FORM EQP 5111 ATTACHMENT TEMPLATE A3
WASTE ANALYSIS PLAN (WAP)

This document is an attachment to the Michigan Department of Environment, Great Lakes, and Energy's *Instructions for Completing Form EQP 5111, Operating License Application Form for Hazardous Waste Treatment, Storage, and Disposal Facilities.* See Form EQP 5111 for details on how to use this attachment.

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 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 template addresses requirements for a WAP for the hazardous waste management units and the hazardous waste management facility for the Dow Silicones Corporation Midland Plant facility, which is a wholly owned subsidiary of The Dow Chemical Company. All activities associated with the WAP will be conducted at the *Dow Silicones Corporation, 3901 S. Saginaw Road, Midland, MI* facility. As used in this template, the Dow Silicones Corporation may also be referred to as "Dow Silicones".

A3.A CAPTIVE FACILITY ACCEPTING CERTAIN OFF-SITE WASTE

A3.B CAPTIVE FACILITY

Although the Dow Silicones Corporation Midland Plant is a captive facility, some off-site wastes (as described in A3.A) are received; therefore, it was more appropriate to complete Section A3.A of the template.

A3.C NOTIFICATION, CERTIFICATION, AND RECORDKEEPING REQUIREMENTS

A3.C (1)	Retention of Generator Notices and Certifications
A3.C (2)	Notification and Certification Requirements for Treatment Facilities
A3.C (3)	Waste Shipped to Subtitle C Facilities
A3.C (4)	Waste Shipped to Subtitle D Facilities
A3.C (5)	Recyclable Materials
A3.C (6)	Record Keeping
A3.C (7)	Required Notice

Figure A3-1 - Example Generator Waste Characterization Form
Figure A3-2 - Logic Diagram for Treatment and Disposal of Hazardous Waste

A3.A CAPTIVE FACILITY ACCEPTING CERTAIN OFF-SITE WASTE

Dow Silicones Corporation is a captive facility that generates and manages wastes on-site and also receives certain wastes generated off-site from other Michigan based sites owned by The Dow Chemical Company and Dow subsidiaries (e.g., Dow Silicones Corporation).

The hazardous wastes stored at the Dow Silicones Corporation Midland Plant will be properly characterized prior to waste acceptance. All generators will be required to provide a complete waste characterization, including chemical analysis when appropriate. Waste screening will be conducted 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 is properly managed within the facility.

All analysis performed pursuant to this application will be consistent with the QA/QC Plan included in this WAP. All samples for the purpose of waste characterization will be collected, transported, stored, and disposed by trained and qualified individuals in accordance with the QA/QC Plan.

In accordance with R 299.9609 and 40 CFR §264.73 and Part 264, Appendix I, Dow Silicones Corporation will retain all records and results of waste determinations 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)]

Dow Silicones Corporation Midland Plant will require the following waste profile information for initial waste shipments from all generators prior to waste acceptance.

See Figure A3-1 Example Generator Waste Characterization Form (GWCF).

The GWCF has specific sections that address generator identification, the type of transport container, the chemical composition, the regulatory status of the waste, physical properties, process knowledge reference, data analysis, reactive chemicals properties, exposure hazards, and cleanup procedures, etc.

The GWCF is completed and evaluated using a computer based waste characterization system. This system enables computer-based input, evaluation, archiving and use of waste characterization data. A printable version of the GWCF can be obtained from the system. All references to the GWCF within this WAP refer to the form and/or the computer-based waste characterization system.

Figure A3-2 is a logic diagram that a generator can follow in order to determine the proper treatment and disposal of hazardous wastes. The steps include the characterization of a waste initially, the selection of a method of disposal, an assessment of the disposal method, internal tracking procedures and finally treatment. If information is lacking in the GWCF, the process of characterization is repeated.

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]

Prior to acceptance of the waste for management at the Dow Silicones site, sufficient information is obtained from the waste generator to enable qualified personnel to determine the suitable treatment or disposal method. This information is collected by use of the GWCF. Information is collected to determine if the waste is characteristically hazardous (ignitable, corrosive, reactive, or toxic), or if it meets the definition of one of the RCRA listed hazardous wastes (F, K, P, and U lists). Information is also collected to determine if the waste is hazardous as defined under Part 111 of Michigan Act 451 (toxic or Michigan S and U lists).

Regulatory compliance, personnel exposure, environmental impact, technical data, and material handling concerns are reviewed on the basis of available information. After a review by qualified waste characterization reviewers (and if necessary, by other appropriate resources such as Industrial Hygiene, Safety, Emergency Response, Product Technical Centers, and Dow's reactive chemical experts), information on waste preparation, proper handling, packaging, and other requirements is conveyed to the waste generator. Only wastes meeting Environmental Operations' requirements will be accepted (see the GWCF (Figure A3-1).

The type of information requested will depend upon the preliminary waste management mode proposed. If sufficient data exists in the GWCF to ensure the appropriate treatment or disposal procedures can be implemented safely, additional analyses will not be performed. In cases where insufficient data is submitted by a waste generator, the generator will be notified and required to provide additional data and/or analysis of the waste. Analyses performed will follow Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) or equivalent methods. The most recent approved version of SW-846 will be used when applicable.

A3.A.1(b) Subsequent Waste Shipment Procedures (Waste Profile Review)
[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(a)(3) and 264.13(b)(4)]

All waste characterizations are reviewed and updated by the generator on a specified frequency depending on the unit receiving the waste (see table below). Additionally, a re-characterization and/or analysis will occur whenever a process modification has resulted in a waste change that is significant enough to affect its regulatory status or handling characteristics. A new waste characterization form may need to be filled out if off-site waste arriving at the facility is suitable for treatment at the facility but does not match the accompanying manifest or shipping paper.

Treatment/Disposal Method	Review Frequency
Landfill	Annual (all streams)
Waste Water Treatment	Every two years (on-site streams sent to Dow WWTP) Annual for streams sent to third party TSDF
Incineration	Every three years (on-site streams sent to Dow kiln) Annual for streams sent to third party TSDF

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)]

Dow Silicones will ensure that qualified personnel review the waste profile information to ensure that the facility is authorized to receive the waste, and can manage the waste in compliance with the following:

☒	R 299.9605 and 40 CFR 264.17	General requirements for ignitable, reactive, or incompatible wastes (not accepted at Dow Silicones Landfill, unless the waste meets treatment standards) [See the appropriate Preventative Procedures section]
☒	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) [Template A3, Section A3.A.2(c)]
☒	R 299.9631 and 40 CFR 264.1063(d)	Test methods and procedures (Subpart BB)
☒	40 CFR 264.1083	Waste determination procedures (Subpart CC)

☒	R 299.9627 and 40 CFR 268.7	Waste analysis and record keeping (LDR) requirements
☒	R 299.9503 (1) (h) and 40 CFR 264.13 (c) (3)	Procedures to verify that no addition of biodegradable sorbents in containers destined to be landfilled has occurred.
☐	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 facilities in the following containers:

☒	Drums/Packs	☒	Portable tanks (dinos, dempsters, carbon pods)*
☒	Totes*	☒	Dump trucks
☒	Roll-off boxes	☒	Vacuum trucks
☒	Tanker trucks*	☐	Railroad cars
☒	Lab packs*	☒	Gas cylinders*

*Dow Silicones Landfill does not accept waste in/ from these containers, since these typically contain liquid or contained-gas wastes. However, in the rare event that a container itself is deemed a waste, that container may be placed into the landfill subject to applicable regulations and license requirements.

Upon receipt of wastes from an off-site generator, Dow Silicones will ensure qualified personnel will perform all of the following tasks:

* Review paperwork
* 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)]

Dow Silicones will ensure that qualified personnel review all paperwork, including manifests and LDR notifications, before any wastes are accepted by the facility. Dow Silicones will ensure qualified personnel will review all paperwork for completeness. In addition, the LDR notification and manifest will be compared for consistency. The manifest will also be compared to the waste profile and any analytical information that may be provided by the generator and to the waste shipment itself to ensure

the accuracy of information provided on shipment paperwork. The manifest will also be compared to the number of containers, the volume, and/or the weight of the waste in the shipment. All discrepancies will be resolved before processing the waste.

3.A.2(b) Visual Inspection of Waste

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

Dow Silicones procedures ensure qualified personnel visually inspect a minimum of one container and up to a maximum of 100 percent of the containers from each generator for the condition of the containers and proper labeling (including bar codes for waste in packs). All discrepancies will be resolved before processing the waste.

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)]

For off-site approved wastes that can be mixed with wastes at the facility, quality acceptance testing may be appropriate. These may be physical or analytical tests such as pH, color, specific gravity, or visual appearance. The sampling method will be an appropriate method described in 40 CFR 261, Appendix I. If deemed necessary, the specifics of such procedures are defined with the assistance of the generator prior to shipment. As with wastes generated on-site, these wastes will be evaluated for compatibility prior to being co-managed with other wastes.

In the event that sampling at the time of arrival indicates that the shipment is not the same as was previously characterized, then the waste is isolated and contained and the generator is contacted. The material will be re-characterized and re-approved prior to acceptance, or the shipment is rejected and returned to the generator. Waste accumulation periods for generators are managed within the requirements of 40 CFR 262.34.

During the waste characterization approval process, the qualified reviewer will evaluate waste that could go to the Landfill for non-biodegradable absorbents prior to final approval of the waste characterization. This would normally be the Environmental Management Unit approver. The generator will indicate on the GWCF, types of absorbent to be used for each waste. The following absorbents are approved for use on wastes disposed at Dow Silicones Landfill: Zorball®, sand, spun polypropylene, clay, vermiculite, and other non-biodegradable absorbents as defined in 40 CFR 264.314(d).

Dow Silicones Landfill does not accept wastes containing free liquids. Wastes will be visually screened for free liquids prior to landfilling.

The GWCF is attached at the end of this section in lieu of template Tables A3.A.1 and A3.A.2.

A3.A.3 Procedures to Ensure Compliance with Land Disposal Restrictions (LDR) Requirements [R 299.9627 and 40 CFR, Part 268]

All shipments of wastes subject to LDR received at the facility will be accompanied by appropriate generator notification and LDR notification in accordance with R 299.9627 and 40 CFR 268.7. The LDR notification accompanying generator wastes will be reviewed, and any discrepancies in the LDR notification and the associated manifest, analytical records, or waste profile sheet will require shipment rejection unless additional satisfactory clarifying information is provided by the generator. All information obtained to document LDR compliance will be maintained in the facility operating record until closure of the facility.

In accordance with the LDR regulations, all wastes shipped off site will be analyzed, or generator knowledge will be 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 will be 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 will be landfilled.

Dow Silicones will supply LDR notifications and certification, including appropriate analytical records to support the certification, to the receiving TSDF with each off-site shipment of waste. The notifications and certifications will contain the information required under R 299.9627 and 40 CFR 268.7. Any additional data obtained from the generators (e.g., waste profile sheets, original LDR notifications, analysis provided by generators) will be provided to the licensed TSDF where the waste will be 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. Generator process knowledge will be used to determine the presence of spent solvent wastes (F001-F005). Generator process knowledge will be documented on the GWCF and LDR notification. The LDR notification will provide 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 will be used to determine whether listed waste meets the applicable treatment standards or 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 will use toxicity characteristic leaching procedures (TCLP) to determine if wastes meet treatment standards. Generator process knowledge will be documented on the GWCF 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 will be used to determine whether characteristic wastes meet 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 will determine if their wastes meet treatment standards.

If laboratory analysis is necessary, characteristic D008 lead non-wastewaters and D004 arsenic non-wastewaters will be analyzed using TCLP to determine compliance with treatment standards of 40 CFR 268.40 and 268.48. If after treatment a hazardous waste displays a characteristic for the first time, the characteristic waste code will be added to the LDR notification and facility records. Wastes will be re-treated, as appropriate, to meet the characteristic treatment standards of 40 CFR 268.40 and 268.48 prior to land disposal. In addition, generator process knowledge will be used to identify the underlying hazardous constituents that are expected to be present in the waste. Generator process knowledge will be documented on the GWCF 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.

NOTE: Dow Silicones Landfill can accept waste containing naturally occurring radioactive material, “NORM”, as exempted by R 325.5052 of Michigan's Ionizing Radiation Rules, Act No. 305 of the Public Acts of 1972.

A3.A.3(e) Leachates
[R 299.9627 and 40 CFR §260.10 and 40 CFR §§268.35(a) and 268.40]

☒ The facility does not accept single-source or multi-source F039 leachates.

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 laboratory packs accepted at the facility are not land disposed.

If a laboratory pack hazardous waste is combined with nonlaboratory pack hazardous waste prior to or during treatment, the entire mixture will be treated to meet the most stringent treatment standards for each waste constituent before being land disposed.

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)]

☒ The hazardous debris categories and the contaminant categories associated with the types of hazardous debris accepted at the facility are presented in Table A-3.

Hazardous debris accepted at the facility that exhibits the hazardous waste characteristics of ignitability, corrosivity, or reactivity will be treated off-site using one of the extraction, destruction, or immobilization technologies identified in Table 1 of 40 CFR 268.45.

Hazardous debris is not accepted at the Dow Silicones Landfill.

Table A-3 Contaminated Debris Categories Accepted For Storage

Hazardous Debris Category	Contaminant Category
Glass: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Metal: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Plastic: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Rubber: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Brick: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Cloth: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Concrete: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Paper: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Asphalt: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Rock: Yes	Toxicity characteristic waste, or debris contaminated with listed waste
Wood: Yes	Toxicity characteristic waste, or debris contaminated with listed waste

The waste characterization process used for all other waste will be used to characterize the hazardous debris managed at the facility. These procedures ensure hazardous debris is treated in accordance with treatment standards specified in R 299.9627 and 40 CFR 268.45, or to meet the existing treatment standards for each waste constituent specified in R 299.9627 and 40 CFR 268.41 and 268.43 (except wastes with a specified treatment technology listed in R 299.9627 and 40 CFR 268.42, which must be treated as required in R 299.9627 and 40 CFR 268.42).

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 will be used to demonstrate that those waste mixtures and wastes with multiple 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 the listed waste code for the purpose of manifesting, etc.

A3.A.3(i) Dilution and Aggregation of Wastes

[R 299.9627 and 40 CFR §268.3]

Listed wastes, if destined for land disposal, may not be diluted from the point of generation to the point of land disposal. Characteristic wastes may only be diluted if (1) the waste is managed in a Clean Water Act (CWA)/CWA-equivalent surface unit, (2) the waste has a concentration-based treatment standard or is treated using the deactivation (DEACT) technology-based treatment standard, and (3) the waste is not a D003 reactive waste.

The facility may 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

Although the Dow Silicones Corporation Midland Plant is a captive facility, some off-site wastes (as described in A3.A) are received; therefore, it was more appropriate to complete Section A3.A of the template.

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)]

Dow Silicones will perform the following procedures for preparing and/or maintaining applicable notifications and certifications to comply with LDRs:

Appendix A3-2 to the WAP describes Dow Silicones' 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)]

Dow Silicones will retain a copy of all notices, certifications, demonstrations, data, and other documentation associated with compliance to LDRs in the operating record until closure of the facility.

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

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

* Certifications 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 treatment facility will submit a one-time notice and certification to the land disposal facility with each shipment of restricted waste or treatment residue of a restricted waste as specified in 40 CFR 268.7(b)(3). The notice will include the information specified in R 299.9627, 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 will be further managed at a Subtitle C (hazardous waste management) facility, the facility will submit 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 hazardous debris or characteristic waste to Subtitle D facilities.

A3.C.5 Recyclable Materials
[R 299.9627 and 40 CFR §268.7(b)(6)]

☒ The facility does **not accept** recyclable materials used in a manner constituting disposal.

OR

☐ For wastes that are recyclable materials used in a manner constituting disposal, in accordance with R 299.9206 and 40 CFR §266.20(b), the facility will submit a notice and certification to the Director, or delegated representative, with each shipment of waste describing the waste and applicable treatment standards and identifying the facility receiving the waste.

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)]

Dow Silicones maintains a facility operating record in accordance with R 299.9609 and 40 CFR 264.73.

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 will be maintained for a minimum of three (3) years (for inspection records and LDR notification), 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 such as corrosive rather than flammable) that cannot be resolved with the generator or transporter within 15 days of receipt, facility personnel will submit to the Director (or delegated representative) and 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.

In the event that the facility manages a restricted waste that is excluded from the definition of a hazardous or solid waste or that is exempt from Subtitle C regulations the facility will place a one-time notice in the facility files describing the generation, basis for exclusion or exemption, and disposal of the waste. For each shipment of treated debris, the facility will place a certification of compliance with applicable treatment standards in the facility's files.

A3.C.7 Required Notice

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

The facility will notify the Division Director 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 required. When receiving such hazardous waste, the facility will comply with applicable treaties or other agreements entered into between the country in which the foreign source is located and the United States.

When the facility is to receive hazardous waste from an off-site source, the facility will inform the generator in writing that the facility has the appropriate license for and will accept the waste the generator is shipping. The facility will keep a copy of this written notice in the operating record.

Dow Silicones Waste Characterization Form Example

The Dow Waste Characterization Form consists of a series of subject matter forms. The subject matter forms are used and included only when they are applicable to an individual waste stream. Not all subject matter forms will be applicable for every waste stream. Dow utilizes an electronic system in order for generators to complete the Generator Waste Characterization Form (GWCF). If information is not pertinent to a particular stream, then pages on the detailed GWCF are currently printed with blanks. In order to reduce the amount of blank paper printed needlessly, one improvement that has been applied to the GWCF is that the generator will be able to print the Profile Summary Report, which includes only the applicable information. A list of the subject matter form names and a brief overview of their content is given below.

Form Name	Included For:	Length	Signature
Submittal Form	All wastes	1 page	Yes
Profile Summary Report	All wastes	3-8 pages	No
LDR Forms listed below:	Hazardous wastes only		
• LDR Off-site shipments	Wastes sent from off-site to Dow and from Dow to off-site	1 page	No
• LDR Appendix IV Lab Pack Certification	RCRA Hazardous Lab Packs only	1 page	Yes
• LDR Notification	RCRA Hazardous wastes	1-2 pages	Yes
• LDR Certification	RCRA Hazardous with land disposal	1 page	Yes
• LDR Attachment 1	RCRA Hazardous with RCRA F codes	2 pages	No
• LDR Attachment 2 (UHCs/UTS)	RCRA Hazardous with RCRA D codes	8 pages	No

Examples of each form are included below.

EXAMPLE SUBMITTAL FORM

DOW SILICONES UNIVERSAL WASTE CHARACTERIZATION

****Waste Profile Number:**
****Tracking ID:**

A. GENERATOR INFORMATION

1. Company Name :
2. Street Address :
3. Generator EPA ID # :
4. a. Contact name : b. Dow ID #:
5 a. Site Name/Plant Name/OPN :
6. NEA Cost Center Code (10 digits) :

B. GENERAL INFORMATION

1. Waste Title:

C. RECEIVER INFORMATION

1. Proposed location for waste storage, treatment or disposal

Name

GENERATOR/CONTACT PERSON CERTIFICATION

(MUST be trained in RCRA management)

I certify that, based on process knowledge, laboratory analysis, or my inquiry of those individuals immediately responsible for obtaining this information, the information on this form is true, accurate and complete, I am aware that significant penalties (including the possibility of fine and imprisonment) may be assessed for knowingly causing the improper classification and/or disposal of wastes.

Name(printed):		Master #:
Title:	Bldg #:	Telephone #:
Signature(original):		Date:

DO NOT DELETE. This marks the end of this waste characterization packet

DOW SILICONES WASTE CHARACTERIZATION SUMMARY

Waste Profile Number - Example profile summary
Tracking ID –

A. GENERATOR INFORMATION

1. Company Name :
2. Street Address :
3. Generator EPA ID # :
4. a. Contact name : **b. Dow ID #:**
c. Telephone #:
5. Waste is from
a. Site / Generator Name:
b. Control Rm. Telephone #:
6. Cost Center:

B. GENERAL INFORMATION

1. Waste Title (80 char):

2. Proper Shipping Name:

3. a. Waste Source:

4. a. Anticipated frequency:

b. Expected generation rate:

5. Container Information :

Category	Package Type	Material of Construction of Container	Capacity of Container (minimum unit for non-specific containers)

C. RECEIVER INFORMATION

Site	Disposer Facility	Package Type	Max. Approved Weight	Unload Designation	Recharge Category	Pri.	Offsite Waste Profile Number

D. WASTE COMPOSITION

Exact Comp. based on Starting Materials (100 %) Comp. total must be between 99.5% and 100.5%

Component Name	CAS Number	Specification ID	Concentration Range with units (% Wt, PPM, etc)	Average Concentration	Additive	Detrm. Meth.

[Total Aver. Conc. Exact Comp. based on Starting Materials : 100 %]

WCT Standard Composition (100 %)

Component Name	CAS Number	Specification ID	Concentration Range with units (% Wt, PPM, etc)	Average Concentration	Additive	Detrm. Meth.

[Total Aver. Conc. WCT Standard Composition : 100 %]

E. PHYSICAL CHARACTERISTICS

1. Physical state of waste as generated:

2. Physical state of waste as shipped:

3. Specific properties. DM = Determination Method (i.e. Analytical, Process Knowledge, Best Engineering

Property	Calc. Avg.	Calc. Min.	Calc. Max.	Avg.	Min.	Max.	Text Value/Cmnt.	DM
1,2-DICHLOROETHANE								
2-PROPENEAMINE								
2-PROPENEAMINE POLYMERS								
ALUMINUM NITRIDE								
ANTIMONY CONTENT								
ARSENIC CONTENT								
ASH								
AUTO IGNITION TEMPERATURE								
BERYLLIUM CONTENT								
BIS CHLOROMETHYL ETHER								
BROMINE CONTENT								
CADMIUM CONTENT								
CARBON CONTENT								
CHLORINE CONTENT								
CHROMIUM CONTENT								
CHROMIUM VI CONTENT								
COBALT CONTENT								
COLOR								
COPPER CONTENT								
DENSITY								
ETHANOL								
FLASHPOINT								
FLUORINE CONTENT								
HEAT OF COMBUSTION								
HYDRAZINE								
HYDROGEN CONTENT								
IODINE CONTENT								
LEAD CONTENT								
LITHIUM CONTENT								
LITHIUM HYDROXIDE								
MANGANESE CONTENT								
MERCURY CONTENT								

Property	Calc. Avg.	Calc. Min.	Calc. Max.	Avg.	Min.	Max.	Text Value/Cmnt.	DM
METHANOL								
MOLES OF H+								
NICKEL CONTENT								
NITROGEN CONTENT								
OXYGEN CONTENT								
PCB								
PH								
PHOSPHOROUS CONTENT								
PLATINUM CONTENT								
POTASSIUM CONTENT								
QUINOLINE								
SILVER CONTENT								
SODIUM CONTENT								
SULFUR CONTENT								
SULFURIC ACID CONTENT								
TETRACHLOROSILANE								
THALLIUM CONTENT								
TOLUENE								
TOTAL DISSOLVED SOLIDS								
TOTAL ORGANIC CARBON								
TOTAL OXYGEN DEMAND								
VINYL CHLORIDE								
ZINC CONTENT								

4. Reactive Chemical Properties

	Y/N/NA	Explanation
Shock Sensitive		
Decompose <200 ° F		
Perform testing		
Long term stability issues		
LOPA		
Preferred solvent		
Reactive with diesel fuel or other common solvents		
Polymer deposits		

5. Safety and Exposure Hazard

	Y/N/NA	Explanation
Sensitizer		
Lachrymator		
Acute Skin Exposure Hazard		
Carcinogenic		
Offensive Odor		
Acute Vapor Exposure Hazard		
Toxic		
Irritant		

	Y/N/NA	Explanation
Explain and list any acute hazard		

6. Personal Protective Equipment (PPE)

Handling

Type	PPE to wear in normal handling situations will be listed here (i.e. monogoggles, gloves, etc)
Eyes	
Hands	
Body	
FEET	
Breath	
Cartridge Type	

Spill

Type	
Eyes	
Hands	
Body	
FEET	
Breath	
Cartridge Type	

Others

Type	Other PPE to wear for handling or spill situations will be listed here
Eyes	
Hands	
Body	
FEET	
Breath	

7. Absorbents - USE
Additional absorbents to USE:

Absorbents to use appear here.

Absorbents - AVOID
Additional absorbents to AVOID:

Absorbents to avoid appear here.

How is the waste handled at the manufacturing plant? List any special precautions or procedures:

8. Have there been any known problems with treating this waste in the past?

9. Any additional information relevant to this profile?

Reference Codes

Substance

Reference Code Type	Reference Code	Description	Confirmed
Michigan Waste Catalog - MI_WC	MI State Codes		
USA Hazardous Waste Catalog (RCRA) - RCRA	D Codes		
USA Hazardous Waste Catalog (RCRA) - RCRA	F Codes		
USA Hazardous Waste Catalog (RCRA) - RCRA	U Codes		
USA Hazardous Waste Catalog (RCRA) - RCRA	P Codes		
USA Hazardous Waste Catalog (RCRA) - RCRA	K Codes		
APPLICABLE REGULATIONS - APPREG	RCRA HAZ		
APPLICABLE REGULATIONS - APPREG	TSCA 5E		
GHS - STATE OF MATTER - GHSSOM	GHS Related Codes		
EPA Source Codes - EPA Source Code	G-Code		

Receiver

Receiver	Reference Code Type	Reference Code	Description	Confirmed

Comments

Substance

Comment Type	Comment

Receiver

Receiver	Comment Type	Comment

Tracking ID: Profile Number:

DOW SILICONES LDR CERTIFICATION WORKSHEET

** For help, click on the blue hyperlinks to be forwarded to the appropriate section of the guidance document.

Important:

- This form must be completed for all RCRA Hazardous Wastes and hazardous waste treatment residues.
- Records Retention of three years from the date the waste was last disposed of

A. LDR OFF-SITE SHIPMENTS

EXAMPLE OF LDR OFF-SITE SHIPMENTS FORM

1 . If the waste is to be transported to an off-site facility, complete the following generator information and send the applicable LDR Worksheet Sections and Attachments with the initial shipment of the waste

Name | Phone

Company | EPA ID #

Address

2. The waste identified on the accompanying (name of State) Hazardous Waste Manifest Number

☐ does ☐ does not meet the applicable LDR treatment standards.

3. The waste will be shipped to the following treatment, storage, or disposal unit or facility:

☐ Rotary Kiln — Dow Location

☐ Permitted Storage — Dow Location

☐ Landfill — Dow Location

☐ Other Company — Facility Name

Location

Note: Use the forms provided by the outsite company for Waste Characterization and Land Disposal Restriction documentation rather than this LDR Worksheet unless the company does not have available forms.

B. LAB PACKS

SEE PAGE 20 FOR EXAMPLE OF LAB PACK CERTIFICATION FORM

1 . If the Lab Pack Exemption is to be used, complete the Lab Pack Certification form and send a copy with each shipment of waste. This applies to both on-site and off-site shipments. Other LDR sections do not need to be completed. To add this form to your waste characterization packet, go to the Main Form Section I and double-click the "Add" button for the "LDR App IV Lab Pack Certification"

C. LAND DISPOSAL RESTRICTION NOTIFICATION

EXAMPLE OF LDR NOTIFICATION

This waste is subject to Land disposal Restrictions under 40 CFR 268. Attach Waste Analysis, if available.

1. This Waste requires ☐ requires treatment to meet the LDR requirements. *DO not complete Section E.*

☐ meets the treatment standards or has been treated by the LDR specified technology. *(Complete Section E, LDR Certification, in addition to the other sections.)*

2. This waste meets the definition of a: ☐ Wastewater ☐ Non-wastewater.

A wastewater is a waste that contains <1% by weight Total Suspended Solids AND <1% by weight Total Organic Carbon

3 .The information applicable to this waste is identified below. Check off at least one of the applicable box(es) below. If you do not know which box(es) to check, consult the Approver.

a. ☐ The waste is not restricted because there is no land disposal (or land disposal of waste treatment residues, e.g.,ash).

b. ☐ The waste is a F001-F005 spent solvent. Complete the LDR Attachment 1 to specify the applicable constituents.

c. ☐ The waste is F039 multi-source leachate. Complete the LDR Attachment 2 to specify the constituents present in the waste.[a]

d. ☐ The waste is an EPA listed hazardous waste (other than F001-F005, F039) as determined in Section A.4 of the RCRA Assessment Worksheet. Copy the EPA hazardous waste numbers to Section D of this LDR worksheet.

e. ☐ This is a RCRA hazardous wastewater that is treated in a elementary neutralization system, wastewater treatment system, is discharged through an NPDES outfall, and/or is sent to a Publicly Owned Treatment Works, which are all subject to the Clean Water Act. Subsequent to generation, the wastewater becomes exempt from further RCRA regulation because it is managed as specified at 40 CFR 261.4(a)(2). Copy the EPA hazardous waste numbers from Section A and B of the RCRA Assessment Worksheet.to Section D of this LDR worksheet.

[This is the One-time Notice to File Pursuant to 40 CFR 268.7(a)(7)].

f. ☐ The waste is characteristically hazardous (D001-D043) as determined in specified in Section B of the RCRA Assessment Worksheet. Copy the EPA hazardous waste numbers to Section D of this LDR worksheet. Complete the LDR Attachment 2 for the Underlying Hazardous Constituents present in the waste.a,b Specify any applicable Subcategories for these characteristic wastes in Section D of this LDR Worksheet. (Refer to LDR Treatment Standards Table)

g. ☐ The waste is RCRA-hazardous debris that will be or has been treated via alternative treatment technologies. Copy the applicable EPA hazard codes (D,K,F,P,U) associated with the debris to Section D of the LDR worksheet. Attachments 1 and 2 do not need to be filled out. **Contact the Approver before checking this box.**

h. ☐ This waste is soil contaminated with RCRA-hazardous waste for which the Alternative LDR Treatment Standards for Soil of 40 CFR 268.49 (see Soil Alternative Concentration Limits) will be used. **Contact the Approver before checking this box.** If the Alternative LDR Treatment Standards for Soil are not going to be used, then treat the contaminated soil as any other RCRA-hazardous waste.

[a] LDR Attachment 2 is not required for Freeport on-site generators who send this waste to the B-33 Rotary Kiln Incinerator. For other situations where the waste will be monitored for all constituents, there is no need to specify them. Consult the Approver if you have questions.

[b] LDR Attachment 2 is not required for the following Subcategories:D001 ignitable wastes that are incinerated or recovered,D003 reaactive cyanides or sulfides,D006 cadmium batteries,D008 lead acid batteries,D009 high mercury organic wastes,and D009 high mercury inorganic wastes.

D001 ignitable wastes that are incinerated or recovered
D003 reaactive cyanides or sulfides,
D006 cadmium batteries,
D008 lead acid batteries,
D009 high mercury organic wastes, and
D009 high mercury inorganic wastes.

D. EPA HAZARDOUS WASTE NUMBER(S) AND SUBCATEGORY IDENTIFICATION

Refer to the guidance document (use the hyperlink above) or LDR Treatment Standards Table for help in determining the applicable Subcategories.

EPA Hazardous Waste Number	Subcategory (if applicable)	EPA Hazardous Waste Number	Subcategory (if applicable)

Authorized signature Date

Printed or Typed Name Title

Tracking ID: Profile Number:

LAND DISPOSAL RESTRICTION CERTIFICATION

EXAMPLE OF LDR CERTIFICATION

This section can only be completed if the waste meets the applicable LDR treatment standards or has been treated according to waste specific technology for the EPA Hazardous Waste Numbers listed in Section D (see LDR Treatment Standards Table), and is going directly to land disposal.**IF THE WASTE IS NOT GOING DIRECTLY TO LANDFILL, DO NOT COMPLETE THIS SECTION**. As required by 40 CFR 268.7, the following applicable certification(s) are made for this restricted waste:

1. ☐ Waste or contaminated soil which meets treatment standards without prior treatment:

   I certify under penalty of law that I have personally examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment

2. ☐ Waste which now meets treatment standards after treatment or has been treated by a specified technology (e.g., combustion, carbon adsorption, etc.):

   I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR 268.40 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

3. ☐ The waste is debris and was treated by a technology listed in Table I of 40 CFR 268.45. List the Alternative Treatment Method used for treating the debris

   I certify under penalty of law that the debris has been treated in accordance with the requirements of 40 CFR 268.45. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

   ☐

   Contact the Approver before checking this box

4. ☐ Wastes that are characteristic only (D001-D043) that have been decharacterized and are to be sent to a non-hazardous landfill. **Contact the Approver before checking this box.**

   I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic and that underlying hazardous constituents, as defined in 268.2(I) have been treated on-site to meet the Universal Treatment Standards. I am aware there are significant penalties for submitting false certification, including the possibility of fine and imprisonment.

Authorized signature Date

Printed or Typed Name Title

EXAMPLE OF LDR ATTACHMENT 1 – F LIST

LDR ATTACHMENT 1 (F-LIST)

(Mark all applicable EPA Hazardous Waste Numbers and Constituents of Concern)

EPA Hazardous Waste Number	Hazardous Waste Description	Constituents of Concern
☐ F001	Spent halogenated solvents used in degreasing and still bottoms from the recovery of these spent solv ents and spent solvents mixtures.	☐ Carbon tetrachloride ☐ Methylene chloride ☐ Tetrachloroethylene ☐ 1,1,1 -Trichloroethane ☐ Trichloroethylene ☐ 1,1,2-Trichloro-1,2,2-trifluoroethane ☐ Trichlorofluoromethane
☐ F002	Spent halogenated solvents and still bottoms from the recovery of these spent solvents and spent solv ent mixtures.	☐ Chlorobenzene ☐ o-Dichlorobenzene ☐ Methylene chloride ☐ Tetrachloroethylene ☐ 1,1,1 -Trichloroethane ☐ 1,1,2-Trichloroethane ☐ Trichloroethylene ☐ 1,1,2-Trichloro-1,2,2-trifluoroethane ☐ Trichlorofluoromethane
☐ F003 Subcategory	Spent non- Halogenated solvents and still bottoms from the recovery of these spent solvents and spen t solvent mixtures.	☐ Acetone ☐ n-Butyl alcohol ☐ Cyclohexanone ☐ Ethyl acetate ☐ Ethyl benzene ☐ Ethyl ether ☐ Methanol ☐ Methyl isobutyl ketone ☐ Xylene
☐ F003 and/or F005 Subcategory	Spent non- halogenated solvents containing only o ne or more of the following: carbon disulfide, and cyclohexanone, and/or methanol	☐ Carbon disulfide ☐ Cyclohexanone ☐ Methanol
☐ F004	Spent non-halogenated solvents and still bottoms f rom the recovery of these spent solvents and spent solvent mixtures.	☐ Cresols (m and p isomers) ☐ Nitrobenzene ☐ o-Cresol ☐ Cresol (mixed isomers)

EPA Hazardous Waste Number	Hazardous Waste Description	Constituents of Concern
☐ F005 Subcategory	Spent non- halogenated solvents and still bottoms from the recovery of these spent solvents and spen t solvent mixtures.	☐ Benzene ☐ Carbon disulfide ☐ 2-Ethoxyethanol ☐ Isobutanol ☐ Methyl ethyl ketone ☐ 2-Nitropropane ☐ Pyridine ☐ Toluene
☐ F005 Subcategory	Spent non- halogenated solvents : 2-Nitropropane only	☐ 2-Nitropropane
☐ F005 Subcategory	Spent non- halogenated solvents : 2-Ethoxyethanol only	☐ 2-Ethoxyethanol

EXAMPLE OF LDR ATTACHMENT 2 – UHCs / UTS

LDR ATTACHMENT 2 (Underlying Hazardous Constituents / Universal Treatment Standards
(Mark all applicable Constituents of Concern)

Regulated constituent--common name	CAS No.	Wastewater Standard in mg/L	Non-Wastewater Standard in mg/kg
☐ Acenaphthene	83-32-9	0.059	3.4
☐ Acenaphthylene	208-96-8	0.059	3.4
☐ Acetone	67-64-1	0.28	160
☐ Acetonitrile	75-05-8	5.6	38
☐ Acetophenone	98-86-2	0.010	9.7
☐ 2-Acetylaminofluorene	53-96-3	0.059	140
☐ Acrolein	107-02-8	0.29	NA
☐ Acrylamide[1]	79-06-1	19	23
☐ Acrylonitrile	107-13-1	0.24	84
☐ Aldicarb sulfone[1]	1646-88-4	0.056	0.28
☐ Aldrin	309-00-2	0.021	0.066
☐ 4-Aminobiphenyl	92-67-1	0.13	NA
☐ Aniline	62-53-3	0.81	14
☐ o-Anisidine (2-methoxyaniline)	90-04-0	0.01	0.66
☐ Anthracene	120-12-7	0.059	3.4
☐ Aramite	140-57-8	0.36	NA
☐ Barban[1]	101-27-9	0.056	1.4
☐ Bendiocarb[1]	22781-23-3	0.056	1.4
☐ Benomyl[1]	17804-35-2	0.056	1.4
☐ Benz(a)anthracene	56-55-3	0.059	3.4
☐ Benzal chloride[1]	98-87-3	0.055	6.0
☐ Benzene	71-43-2	0.14	10
☐ Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
☐ Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	207-08-9	0.11	6.8
☐ Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
☐ Benzo(a)pyrene	50-32-8	0.061	3.4
☐ alpha-BHC	319-84-6	0.00014	0.066
☐ beta-BHC	319-85-7	0.00014	0.066
☐ delta-BHC	319-86-8	0.023	0.066
☐ gamma-BHC	58-89-9	58-89-9	0.066
☐ Bromodichloromethane	75-27-4	0.35	15
☐ Methyl bromide (Bromomethane)	74-83-9	0.11	15
☐ 4-Bromophenyl phenyl ether	101-55-3	0.055	15

Regulated constituent--common name	CAS No.	Wastewater Standard in mg/L	Non-Wastewater Standard in mg/kg
☐ n-Butyl alcohol	71-36-3	5.6	2.6
☐ Butyl benzyl phthalate	85-68-7	0.017	28
☐ Butylate[1]	2008-41-5	0.042	1.4
☐ 2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
☐ Carbaryl[1]	63-25-2	0.006	0.14
☐ Carbenzadim[1]	10605-21-7	0.056	1.4
☐ Carbofuran[1]	1563-66-2	0.006	0.14
☐ Carbofuran phenol[1]	1563-38-8	0.056	1.4
☐ Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
☐ Carbon tetrachloride	56-23-5	0.057	6
☐ Carbosulfan[1]	55285-14-8	0.028	1.4
☐ Chlordane (alpha and gamma isomers)[1]	57-74-9	0.0033	0.26
☐ p-Chloroaniline	106-47-8	0.46	16
☐ Chlorobenzene	108-90-7	0.057	6
☐ Chlorobenzilate	510-15-6	0.1	NA
☐ 2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
☐ Chlorodibromomethane	124-48-1	0.057	15
☐ Chloroethane	75-00-3	0.27	6
☐ bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
☐ bis(2-Chloroethyl)ether	111-44-4	0.033	6
☐ 2-Chloroethyl vinyl ether[1]	110-75-8	0.062	NA
☐ Chloroform	67-66-3	0.046	6
☐ bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
☐ p-Chloro-m-cresol	59-50-7	0.018	14
☐ Chloromethane (Methyl chloride)	74-87-3	0.19	30
☐ 2-Chloronaphthalene	91-58-7	0.055	5.6
☐ 2-Chlorophenol	95-57-8	0.044	5.7
☐ 3-Chloropropylene	107-05-1	0.036	30
☐ Chrysene	218-01-9	0.059	3.4
☐ p-Cresidine	120-71-8	0.01	0.66
☐ o-Cresol	95-48-7	0.11	5.6
☐ m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
☐ p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
☐ m-Cumenyl methylcarbamate[1]	64-00-6	0.056	1.4
☐ Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP

Regulated constituent--common name	CAS No.	Wastewater Standard in mg/L	Non-Wastewater Standard in mg/kg
o,p'-DDD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
Ethylene dibromide (1,2- Dibromoethane)	106-93-4	0.028	15
Dibromomethane	74-95-3	0.11	15
m-Dichlorobenzene	541-73-1	0.036	6
o-Dichlorobenzene	95-50-1	0.088	6
p-Dichlorobenzene	106-46-7	0.09	6
Dichlorodifluoromethane	75-71-8	0.23	7.2
1,1-Dichloroethane	75-34-3	0.059	6
1,2-Dichloroethane	107-06-2	0.21	6
1,1-Dichloroethylene	75-35-4	0.025	6
trans-1,2-Dichloroethylene	156-60-5	0.054	30
2,4-Dichlorophenol	120-83-2	0.044	14
2,6-Dichlorophenol	87-65-0	0.044	14
2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10
1,2-Dichloropropane	78-87-5	0.85	18
cis-1,3-Dichloropropylene	10061-01-5	0.036	18
trans-1,3-Dichloropropylene	10061-02-6	0.036	18
Dieldrin	60-57-1	0.017	0.13
Diethyl phthalate	84-66-2	0.2	28
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	0.01	0.66
2,4-Dimethyl phenol	105-67-9	0.036	14
Dimethyl phthalate	131-11-3	0.047	28
Di-n-butyl phthalate	84-74-2	0.057	28
1,4-Dinitrobenzene	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol	534-52-1	0.28	160
2,4-Dinitrophenol	51-28-5	0.12	160
2,4-Dinitrotoluene	121-14-2	0.32	140

Regulated constituent--common name	CAS No.	Wastewater Standard in mg/L	Non-Wastewater Standard in mg/kg
☐ 2,6-Dinitrotoluene	606-20-2	0.55	28
☐ Di-n-octyl phthalate	117-84-0	0.017	28
☐ p-Dimethylaminoazobenzene[1]	60-11-7	0.13	NA
☐ Di-n-propylnitrosamine	621-64-7	0.4	14
☐ 1,4-Dioxane	123-91-1	12	170
☐ Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
☐ Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
☐ 1,2-Diphenylhydrazine	122-66-7	0.087	NA
☐ Disulfoton	298-04-4	0.017	6.2
☐ Dithiocarbamates (total)[1]	137-30-4	0.028	28
☐ Endosulfan I	959-98-8	0.023	0.066
☐ Endosulfan II	33213-65-9	0.029	0.13
☐ Endosulfan sulfate	1031-07-8	0.029	0.13
☐ Endrin	72-20-8	0.0028	0.13
☐ Endrin aldehyde	7421-93-4	0.025	0.13
☐ EPTC[1]	759-94-4	0.042	1.4
☐ Ethyl acetate	141-78-6	0.34	33
☐ Ethyl benzene	100-41-4	0.057	10
☐ Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
☐ Ethyl ether	60-29-7	0.12	160
☐ Ethyl methacrylate	97-63-2	0.14	160
☐ Ethylene oxide	75-21-8	0.12	NA
☐ bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
☐ Famphur	52-85-7	0.017	15
☐ Fluoranthene	206-44-0	0.068	3.4
☐ Fluorene	86-73-7	0.059	3.4
☐ Formetanate hydrochloride[1]	23422-53-9	0.056	1.4
☐ Heptachlor	76-44-8	0.0012	0.066
☐ Heptachlor epoxide	1024-57-3	0.016	0.066
☐ 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035	0.0025
☐ 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035	0.0025
☐ 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7	0.000035	0.0025
☐ Hexachlorobenzene	118-74-1	0.055	10
☐ Hexachlorobutadiene	87-68-3	0.055	5.6
☐ Hexachlorocyclopentadiene	77-47-4	0.057	2.4

Regulated constituent--common name	CAS No.	Wastewater Standard in mg/L	Non-Wastewater Standard in mg/kg
☐ Hexachloroethane	67-72-1	0.055	30
☐ Hexachloropropylene	1888-71-7	0.035	30
☐ HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
☐ HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
☐ Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
☐ Iodomethane	74-88-4	0.19	65
☐ Isobutyl alcohol	78-83-1	5.6	170
☐ Isodrin	465-73-6	0.021	0.066
☐ Isosafrole	120-58-1	0.081	2.6
☐ Kepone	143-50-8	0.0011	0.13
☐ Methacrylonitrile	126-98-7	0.24	84
☐ Methanol	67-56-1	5.6	0.75 mg/l TCLP
☐ Methapyrilene	91-80-5	0.081	1.5
☐ Methiocarb[1]	2032-65-7	0.056	1.4
☐ Methomyl[1]	16752-77-5	0.028	0.14
☐ Methoxychlor	72-43-5	0.25	0.18
☐ Methyl ethyl ketone	78-93-3	0.28	36
☐ Methyl isobutyl ketone	108-10-1	0.14	33
☐ Methyl methacrylate	80-62-6	0.14	160
☐ Methyl methansulfonate	66-27-3	0.018	NA
☐ Methyl parathion	298-00-0	0.014	4.6
☐ 3-Methylcholanthrene	56-49-5	0.0055	15
☐ 4,4-Methylene bis(2-chloroaniline)	101-14-4	0.5	30
☐ Methylene chloride	75-09-2	0.089	30
☐ Metolcarb[1]	1129-41-5	0.056	1.4
☐ Mexacarbate[1]	315-18-4	0.056	1.4
☐ Molinate[1]	2212-67-1	0.003	1.4
☐ Naphthalene	91-20-3	0.059	5.6
☐ 2-Naphthylamine	91-59-8	0.52	NA
☐ o-Nitroaniline[1]	88-74-4	0.27	14
☐ p-Nitroaniline	100-01-6	0.028	28
☐ Nitrobenzene	98-95-3	0.068	14
☐ 5-Nitro-o-toluidine	99-55-8	0.32	28
☐ o-Nitrophenol[1]	88-75-5	0.028	13
☐ p-Nitrophenol	100-02-7	0.12	29

Regulated constituent--common name	CAS No.	Wastewater Standard in mg/L	Non-Wastewater Standard in mg/kg
☐ N-Nitrosodiethylamine	55-18-5	0.4	28
☐ N-Nitrosodimethylamine	62-75-9	0.4	2.3
☐ N-Nitroso-di-n-butylamine	924-16-3	0.4	17
☐ N-Nitrosomethylethylamine	10595-95-6	0.4	2.3
☐ N-Nitrosomorpholine	59-89-2	0.4	2.3
☐ N-Nitrosopiperidine	100-75-4	0.013	35
☐ N-Nitrosopyrrolidine	930-55-2	0.013	35
☐ 1,2,3,4,6,7,8,9-Octochlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063	0.005
☐ 1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063	0.005
☐ Oxamyl[1]	23135-22-0	0.056	0.28
☐ Parathion	56-38-2	0.014	4.6
☐ Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.1	10
☐ Pebulate[1]	1114-71-2	0.042	1.4
☐ Pentachlorobenzene	608-93-5	0.055	10
☐ PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
☐ PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
☐ Pentachloroethane[1]	76-01-7	0.055	6
☐ Pentachloronitrobenzene	82-68-8	0.055	4.8
☐ Pentachlorophenol	87-86-5	0.089	7.4
☐ Phenacetin	62-44-2	0.081	16
☐ Phenanthrene	85-01-8	0.059	5.6
☐ Phenol	108-95-2	0.039	6.2
☐ 1,3-Phenylenediamine	108-45-2	0.01	0.66
☐ Phorate	298-02-2	0.021	4.6
☐ Phthalic acid[1]	100-21-0	0.055	28
☐ Phthalic anhydride	85-44-9	0.055	28
☐ Physostigmine[1]	57-47-6	0.056	1.4
☐ Physostigmine salicylate[1]	57-64-7	0.056	1.4
☐ Promecarb[1]	2631-37-0	0.056	1.4
☐ Pronamide	23950-58-5	0.093	1.5
☐ Propham[1]	122-42-9	0.056	1.4
☐ Propoxur[1]	114-26-1	0.056	1.4
☐ Prosulfocarb[1]	52888-80-9	0.042	1.4
☐ Pyrene	129-00-0	0.067	8.2
☐ Pyridine	110-86-1	0.014	16

Regulated constituent--common name	CAS No.	Wastewater Standard in mg/L	Non-Wastewater Standard in mg/kg
☐ Safrole	94-59-7	0.081	22
☐ Silvex (2,4,5-TP)	93-72-1	0.72	7.9
☐ 1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
☐ TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
☐ TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
☐ 1,1,1,2-Tetrachloroethane	630-20-6	0.057	6
☐ 1,1,2,2-Tetrachloroethane	79-34-5	0.057	6
☐ Tetrachloroethylene	127-18-4	0.056	6
☐ 2,3,4,6-Tetrachlorophenol	58-90-2	0.03	7.4
☐ Thiodicarb[1]	59669-26-0	0.019	1.4
☐ Thiophanate-methyl[1]	23564-05-8	0.056	1.4
☐ Toluene	108-88-3	0.08	10
☐ Toxaphene	8001-35-2	0.0095	2.6
☐ Triallate[1]	2303-17-5	0.042	1.4
☐ Tribromomethane/Bromoform	75-25-2	0.63	15
☐ 1,2,4-Trichlorobenzene	120-82-1	0.055	19
☐ 1,1,1-Trichloroethane	71-55-6	0.054	6
☐ 1,1,2-Trichloroethane	79-00-5	0.054	6
☐ Trichloroethylene	79-01-6	0.054	6
☐ Trichloromonofluoromethane	75-69-4	0.02	30
☐ 2,4,5-Trichlorophenol	95-95-4	0.18	7.4
☐ 2,4,6-Trichlorophenol	88-06-2	0.035	7.4
☐ 2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	93-76-5	0.72	7.9
☐ 1,2,3-Trichloropropane	96-18-4	0.85	30
☐ 1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
☐ Triethylamine[1]	121-44-8	0.081	1.5
☐ tris-(2,3-Dibromopropyl)phosphate	126-72-7	0.11	0.1
☐ Vernolate[1]	1929-77-7	0.042	1.4
☐ Vinyl chloride	75-01-4	0.27	6
☐ Xylenes-mixed isomers (sum of o-,m-, and p-xylene concentrations)	1330-20-7	0.32	30

Please note on the last page of this attachment that there are two sets of UTS limits for metals.

- Column 4 is to be used for waste being disposed of in states that have not adopted the revised UTS metals limits.
- Column 5 can be used in states that have adopted these new metals standards. These states include Texas, Michigan, and Louisiana.

More information on the metals LDR limits is provided in http://ehs.intranet.dow.com/rmec/GuidanceLinks/ solidwaste.htm Regional

II. Inorganic Constituents:	CAS Number	Wastewater Standard in mg/L	Non-Wastewater Standard for States that have not adopted LDR changes	Non-Wastewater Standard for States that have adopted LDR changes
☐ Antimony	7440-36-0	1.9	2.1 mg/l TCLP	1.15 mg/l TCLP
☐ Arsenic	7440-38-2	1.4	5.0 mg/l TCLP	5.0 mg/l TCLP
☐ Barium	7440-39-3	1.2	7.6 mg/l TCLP	21 mg/l TCLP
☐ Beryllium	7440-41-7	0.82	0.014 mg/l TCLP	1.22 mg/l TCLP
☐ Cadmium	7440-43-9	0.69	0.11 mg/l TCLP	0.11 mg/l TCLP
☐ Chromium (Total)	7440-47-3	2.77	0.6 mg/l TCLP	0.6 mg/l TCLP
☐ Cyanides (Total)	57-12-5	1.2	590 mg/l	590 mg/l
☐ Cyanides (Amenable)	57-12-5	0.86	30mg/l	30mg/l
☐ Fluoride[2]	16984-48-8	35	NA	NA
☐ Lead	7439-92-1	0.69	0.37 mg/l TCLP	0.75 mg/l TCLP
☐ Mercury--Nonwastewater from Retort[1]	7439-97-6	NA	0.20 mg/l TCLP	0.20 mg/l TCLP
☐ Mercury--All Others	7439-97-6	0.15	0.025 mg/l TCLP	0.025 mg/l TCLP
☐ Nickel	7440-02-0	3.98	5.0 mg/l TCLP	11 mg/l TCLP
☐ Selenium[2]	7782-49-2	0.82	0.16 mg/l TCLP	5.7 mg/l TCLP
☐ Silver	7440-22-4	0.43	0.14 mg/l TCLP	0.14 mg/l TCLP
☐ Sulfide[2]	8496-25-8	14	NA	NA
☐ Thallium	7440-28-0	1.4	0.078 mg/l TCLP	0.2 mg/l TCLP
☐ Vanadium[2]	7440-62-2	4.3	0.23 mg/l TCLP	1.6 mg/l TCLP
☐ Zinc[3]	7440-66-6	2.61	4.3 mg/l TCLP	4.3 mg/l TCLP

[1] Not applicable to F039 wastes

[2] Not an underlying hazardous constituent. Only applicable to F039 wastes

[3] Not an underlying hazardous constituent.

EXAMPLE OF LAB PACK CERTIFICATION FORM

APPENDIX IV LAB PACK CERTIFICATION

** For help on using Lab Packs, see guidance from the Main Form, Section D.

Complete this form only if the pack contains waste having at least one RCRA Hazardous Waste Number

Name: _____ Phone _____

Company: _____ EPA ID # _____

Address: _____

_____

The waste identified on the accompanying _____ (name of State) Hazardous Waste Manifest Number _____ (off-site shipments only) is an Appendix IV lab pack containing the following EPA Hazardous waste number(s) and will be incinerated at:

☐ Rotary Kiln Dow Location

☐ Other Company Name and Location _____

_____

_____

☐ This lab pack does not contain any constituents found in 40 CFR Part 268, Appendix IV

Chemical Name	*EPA Hazardous Waste Number*	Quantity & Units

The wastes do not meet the treatment standards specified in 268, Subpart D. The alternate lab pack treatment standards under 268.48(c) will be used. As required by 40 CFR 268.7, the following certification is made:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under Appendix IV to 40 CFR Part 268 and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at 40 CFR 268.42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Authorized signature: _____ Date: _____

Printed or Typed Name: _____ Title: _____

Figure A3-2
Logic Diagram for Disposal of
Hazardous Waste