FORM EQP 5111 ATTACHMENT A3
WASTE ANALYSIS PLAN

This document is an attachment to the Michigan Department of Natural Resources and Environment's Instructions for Completing Form EQP 5111, Hazardous Waste Treatment, Storage, and Disposal Facilities Construction Permit and Operating License Application Form.

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), being R 299.9504, R 299.9508, and R 299.9605, and Title 40 of the Code of Federal Regulations (CFR) §270.14(b)(3) and 264.13(b) and (c), establish requirements for Waste Analysis Plans (WAPs) for hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This license application attachment addresses requirements for a Waste Analysis Plan (WAP) for the hazardous waste management units and the hazardous waste management Facility for the Environmental Geo-Technologies, LLC ("EGT" or "Facility") Facility. All activities associated with the WAP are conducted at the Facility located at 28470 Citrin Drive, Romulus, Michigan.

This attachment is organized as follows:

A3.A COMMERCIAL FACILITY

EGT is a commercial hazardous waste treatment and storage that receives wastes generated from off site locations. EGT has developed this WAP to ensure that its Facility at 28470 Citrin Dr, Romulus, MI will accept only wastes that it is authorized to accept. The hazardous wastes managed at the Facility will be properly characterized prior to waste acceptance. All generators are required to provide a completed waste characterization, including chemical analysis when appropriate. Waste screening ("fingerprinting") is conducted by EGT on every shipment of waste to ensure that the waste conforms to the waste profile for the generator and information on incoming manifests and to ensure that the waste can be properly managed within the Facility.

In addition, EGT will also generate several hazardous wastes, including a solid filter cake waste, wash waters and laboratory samples. EGT has developed this WAP to ensure that these on-site generated wastes are also properly characterized.

All analyses performed pursuant to this application are consistent with the Facility's QA/QC Plan. All samples for the purpose of waste characterization are collected, transported, stored, and disposed of by trained and qualified individuals in accordance with the QA/QC Plan. The forms within this WAP, its attachments and references are typical of the forms used by the Facility. These forms may change to equivalent or alternate forms as regulations, customer needs, operations, or company policy dictate. The Facility will handle form changes in accordance with the requirements of R 299.9519 as appropriate.

In accordance with R 299.9609 and 40 CFR §264.73 and Part 264, Appendix I, the Facility retains all records and results of all waste determinations (whether "inbound" or

"outbound") performed as specified in 40 CFR §264.13, 264.17, 264.314, 264.1034, 264.1063, 264.1083, 268.4(a), and 268.7 in the Facility operating record until closure of the Facility.

A3.A.1 INITIAL WASTE CHARACTERIZATION REQUIREMENTS FOR GENERATORS

[R 299.9605(1) and R 299.9504(1) (c) and 40 CFR §264.13(b) (5)]

Prior to accepting a waste stream at the Facility, EGT will characterize the waste stream in accordance with this WAP. The Facility requires the waste profile information for initial waste shipments from all off-site generators prior to shipment as indicated on the Waste Profile Sheet ("WPS"), attached as Appendix A3.A.1. In addition to the WPS information submitted by the generator, the EGT Facility:

☒ Requires submittal of a representative waste sample

☐ Conduct an audit of the generator facility

☐ Review industry literature to identify typical waste streams

☐ Other:

In lieu of a representative sample, EGT can rely on analytical information provided by the generator.

The Facility (or contract) laboratory will analyze the generator-supplied representative waste sample using Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) or equivalent methods as approved by the DNRE. The analytical results, together with the information contained in the WPS and any additional available analytical data or Material Safety Data Sheets ("MSDS") on the waste stream, will be used to determine whether the waste stream will be accepted by the Facility.

A3.A.1(a) GENERATOR WASTE CHARACTERIZATION DISCREPANCIES

[R 299.9605(1) and R 299.9504(1) (c) and 40 CFR §264.13(a) (3) and (4), 264.13(b) (c), and 264.72]

Each incoming waste shipment is screened in accordance with this WAP to ensure that the waste shipment is consistent with the waste stream that has been approved for management at the Facility in accordance with Section A3.A.1, above. If any significant discrepancies are identified suggesting that the waste shipment is not the pre-approved waste stream, EGT will assure contact with the generator in order to resolve those discrepancies. EGT may require the generator to provide additional information concerning the waste shipment or the waste stream, including analytical data or additional representative samples. If EGT cannot resolve the discrepancy, EGT will reject the shipment, and may cancel the approval for the waste stream.

A3.A.1(b) SUBSEQUENT WASTE SHIPMENT PROCEDURES

[R 299.9605(1) and R 299.9504(1) (c) and 40 CFR 264.13(a) (3) and 264.13(b) (4)]

The initial analysis of each waste stream described in Section A.3.A1 will be reviewed or repeated annually to ensure that the analysis is accurate and up-to-date. In addition, the analysis will be repeated each time the generating process changes.

A3.A.1(c) ADDITIONAL WASTE ANALYSIS REQUIREMENTS

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(b)(6) and 264.13(c)(3)]

Facility personnel review the WPS information to ensure that the Facility is authorized to receive the waste, and can manage the waste in conformance with the following:

☒ R 299.9605 and 40 CFR §264.17	General requirements for ignitable, reactive, or incompatible wastes (not accepted at the EGT facility)
☒ R 299.9605 and 40 CFR §264.314	Special requirements for bulk and containerized liquids
☐ R 299.9630 and 40 CFR §264.1034(d)	Test methods and procedures (Subpart AA) [Attachment A3, Section A3.A.2(c)]
☐ R 299.9631 and 40 CFR §264.1063(d)	Test methods and procedures (Subpart BB) [Attachment A3, Section A3.A.2(c)]
☒ 40 CFR §264.1083	Waste determination procedures (Subpart CC) [Attachment A3, Section A3.A.2(c)]
☒ R 299.9627 and 40 CFR §268.7	Waste analysis and record keeping LDR requirements See Sections A3.A.3, A3.B.3
☐ R 299.9228	Universal waste requirements

A3.A.2 WASTE ACCEPTANCE PROCEDURES

[R 299.9605(1) and R 299.9504(1)(c), and 40 CFR §264.13(c), 264.72(a) and (b), and 264.73(b)]

Waste shipments arrive at the Facility in the following containers:

☒ Drums	☒ Totes	☒ Tanker trucks
☐ Carboys	☐ Wrangler box	☐ Filter bags

☐ Roll-off boxes ☒ Vacuum trucks ☒ Other: Railcars

Upon receipt of wastes from an off-site generator, EGT performs all of the following tasks prior to acceptance:

- Review paperwork (waste profile, manifest, etc)
- Visually inspect the waste
- Perform waste screening/fingerprint analysis of waste

These tasks are discussed below.

A3.A.2(a) REVIEW PAPERWORK

[R 299.9605(1) and R 299.9504(1)(c), and 40 CFR §264.13(c), 264.72(a) and (b), and 264.73(b)]

Facility personnel review all paperwork, including manifests and LDR notifications, before any wastes are accepted by the Facility. All paperwork is reviewed for completeness. In addition, the manifest and any LDR notification are compared for consistency. The manifest is then compared to the WPS and analytical information provided by the generator and to the waste shipment to ensure the accuracy of information provided on shipment paperwork. The manifest is also compared to the number of containers, the volume, and/or the weight of the waste in the shipment. All discrepancies are resolved before processing the waste. The information on the WPS is also reviewed to determine whether the waste is a Subpart CC waste, and if it is, the material is dedicated to RT-10.

A3.A.2(b) VISUAL INSPECTION OF WASTE

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(c)]

Facility personnel visually inspect a minimum of one container and up to a maximum of 100 percent of the containers for each waste stream from each generator. The contents of the container are visually inspected for the following:

☒ Color ☒ Consistency

☒ Physical state ☒ Other: Oil

☒ pH

Visual observations are recorded and compared to the WPS information. The pH is also measured. All discrepancies are resolved before processing the waste.

Waste shipments found to have a significant discrepancy (ies) or non-conformance(s) that cannot be corrected, will either be rejected and returned to the generator (or appropriate alternate facility) or re-evaluated for acceptance by the Facility or for trans-shipment to another licensed hazardous waste management facility.

This evaluation is based on the following criteria, as appropriate:

- Permits conditions, compliance history, and, current regulations;
- Discussions with the generator;
- Need for any additional supplemental analyses;
- Alternate facility's ability to handle the material in a safe and environmentally sound manner; and
- General Manager or Laboratory Manager's judgment.

In addition to the evaluation and pursuant to 40 CFR Part 264.72, EGT discusses and attempts to resolve with the generator, any discrepancies between the actual waste shipment and that shown on the manifest. If the load is found to be acceptable at the Facility, a waste shipment acceptance can be initiated.

A3.A.2(c) WASTE SCREENING/FINGERPRINTING

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(b)(14) and 264.13(c)(2)]

Table A3.A.1, below, lists the waste analysis procedures, including screening parameters for each hazardous waste, the rationale for the selection of these parameters, test methods that are used to test for these parameters, the appropriate reference, whether the waste is specified in R 299.9216, the frequency of waste screening, and the rationale for the frequency. The sampling methods that are used to obtain a representative sample of the waste to be analyzed and the sampling equipment and rationale are summarized in Table A3.A.2 and Table A3.A.3, respectively. The results of the waste screening/fingerprint analysis is compared to the WPS information and analytical results provided by the generator during the initial waste characterization process. All discrepancies are resolved before processing the waste.

An example of the form utilized to document the fingerprint analysis is attached as Appendix A3.A.2.

A3.A.2(c)(i) SHIPMENT ACCEPTANCE EVALUATION LOGIC

The decision whether to accept or reject a particular waste stream shipment is made by evaluating whether the as-shipped waste is in conformance or non-conformance with this WAP and the WPS. The waste shipment is classified as being in "non-conformance" if its composition is significantly different from the information shown on the WPS, the pre-acceptance results, the manifest, or, if it is significantly different in quantity (e.g., weight, volume, container count) from the information shown on the manifest.

Facility personnel use the following three primary criteria to determine the existence of a significant manifest discrepancy or non-conformance of the waste shipment:

- For bulk wastes, variations greater than 10% in weight;
- For batch wastes, (e.g., drums or any other DOT-approved container, etc.) any variation in piece count (such as discrepancy of one drum in a waste load); or,

- Obvious differences such as waste acid or toxic constituents not reported on the manifest or shipping document, determined by inspection or analysis of any waste shipment

Discrepancies or non-conformances that do not fall within these criteria are considered to be "minor." If Facility personnel have reason to believe that a minor discrepancy is not a one-time variation and that a particular waste shipment indeed is different from the pre-approved waste stream, the generator is required to repeat the pre-acceptance procedures prior to the waste stream being accepted. The detection of a waste constituent that was not recorded on the WPS or manifest would not necessarily trigger a repeat of pre-acceptance procedures for the waste stream (unless it met the preceding criteria) if the discrepancy can be justified by the generator.

A3.A.2(c)(ii) EVALUATION OF POTENTIAL ACCEPTANCE OF NON-CONFORMANCE

Waste shipments found to have a significant discrepancy (ies) or non-conformance(s) that cannot be corrected will either be rejected and returned to the generator (or appropriate alternate facility) or re-evaluated for acceptance by the Facility for transshipment to another licensed hazardous waste management facility.

This evaluation is based on the following criteria:

- EGT's license conditions, generator compliance history and current regulations;
- Discussions with the generator;
- Need for any additional supplemental analyses;
- Facility ability to handle the material in a safe and environmentally sound manner, and
- General Manager or Laboratory Manager Judgment.

In addition to the EGT Facility evaluation and pursuant to 40 CFR Part 264.72, EGT personnel will discuss and attempt to resolve with the generator, any discrepancies between the actual waste shipment and that shown on the manifest. If the load is found to be acceptable at the Facility, a waste shipment acceptance can be initiated.

A3.A.2(c)(iii) PCB ANALYSIS

EGT does not accept waste containing Toxic Substances Control Act (TSCA)-regulated PCBs. No waste streams will be accepted or off-loaded for treatment, storage or management at the Facility unless the pre-acceptance procedures in Section A3.A.1, above, are met and the generator submits to the Facility either the concentration or the absence of detection of PCBs in the waste stream. If the generator does not provide any PCB information for a waste stream, EGT will analyze a pre-acceptance sample for PCBs.

A3.A.2(c)(iv) SUPPLEMENTAL ANALYSES

EGT may perform supplemental analyses at the discretion of the Laboratory Manager or his/her designee during pre-acceptance testing or fingerprint testing of incoming shipments to further characterize the waste streams, or to ensure that the proper waste

management techniques are utilized. The decision to use one or more of these supplemental analyses will be based on knowledge of the waste and the technical expertise of the Laboratory Manager or his/her designee. The results of these discretionary analyses provide another level of confidence concerning the proper means of disposal. Some of these additional supplemental analyses utilize procedures and protocol developed by Facility personnel, in the absence of other standard procedures. Other analyses utilize standard analytical techniques recognized by the EPA, the American Society for Testing & Materials ("ASTM"), or similar techniques.

The applicability of these analyses, as described below, are based on procedures and protocol formulated for hazardous waste management with Underground Injection Control ("UIC") disposal.

- Timed Filtration Tests allow the Facility laboratory to quickly ascertain the filter loadings caused by suspended solids in the wastes and gain a rough approximation of potential filtering in the underground injection formation.
- Calcium Hydroxide - Ca $(OH)_2$. Testing is performed as a screen for potential formation compatibility problems because a minor reactive component of the injection formation at the EGT Facility consists of dolomite materials.
- Process Blend Testing is performed to identify other wastes with which the waste stream can be mixed to yield a UIC mixture. The testing is also performed to identify potential problems that could result in adding a waste stream or blend to existing tank contents. The testing can also be used to determine proper spacer fluids to be used during injection of otherwise incompatible wastes.
- pH Spectrum is used to determine the phase behavior of a waste stream over a wide pH change, and is uniquely applicable to UIC disposal wells.
- Heat Phase Separation is to determine phase behavior with respect to temperature fluctuation.
- Sulfate Screen is to determine presence of sulfates which can cause filter plugging and formation plugging.
- Radiation Screen is used to ensure that no radioactive materials above background are present in the waste stream.

Table A3.A.1 Waste Analysis Procedures

Screening Parameter (*Check as appropriate*)	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
☒ Waste Code(s)	Compare with Facility accepted waste codes	NA	40 CFR 261 R 299.217, 219, 220, 222, 224, 225	☐	All shipments and containers	Compliance with permits
☐ Free Liquids				☐		
☒ Ignitability/ Flashpoint	No D001 Accepted	1010A	SW-846	☒	All shipments and containers	Compliance with permits
☐ Reactivity				☐		NA – See below
☒ Compatibility	Check for compatibility	50/50 blend		☐	All shipments and containers	Compliance with permits, maintain operations
☐ Land Disposal Restrictions	Compliance with permits	NA	NA	☐		Note: Facility UIC wells are exempted from LDRs pursuant to No Migration Petition
☐ Volatile Organic Compound Content				☐		
☐ Radioactivity				☐		
☒ Other: PCB	Compliance with permits	8082A	SW-846	☒	Oily waste only	Generator certification required, PCB not typical in acid and caustic waste streams. Regulated PCB was not accepted at Facility.

Table A3.A.1 Waste Analysis Procedures

Screening Parameter (*Check as appropriate*)	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
☒ Other: pH	Compliance with permits & maintain operations	9041A and/or 9040C and/or 9045D	SW-846	☒	All shipments and containers	Compliance with permits
☒ Other: Physical Description	Maintain operations	Visual inspection	EGT	☐	All shipments and containers	Compliance with permits
☒ Other: Cyanide Screen	Compliance with permits & maintain operations	ITS484001*	EGT	☐	All shipments and containers	Compliance with permits
☒ Other: Sulfide Screen	Compliance with permits & maintain operations	ITS481197-1*	EGT	☐	All shipments and containers	Compliance with permits
☒ Other: Total Settable Solids	Maintain operations	EPA 160.2, 160.4	EPA	☐	All shipments and containers	Maintain operations
☒ Other: Oil	Maintain operations	EGT PLA29*	EGT	☐	All shipments and containers	Maintain operations
☐ Other: Solvent Screen				☐		
☒ Other: Specific Gravity	Compliance with UIC permits & maintain operations	2710 &/or D70/D891/D1217 /D1429	SW-846 &/or SMEWWW &/or ASTM	☐	All shipments and containers	Compliance with UIC permits

Table A3.A.1 Waste Analysis Procedures

Screening Parameter ***(Check as appropriate)***	**Rationale for Parameter**	**Test Method**	**Reference**	**Specified in R 299.9216 (Y/N)**	**Frequency**	**Rationale for Frequency**
☒ Other: Total suspended solids	Compliance with UIC permits & maintain operations	2540	SMEWWW & ASTM	☐	All shipments and containers	Compliance with UIC permits
☒ Other: Temperature	Compliance with UIC permits & maintain operations	2550	SMEWWW	☐	All shipments and containers	Compliance with UIC permits
☒ Other: Conductivity(aka Specific Conductivity)	Compliance with UIC permits & maintain operations	9050A/9100 &/or 2710 &/or D1125	SW-846 &/or SMEWWW &/or ASTM	☐	All shipments and containers	Compliance with UIC permits
☒ Other: Color	Compliance with UIC permits & maintain operations	Visual Observation &/or 202 &/or 2120	N/A &/or ASTM &/or SMEWWW	☐	All shipments and containers	Compliance with UIC permits
☒ Other: Barium	Compliance with UIC permits & maintain operations	6010B &/or 3500-Ba	SW-846 &/or SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits

Table A3.A.1 Waste Analysis Procedures

Screening Parameter (*Check as appropriate*)	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
☒ Other: Calcium	Compliance with UIC permits & maintain operations	6010B &/or 3500-Ca	SW-846 &/or SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Total Iron	Compliance with UIC permits & maintain operations	3500-Fe &/or 6010B	SMEWWW &/or SW-846	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Magnesium	Compliance with UIC permits & maintain operations	6010B &/lor 3500-Mg	SW-846 &/or SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Sodium Chloride	Compliance with UIC permits & maintain operations	9212/9250/9251/ 9253 &/or 4500-Cl	SW-846 &/or SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Bicarbonate	Compliance with UIC permits & maintain operations	2330	SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits

Table A3.A.1 Waste Analysis Procedures

Screening Parameter (*Check as appropriate*)	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
☒ Other: Carbonate	Compliance with UIC permits & maintain operations	2330	SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Sulfate	Compliance with UIC permits & maintain operations	9035/9036/9038 &/or 4500-SO4	SW-846 &/or SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Sulfide	Compliance with UIC permits & maintain operations	9215/9030A &/or 4500-S	SW-846 &/or SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Total Dissolved Solids	Compliance with UIC permits & maintain operations	2540	SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits
☒ Other: Resistivity	Compliance with UIC permits & maintain operations	9050A/9100 &/or 2510	SW-846 &/or SMEWWW	☐	All shipments and containers of **Oil Field Brine Only**	Compliance with UIC permits

* EGT internal test method maintained at the Facility.

Table A3.A.2 Sampling Procedures

Container Type Or Material	Sampling Method	Sampling Equipment	Rationale
Tanker Truck, Vacuum Trucks, Rail Tankers	COLIWASA (ASTM D5495-03 or equivalent)	COLIWASA	Test Method for the evaluation of solid waste, Physical/chemical methods - US EPA
Totes, Drums or Containers	COLIWASA (ASTM D5495-03 or equivalent)	COLIWASA	Test Method for the evaluation of solid waste, Physical/chemical methods - US EPA
Tank Sampling	Sample Port	Sample Port	Fingerprint, compatibility, treatment verification

As used in Tables A3.A.1 and A3.A.2, above:

ASTM = American Society for Testing and Materials

SMEWWW = "Standard Methods for the Examinatiion of Water and Wastewater", APHA (Greenberg, M.A.H.), AWWA (Eaton, A.D.), and WEF (Closceri, L.S.), 19th Edition, 1995

SW-846 = "Test Methods for Evaluating Solid Waste, Physical Chemical Methods", (aka SW-846), through Update IV, www.epa.gov

A3.A.2(d) WASTE RECEIPT SAMPLING PROCEDURES

Each incoming shipment of waste is sampled and analyzed in accordance with Tables A3.A.1 and A3.A.2, above, to ensure that it matches the overall description of the waste designated on the accompanying manifest and the WPS. Facility personnel document the inspection of and analysis of each hazardous waste shipment received at the Facility to determine whether it conforms to the information on the WPS and matches the description of the waste specified on the accompanying manifest, as required by 40 CFR 264.13.

A3.A.2(d)(i) CONTAINERIZED WASTES

Vehicles carrying containerized waste stream(s) are directed to the container handling area. Container loads are checked visually to confirm that labeling and packaging of the containers are consistent with data listed on the manifest. The integrity of each container is also inspected to insure that all openings are closed, and that there is no damage to the container that could compromise its integrity. Once Facility personnel have determined that the paperwork is representative of the as-received load, the load is dispatched for off-loading, segregation, and sampling.

At least 10 percent of the containers from each manifest line item (i.e., each separate waste stream) associated with a containerized waste shipment (e.g., drums, or other DOT-approved containers of waste) are selected for sampling. Containerized shipments are sampled according to the frequency established in the table below.

Table A3.A.3 Container Sampling

Number Of Containers In Shipment	Minimum Number of Separate Samples To Be Taken
1-5 Containers	1
6-10 Containers	2
11-25 Containers	4
26-30 Containers	6
31-80 Containers	8

The individual containers within a specific shipment (for each individual waste stream identified by line number on a manifest) are numbered. The specific individual containers to be sampled are then chosen by using a random number table. The samples are composited to provide a representative sample of each individual waste stream.

If the analysis of the representative sample of the waste stream matches the generator's waste profile description and the waste shipment is otherwise acceptable (i.e., no significant discrepancies), the shipment will be accepted and processed. If the analysis does not match the generator's waste profile description, EGT will either reconcile the discrepancy or reject the shipment.

A3.A.2(d)(ii) BULK SHIPMENTS

Each bulk (tanker or railcar) waste delivery is sampled in accordance with Table A3.A.2 and analyzed in accordance with Table A3.A.1. If the analysis of the representative sample of the waste stream matches the generator's waste profile description and the waste shipment is otherwise acceptable (i.e., no significant discrepancies), the shipment will be accepted and processed. If the analysis does not match the generator's waste profile description, EGT will either reconcile the discrepancy or reject the shipment.

A3.A.3 Procedures to Ensure Compliance with Land Disposal Restrictions ("LDR") Requirements

[R 299.9627 and 40 CFR, Part 268]

Although the Facility's UIC wells are exempt from the LDR requirements pursuant to the approved No Migration Petition (subject to the conditions contained in that exemption set forth at 69 Fed. Reg. 15341-42 (Mar. 25. 2004), including compliance with the maximum wellhead concentrations established in EGT's UIC permits for the constituents listed in Section A.3.D.2, below), shipments of wastes subject to LDR received at the Facility are accompanied by appropriate generator notification and LDR notification in accordance with R 299.9627 and 40 CFR §268.7. Any LDR notification accompanying generator wastes is reviewed, and any discrepancies in the LDR notification and the associated manifest, analytical records, or WPS requires shipment rejection unless additional, satisfactory, clarifying information is provided by the generator. All information obtained to document LDR compliance is maintained in the Facility operating record until closure of the Facility.

If the Facility receives a shipment of waste without LDR notification, or a notification with incorrect or incomplete information, EGT will assure contact with the generator in order to obtain the missing notification, or to correct or complete the notification. If the problem cannot be resolved, EGT will reject that waste.

In accordance with the LDR regulations, all wastes shipped off site are analyzed, or generator knowledge is used when appropriate, to determine whether the waste meets the applicable LDR treatment standards specified in R 299.9627 and 40 CFR §268.41-43. All analytical results are maintained in the Facility operating record until closure of the Facility. Wastes that are determined through analysis to meet treatment standards as specified in R 299.9627 and 40 CFR §268.41-43 can be disposed of in a hazardous waste management landfill.

EGT supplies LDR notifications and certifications, including appropriate analytical records to support the certification, to the receiving facility with each shipment of waste. The notifications and certifications contain the information required under R 299.9627 and 40 CFR §268.7. Any additional data obtained from the generators (e.g., WPSs, original LDR notifications, analysis provided by generators) is provided to any licensed TSDF where the waste (solids) have been sent.

A3.A.3(a) SPENT SOLVENT AND DIOXIN WASTES

[R 299.9627 and 40 CFR §264.13(a)(1), 268.7, 268.30, 268.31, 268.40, 268.41, 268.42, and 268.43]

Spent solvent wastes (F001-F005) are accepted at the Facility. Typically generator process knowledge is used to determine the presence of spent solvent wastes (F001-F005). Generator process knowledge is documented on the WPS and LDR notification. The LDR notification provides additional information regarding the appropriate treatment standards for the waste and whether it has already been treated to the appropriate standards.

A3.A.3(b) LISTED WASTES

[R 299.9627, R 299.9213, and R 299.9214 and 40 CFR §264.13(a)(1), 268.7, 268.33, 268.34, 268.35, 268.36, 268.39, 268.40, 268.41, 268.42, and 268.43]

Generator process knowledge is typically used to determine whether listed waste meets the applicable treatment standards or to demonstrate that the waste has been treated by the appropriate specified treatment technology. In accordance with R 299.9627 and 40 CFR §268.41, where treatment standards are based on concentrations in the waste extract, the Facility uses the Toxicity Characteristic Leaching Procedure (TCLP) to determine if wastes meet treatment standards as appropriate. Generator process knowledge is documented on the WPS and LDR notification.

A3.A.3(c) CHARACTERISTIC WASTES

[R 299.9627, R 299.9208, and R 299.9212 and 40 CFR §261.3(d)(1), 264.13(a)(1), 268.7, 268.9, 268.37, 268.40, 268.41, 268.42, 268.43 and Part 268, Appendix I and Appendix IX]

Generator process knowledge is typically used to determine whether characteristic waste meets the applicable treatment standards or to demonstrate that the waste has been treated by the appropriate specified treatment technology. In accordance with R 299.9627 and 40 CFR §268.41, where treatment standards are based on concentrations in the waste extract, generators shipping waste to the Facility determine if their waste meets treatment standards.

Typically, generator process knowledge is used to identify the underlying hazardous constituents that are expected to be present in the waste. Generator process knowledge is documented on the material Waste Profile Sheet and LDR notification.

A3.A.3(d) RADIOACTIVE MIXED WASTE

[R 299.9627 and 40 CFR §268.7, 268.35(c), 268.35(d), 268.36, and 268.42(d)]

The Facility does not accept radioactive mixed waste.

A3.A.3(e) LEACHATES

[R 299.9627 and 40 CFR §260.10, 268.35(a), and, 268.40]

N/A

A3.A.3(f) LABORATORY PACKS

[R 299.9627 and 40 CFR §268.7and 268.42(c) and Part 268, Appendix IV and Appendix V]

The Facility does not accept laboratory packs.

A3.A.3(g) CONTAMINATED DEBRIS

[R 299.9627 and 40 CFR §268.2(g), 268.7, 268.9, 268.36, 268.45, and 270.13(n)]:

Contaminated debris is not accepted at the Facility.

A3.A.3(h) WASTE MIXTURES AND WASTES WITH OVERLAPPING REQUIREMENTS

[R 299.9627 and 40 CFR §264.13(a), 268.7, 268.41(b), 268.43(b), and 268.45(a)]

Generator process information and analytical data are used to demonstrate that those waste mixtures and wastes with multiple waste codes are properly characterized. Each waste that has more than one characteristic will be identified with a number for each characteristic. Waste identified as meeting a listing and exhibiting a characteristic will be primarily identified with at least one of the listed waste codes for the purpose of manifesting, etc. consistent with listing up to six (6) waste codes per waste stream on a manifest.

A3.A.3(i) DILUTION AND AGGREGATION OF WASTES

[R 299.9627 and 40 CFR §268.3]

The Facility will not dilute or partially treat a listed waste to change its treatability category (i.e., from non-wastewater to wastewater), in order to comply with different treatment standards. If the wastes are all legitimately amenable to the same type of treatment to be performed, the Facility may aggregate wastes for treatment.

A3.B CAPTIVE FACILITY

The Facility is not a captive Facility.

A3.C NOTIFICATION, CERTIFICATION, AND RECORDKEEPING REQUIREMENTS

[R 299.9627 and R 299.9609 and 40 CFR §264.73, 268.7, and 268.9(d)]

The Facility performs the following procedures for preparing and/or maintaining applicable notifications and certifications to comply with LDRs.

A3.C.1 RETENTION OF GENERATOR NOTICES AND CERTIFICATIONS

[R 299.9627 and 40 CFR §268.7(a)(7)]

The Facility retains a copy of all notices, certifications, demonstrations, data, and other documentation associated with compliance to LDRs.

The following notices and certifications submitted by the initial generator of the waste are reviewed and maintained:

- Notices of restricted wastes not meeting treatment standards or exceeding levels specified in RCRA §3004(d), including the information listed in R 299.9627 and 40 CFR §268.7(a)(1).
- Notices of restricted wastes meeting applicable treatment standards and prohibition levels, including the information in R 299.9627 and 40 CFR §268.7(a)(2).

A3.C.2 NOTIFICATION AND CERTIFICATION REQUIREMENTS FOR TREATMENT FACILITIES

[R 299.9627 and 40 CFR §268.7(b)]

The Facility submits a notice and certification to any land disposal facility it uses with each shipment of restricted waste or treatment residue of a restricted waste. The notice includes the information specified in R 299.9627 and 40 CFR §268.7(b)(4) and 268.7(b)(5).

If the waste or treatment residue will be further managed at a different treatment or storage facility, the Facility will comply with the notice and certification requirements applicable to generators as specified in R 299.9627 and 40 CFR §268.7(b)(6).

A3.C.3 WASTE SHIPPED TO SUBTITLE C FACILITIES

[R 299.9627 and 40 CFR §268.7(a) and 268.7(b)(6)]

For restricted waste or waste treatment residues that are further managed at a Subtitle C (hazardous waste management) facility, the Facility submits notifications and certifications in compliance with the notice and certification requirements applicable to generators under R 299.9627 and 40 CFR §§ 268.7(a) and (b)(6).

A3.C.4 WASTE SHIPPED TO SUBTITLE D FACILITIES

[R 299.9627 and 40 CFR §268.7(d) and 268.9(d)]

The Facility does not ship waste to Subtitle D facilities.

A3.C.5 RECYCLABLE MATERIALS

[R 299.9627 and 40 CFR §268.7(b)(7)]

The Facility does not accept recyclable materials used in a manner constituting disposal.

A3.C.6 RECORD KEEPING

[R 299.9608(4), R 299.9609, R 299.9610(3), and R 299.9627 and 40 CFR §264.72, 264.73, 268.7(a)(5), 268.7(a)(6), 268(a)(7), and 268.7(d)]

EGT maintains a Facility operating log in accordance with R 299.9609 and 40 CFR §264.73. The operating log consists of at least waste characterizations, profiles, analytical results, fingerprint forms, LDR's, approvals and manifests.

Copies of all necessary notifications and certifications, as well as relevant inspection forms and monitoring data, are also maintained on file at the Facility. Files are maintained for a minimum of three years (for inspection records and LDR notifications), or until Facility closure (for inventory records).

If a significant manifest discrepancy is discovered (such as variation in one-piece count or misrepresentation of the type of waste) that cannot be resolved with the generator or transporter within 15 days of receipt, Facility personnel submit to the MDNRE Director and EPA Regional Administrator a letter describing the discrepancy and all attempts to reconcile the discrepancy. The letter will include a copy of the discrepant manifest or shipping document.

A3.C.7 REQUIRED NOTICES

[R 299.9605(1) and 40 CFR §264.12(a) and (b))]

The Facility notifies the MDNRE Environmental Resource Management Division Chief and EPA Region 5 in writing at least four weeks before the date the Facility expects to receive hazardous waste from a foreign source. Notice of subsequent shipments of the same waste from the same foreign source is not currently required. When receiving such hazardous waste, the Facility complies with applicable treaties or other agreements entered into between the country in which the foreign source is located and the United States. EGT will also comply with the recently promulgated manifest document attachment requirements.

When the EGT Facility receives hazardous waste from an off-site source, the EGT Facility informs the generator in writing that the EGT Facility has the appropriate license for, capacity, and, will accept the waste the generator is shipping. The EGT Facility keeps a copy of this written notice in the operating record.

A3.C.8 QUALITY ASSURANCE/QUALITY CONTROL PLAN

EGT's maintains a quality assurance/quality control plan at the Facility.

A3.D POST-TREATMENT SAMPLING (UIC PERMIT REQUIREMENTS)

A3.D.1 PRE-INJECTION FINGERPRINT

EGT shall conduct a "fingerprint" test of the injectate in conformance with Attachment E of EGT's two EPA-issued UIC permits (MI-163-1W-C010 & MI-163-1W-CO11, the "UIC Permits"). Prior to injection, each waste batch from a completed treatment process is tested for Specific Gravity, Total Suspended Solids, pH, Temperature, Total Dissolved Solids, Visual Solids

Content, Flashpoint, Conductivity, and any other analyses deemed appropriate for characterizing the injected waste.

A3.D.2 MONTHLY INJECTATE SAMPLING

EGT shall conduct a monthly composite test of injectate in conformance with Attachment A (Hazardous Substances Limitations and Reporting Table on page A-3 of 3) of the UIC Permits whenever any of the identified "RCRA Code(s)" in that Table are received in the prior month. Such test shall be conducted on sample(s) obtained from a treated batch containing such received waste. Depending on the waste codes received, the analyses may include one or more of the following nine chemical constituents: Aldrin; Benzidine; sym-Dichloromethyl ether; Hexachlorodibenzo-p-dioxins; Nitrosodimethylamine; 1,2,3,4,6,7,8,9-Octachlorodibenzofuran; 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin; Tetrachlorodibenzo-p-dioxins (TCDD); and Tetraethyl lead.

A3.D.3 SAMPLING AND ANALYTICAL PROCEDURES

Sampling and analytical procedures for the tests described in Sections A3.D.1 and A3.D.2 above shall conform as follows: Sampling with Appendix I of 40 CFR Part 261 (or an equivalent method approved by the Director), and, analysis with Tables IA, IB, and IC of 40 CFR Section 136.3 or in Appendix III of 40 CFR Part 261 (or an equivalent method approved by the Director).

APPENDIX A3.A.1 WASTE PROFILE SHEET

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Citrin Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Profile # _____

GENERATOR INFORMATION

Name: _____ USEPA ID # _____

Facility Address: _____ SIC/NAICS Code: _____ State Code: _____

City: _____ State: _____ Zip Code: _____

Contact: _____ Title: _____ Phone: ( ) _____ Fax: ( ) _____

BILLING INFORMATION ☐ SAME AS ABOVE

Company Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Attention: _____ Phone: ( ) _____ Fax: ( ) _____

WASTE INFORMATION

Name of Waste/Common Chemical Name:

_____

Process Generating Waste (Please *be specific, incomplete information may delay the approval process):*

_____

_____

_____

_____

_____

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: ☐ Non Hazardous Liquid Industrial Waste ☐ Hazardous Waste
2. Regulated by TSCA? ☐Yes ☐No (PCBs, etc.)
3. List ALL Applicable Waste Codes: _____ _____ _____ _____ _____ _____ _____ _____ _____

PHYSICAL CHARACTERISTICS OF WASTE

Color:	Suspended Solids	Layers:	Specific Gravity:	
☐ White/Clear ☐ Black/Brown ☐ Other _____	☐ 0-1 % ☐ 3-5 % ☐ 1-3 % ☐ > 5%	☐ Multi layered ☐ Bi-Layered ☐ Single Phase	☐ <0.8 ☐ 1.0 – 1.2 ☐ 0.8 – 1.0 ☐ 1.3 – 1.4 Exact / Other _____	

pH: ☐ NA ☐ ≤ 2 ☐ 2 – 4 ☐ 4 – 6 ☐ 6 – 8 ☐ 8 – 10 ☐ 10 – 12.5 ☐ ≥ 12.5

Liquid Flash Point: ☐ <73°F ☐ 73 – 100°F ☐ 101 – 140°F ☐ 141 – 200°F ☐ >200°F ☐ None ☐ Closed Cup ☐ Open Cup

VOC CONCENTRATION - _____ PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - *MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT <>/= 0.1%)*

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
_____	____	____ %	_____	____	____ %
_____	____	____ %	_____	____	____ %
_____	____	____ %	_____	____	____ %

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Metals: Indicate if this waste contains any of the following metals,. If Generator knowledge provide backup
☐ Lab Analysis ☐ Generator Knowledge ☐ TCLP ☐ TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	☐	____ppm	Aromatic Amine	☐	____ppm
Dioxins	☐	____ppm	Pesticides	☐	____ppm
Cyanides Reactive	☐	____ppm	Rodenticides	☐	____ppm
Cyanides Total	☐	____ppm	Fungicides	☐	____ppm
Sulfides Reactive	☐	____ppm			
Sulfides Total	☐	____ppm			

Arsenic (As)	D004	☐ < 5 ppm	____ ppm	
Barium (Ba)	D005	☐ <100 ppm	____ ppm	
Cadmium (Cd)	D006	☐ < 1 ppm	____ ppm	
Chromium (Cr)	D007	☐ < 5 ppm	____ ppm	
Lead (Pb)	D008	☐ < 5 ppm	____ ppm	
Mercury (Hg)	D009	☐ < 0.2 ppm	____ ppm	
Selenium (Se)	D010	☐ < 1 ppm	____ ppm	
Silver (Ag)	D011	☐ < 5 ppm	____ ppm	

TCLP Organics D012 – D043 above regulatory limits: Present ☐ Not Present ☐

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*
☐ Radioactive ☐ Water Reactive ☐ Oxidizer ☐ Shock Sensitive ☐ Reactive (other) ☐ DOT Explosives
☐ NIOSH Human-Positive Carcinogens ☐ NESHAP Wastes (Benzene, etc.) ☐ Biological ☐ None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? ☐Yes ☐No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name _____ Hazard Class _____ UN/NA _____

PG _____ ERG _____ Hazardous Constituents for "n.o.s." _____

4. Method of Shipment: ☐Bulk Tanker ☐Vac truck ☐Rail Car ☐Drums ☐Totes
5. Number of Units to Ship Now: _____ 6. Anticipated Volume / Units per Year: _____ or ☐ One Time
6. Special Handling Requirements including PPE:

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked ☐, I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory requirements.

Printed Name: _____ Title: _____

Generator's Signature: _____ Date: _____

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS:

PLEASE collect a representative 1-quart sample of the waste described in the above referenced GENERATORS WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

1. _____ 2. _____
SAMPLING METHOD COLLECTION POINT

3. _____
SAMPLE COLLECTOR'S NAME, TITLE, EMPLOYER

4. Sample No. _____ Preservation: Yes ☐ No ☐

5. CHAIN OF CUSTODY *Each person who handles the sample must sign below when the sample passes from one to another.*

Relinquished by: (Signature)	*Date*	*Time*	Received by: (Signature)	Date	Time

APPENDIX A3.A.2 FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	
Receiving ID#	
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	
Sampled by	

LAB INFORMATION All Waste Shipments			Oilfield Brines Only	
Compatible? (RT#)	Yes	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)			Magnesium	
pH (S.U.)			Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity			TDS	
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature				
Conductivity				
% Solids				
Turbidity	Yes	No		
Color (visual)				
TSS (%)				
Radiation Screen (as needed)				
Lab Signature				