include updates to the SOP to allow USE-DS to make changes to SOP, as necessary.

EQD Response: Table has been revised.

EPA Comment: This is not addressed. It is not clear which analytical methods are performed in-house and which are performed at outside laboratories. All methods performed in-house at USE-DS that are referenced in Table D.2 must have USE-DS laboratory-specific SOPs. The WAP must indicate that any off-site analysis will be conducted using the methods specified in Table D2 sufficient to support the stated rationale including appropriate reporting limits. Please provide all analytical SOPs for those methods in Table D.2 that are performed in-house at USE-DS. Please incorporate the comments in the

October 28, 2021 email from Christine Matlock of MI-EGLE to Phil Tannian (and others) of US Ecology, regarding Analytical SOPs.

Table D.2 largely describes (with a few exceptions) the analytical method used to quantitate the analyte of interest. Correct sample preparation methods (digestion, extraction, cleanup) methods are critical in ensuring adequate preservation identification, quantitation, and recovery of analytes of interest from waste matrices.

EPA does not know if this is USE-DS's response or MI-EGLE's comment. EPA did not doublecheck the table for appropriate analytical/preparation methods.

153. Dioxin/furan-containing waste codes (F020-F023, F026-F028, K043 and K099) are only approved for storage at the facility before being trans-shipped off-site to an authorized facility. This must be made clear both in the narrative section of the WAP as well as within Table D.2. Currently, Table D.2 appears to indicate that these waste codes may be accepted for treatment at USE-DS so long as the treatment process is not to address dioxin and furan UHC concentrations above the UTS.

EQD Response: Table has been revised

EPA Comment: Complete.

154. Please revise Table D.2 to include omitted constituents from waste listings. For example, Nickel was omitted from listed waste K172.

EQD Response: Table has been revised.

EPA Comment: Complete.

155. In Table D.2, several analytical methods were proposed for analytes which are not included in the scope and application of the standard method. Please confirm if these analytical methods are proposed for the analysis, and if so, please provide documentation of method performance for the waste matrices is satisfactory for the purposes of waste characterization and LDR verification. Please note that discrepancies were identified at additional waste codes aside from the examples listed below.

EQD Response: Table has been revised.

EPA Comment: Complete.

a. N-butyl and Isobutyl Alcohol (such as under F001-005) are proposed to be analyzed using SW-846 8015.

EQD Response: Table has been revised

EPA Comment: Complete.

b. Isosafrole (such as under F039) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

c. Kepone (such as under F039) is proposed to be analyzed using SW-846 8081. This method is not recommended for determining Kepone. Method 8270 may be more appropriate for the analysis of Kepone.

EQD Response: Table has been revised.

EPA Comment: Complete.

d. Phorate (such as under F039, K038, and P089) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

e. Pentachloroethane (such as under K018 and K095) is proposed to be analyzed using SW-846 8270.

EQD Response: Table has been revised.

EPA Comment: Complete.

f. Hexachloropropene (such as under K030) is proposed to be analyzed using SW-846 8260.

EQD Response: Table has been revised.

EPA Comment: Complete.

g. Pentachlorobenzene (such as under K030, K149, and U184) is proposed to be analyzed using SW-846 8260.

EQD Response: Table has been revised.

EPA Comment: Complete.

h. Disulfoton (such as under K036) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

i. Hexachlorobenzene (such as under F025) is proposed to be analyzed using SW-846 8260.

EQD Response: Table has been revised.

EPA Comment: Complete.

j. Famphur (such as under P097) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

k. Parathion (such as F039) is proposed to be analyzed with SW 846 8081

EQD Response: Table has been revised.

EPA Comment: Complete.