SECTION D-10

MANAGEMENT OF AIR EMISSIONS

Revision No.
5.0

SECTION D-10

MANAGEMENT OF AIR EMISSIONS

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SECTION D-10

MANAGEMENT OF AIR EMISSIONS

D-10-1 Introduction

This section describes the management of air emissions as required by 40 CFR 264.1030 and ADEM Administrative Code Rule 335-14-5-.27 (Subpart AA); 40 CFR 264.1050 and ADEM Administrative Code Rule 335-14-5-.28 (Subpart BB); and 40 CFR 264.1080 and ADEM Administrative Code Rule 335-14-5-.29 (Subpart CC). The facility implemented the emission standards in December of 1990, which included the Standards for Subpart AA and BB, and in December 1996, which included the Standards for Subpart CC. The 40 CFR regulations will be used in this section since the ADEM Administrative Code Rule references the 40 CFR regulations.

D-10-1a Subpart AA and BB Affected Units

The facility manages waste from different generators, which vary in chemical composition. Although there are numerous storage, treatment and disposal units at the facility, historically there are only four areas of the facility that are or were impacted by Subparts AA and BB of the regulations. These units and their present status are shown in Table D-10.1.

The facility has determined that other storage and treatment units at the facility are exempt from Subparts AA and BB due to either of the following:

- Waste stored is at an organic concentration below the regulatory limit; or
- The units do not store waste in units regulated by Subpart AA and BB (i.e., Tanks units); or
- The waste stored in the tank unit is not subject to RCRA regulations (i.e., PCB waste which is regulated only by the Toxic Substance Control Act (TSCA)).

The exempt units, as well as their exempt status are shown in Table D-10.2.

These units are shown in the Facility Drawing in Figure B-3 of Appendix B-2 of this Application.

The facility will evaluate any proposed units, prior to managing waste, to determine the status of the unit in relation to the RCRA Subpart AA or BB regulations. If any evaluated unit is determined to be subject to RCRA Subpart AA or BB, the unit will be incorporated in the facility's Subpart AA or BB monitoring program, and any necessary permit modifications will be obtained, prior to managing waste in that unit.

The facility will also re-evaluate any existing exempt unit if there is a modification to the unit or the unit commences to manage RCRA waste. If any re-evaluated unit is determined to be subject to RCRA Subpart AA or BB, the unit will be incorporated in the facility's Subpart AA or BB monitoring program, and any necessary permit modifications will be obtained, prior to recommencing waste management in that unit.

D-10-1b Subpart CC Affected Units

The Subpart CC regulations govern the air emissions from containers, tanks and surface impoundments, as well as any miscellaneous units, which manage hazardous waste with a volatile organic concentration which equals or exceeds 500 parts per million by weight (ppmw). Requirements of Subpart CC do not apply to the following waste management units:

- A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after this date;
- A container that has a design capacity less than or equal to 0.1 m^3;
- A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
- A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator begun implementing or completed closure pursuant to an approved closure plan.
- A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v) or 3008(h), CERCLA authorities, or similar Federal or State authorities.
- A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.
- A hazardous waste management unit the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR Part 60, Part 61, or Part 63.
- A tank that has a process vent defined in 40 CFR 264.1031.

The facility manages numerous container and tank storage units, a few miscellaneous units, and no surface impoundments. These units and their present status are summarized in Table D-10.5.

D-10-2 Subpart AA Standards

The Subpart AA standards are applicable to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air and steam stripping operations that manage hazardous waste with 10 ppmw or greater total organic concentration. Although the facility at one point had units subject to Subpart AA at the time of initial monitoring, (units within Tank Farm 1), the facility has since closed the units. Therefore, there are no existing units subject to Subpart AA standards. A more detailed description of the units which were subjected to Subpart AA, which have been closed and removed are in the facility's operating record located at the facility. These units are not considered a part of this Permit Application.

D-10-3 Subpart BB Standards

Subpart BB standards address organic air emissions for equipment leaks at hazardous waste Treatment, Storage and Disposal Facilities (TSDFs), which contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight (40 CFR 264.1050(b)). These standards apply to pumps, pressure relief devices, sampling connecting systems, open-ended valves or lines, valves, and connectors. In addition, this subpart provides the requirements for identifying, monitoring, and recordkeeping relative to these potential air emission points. The units subjected to this Subpart are:

- Unit 520: includes applicable equipment to Tank 520
- Unit 700: includes applicable equipment to Drum pumping station
- Unit 604: includes applicable equipment to the drum pumping station

Within the affected units, there are pumps, valves, pressure relief devices, and connectors which are subject to the regulations. Certain components of these items might be in gas or vapor service. Those items not in gas or vapor service are in either light liquid service or in heavy liquid service. The distinction between light and heavy service is as follows:

a. Light Liquid Service: The fluid is a liquid at operating conditions, and the vapor pressure of one or more of the components in the stream is greater than 0.3 kilopascals (kPa) at 20°C. The total concentration of pure components having a vapor pressure greater than 0.3 kPa at 20°C is equal to, or greater than, 20 percent by weight.

b. Heavy Liquid Service: The fluid is a liquid at operating conditions and not in gas/vapor service or in light liquid service.

By definition, the components in the existing affected areas at this facility that are subject to Subpart BB are in light liquid service. Gas/Vapor service had been associated with the units in Tank Farm 1, specifically the thin film evaporator units. However, these units have been closed and removed.

The items, which are regulated by Subpart BB, are summarized in Table D-10.3. Table D-10.3 also summarizes the detectable limit (above background) for determining if a component is leaking and the required monitoring frequency.

D-10-3a Regulated Unit Descriptions

D-10-3a(1) Unit 520

Unit 520 is located just south of Unit 603 at the Facility. Unit 520 consists of one (1) tank and one (1) associated bulk container storage and loading/unloading station. The primary function of Unit 520 is to enable the blending, mixing and/or bulking of organic waste liquids for the loading and subsequent transfer off-site for solvent recovery, energy recovery, incineration or other appropriate treatment. Although the tank is exempt from Subpart BB regulations, the valves; pumps, connectors and other ancillary equipment that are in liquid service are regulated by Subpart BB of 40 CFR 264.1050(a) and (b). Additional information on Unit 520 is provided in Section D-2 of this Permit Application.

D-10-3a(2) Unit 700

Unit 700 is located at the northern end of the active facility. The northern end of Unit 700 contains processes that are subject to Subpart BB requirements. These include container pumping stations and the organic container and tanker loading stations. Additional information on Unit 700 is provided in Section D-1 of this Permit Application.

D-10-3a(3) Unit 604

Unit 604 is located east of Unit 600. Unit 604 primarily is used as a container management unit. However, within the southeast corner of the container processing area, there is a decanting station for processing and decanting of waste stored in Unit 604. Decanted liquid wastes from this area may be directed through pipelines to tanker trucks located in the Loading/Unloading Stations at Unit 520 and Unit 603 or may be directed through pipelines to Tanks T-634, T-635, or T-636. Additional information on Unit 604 is provided in Section D-1 of this Permit Application.

D-10-3b Compliance with Equipment Leak Standards

40 CFR 264.1064 requires that the facility maintain certain records and documentation that demonstrate that the facility complies with the Subpart BB regulations. Actual documents and methods used to demonstrate compliance are maintained at the facility. In general, the types of recordkeeping requirements are as follows:

- Equipment specific identification information (40 CFR 264.1064(b))
- Marking of leaking equipment (40 CFR 264.1064(c))
- Information on leaking equipment (40 CFR 264.1064(d))
- Closed-vent system and control device information (40 CFR 264.1064(e))
- Information on equipment not subject to monthly LDAR (40 CFR 264.1064(g))
- Barrier fluid system sensor information (40 CFR 264.1064(j))
- Information for determining exemptions (40 CFR 264.1064(k))
- Retain record for three years for (40 CFR 264.1064(l)):
    - Monthly leak monitoring and repair
    - Detectable emission monitoring
    - Closed vent and control device operations
- Other records in the facility operating record must be kept for the life of the facility

D-10-3c Physical Leak Detection and Repair (LDAR) Survey

This section addresses the methods and procedures used to locate, identify, mark, and monitor specific equipment that might be regulated by Subpart BB. These methods provide a systematic approach to leak detection and repair (LDAR) and utilize certain unique conventions to identify and mark potential points of emission. As required by 40 CFR 264.1064, each piece of equipment to which Subpart BB applies was identified and marked with a unique identifier which provided the following:

a. type of equipment;

b. area location identifier;

c. type of service (i.e., liquid or gas);

d. discrete equipment number.

A more detailed explanation of the identification and marking system is maintained at the facility with the LDAR monitoring program files.

D-10-4 Existing Equipment

This section presents the existing equipment at the facility which will be subject to Subpart BB regulations.

Since the inception of the LDAR program at the facility, in December 1990, the facility has undergone major changes through closure of units and modification of other units. Due to the changes, many of the original LDAR equipment have been eliminated from the baseline program. Therefore, the facility has compiled the existing equipment that is currently subject to the Subpart BB regulations. This equipment is summarized in Table D-10.4. The identifying number and general location of each of the affected equipment is listed in Table D-10.4. Specific locations of equipment are indicated by the grid numbers identified on the table, which correspond to detailed drawings available in the Facility's Operating Record. Portable pumps are identified by a unique number, but given their portability, no specific location is provided.

Equipment changes, deletions or additions, (i.e. flanges, valves, pumps, etc.) may be necessary at times to replace damaged or inoperable equipment. The facility will notify the agency of any changes to the equipment listed in Table D-10.4 on a periodic basis.

D-10-5 Reporting Requirements

The facility will submit a semi-annual report to the agency as required in 40 CFR 264.1065.

If, during the semi-annual reporting period, leaks from valves, pumps, and compressors are repaired as required in 40 CFR 264.1057(d), 264.1052(c) and (d)(6), and 264.1053(g), respectively, and the control device does not exceed or operate outside of the design specifications as defined in 40 CFR 264.1064(e) for more than 24 hours, the above-mentioned report to the agency is not required.

D-10-6 Specific Part B Information Requirements

Specific information for equipment applicable to Subpart BB requirements as required by 40 CFR 270.25 and ADEM Administrative Code Rule 335-14-8-.02(16) is as follows:

a. The following information is provided in Table D-10.4 :

    1. Equipment Identification number and hazardous waste management unit identification.

    2. Approximate locations within the facility;

3. Type of equipment;

4. Percent by weight total organics in the hazardous waste stream at the equipment;

5. Hazardous waste state at the equipment (e.g., gas/vapor or liquid); and

6. Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").

b. There are no closed vent systems or control devices associated with the Subpart BB equipment leaks, therefore, there are no implementation schedules.

c. There are no control devices associated with the Subpart BB equipment leaks, therefore, there are no performance test plans.

d. Documentation that demonstrates compliance with equipment standards in 40 CFR 264.1052 to 264.1059 is included in Tables D-10.3 and D-10.4 of this section.

e. There are no closed vent systems or control devices associated with the Subpart BB equipment leaks, therefore, the documentation to demonstrate compliance with 40 CFR 264.160 is not necessary.

D-10-7 Subpart CC General Standards

The Subpart CC standards are applicable to containers, tanks and surface impoundments. The permittee shall control air pollutant emissions from each waste management unit in accordance with standards specified in 40 CFR 264.1084 through 40 CFR 264.1087 as applicable to the waste management unit, except that the unit is exempt from the standards provided that the waste management unit is one of the following:

- A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average volatile organic concentration at the point of waste origination of less than 500 ppmw, as determined by the procedures specified in 40 CFR 264.1083(a).
- A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves on the conditions outlined in 40 CFR 264.1082(c)(2).
- A tank used for biological treatment of hazardous waste in accordance with the requirements in 40 CFR 264.1082(c)(2)(iv).
- A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

i. meets the numerical concentration limits for organic constituents, applicable to the hazardous waste, as specified in 40 CFR part 268-Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste" in 40 CFR 268.40; or

ii. has been treated by the treatment technology established by EPA for the waste in 40 CFR 268.42(a), or treated by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).

- A tank used for bulk feed of hazardous waste to a waste incinerator and all of conditions in 40 CFR 264.1082(5) are met.

A summary of the Facility units and their subjectivity to the requirements of Subpart CC are noted in Table D-10.5. Proposed units will be evaluated for Subpart CC control requirements prior to waste management in the unit.

For each unit that is "EXEMPT" as noted in Table D-10.5, documentation, certifications, analytical data, and/or other calculations which support each exemption is provided in Appendix D-10-1.

For each unit listed in Table D-10.5 for which a control option has been specified, the following applicable information and certifications, required by 40 CFR 270.27, are provided in the noted locations of this Application.

Citing	Description	Application Location
270.27(2)	Identification of each container area subject to the requirements of 40 CFR Part 264, Subpart CC and certification by the owner or operator that the requirements of this subpart are met.	Table D-10.5
270.27(5)	Documentation for each closed-vent system and control device installed in accordance with the requirements of 40 CFR 264.1087 that includes design and performance information as specified in 40 CFR 270.24(c) and (d).	Appendix D-10-1
270.27(6)	An Emission monitoring plan for both Method 21 in 40 CFR Part 60, Appendix A and control device monitoring methods.	Section F

The facility does not currently have:

- tanks designed with floating roofs;
- enclosures used for tank and container volatile organic emission controls;
- surface impoundments; or
- units subject to Subpart CC controls, but cannot comply with the requirements by the permit issuance date.

Therefore, the information required under 40 CFR 270.27 (1), (3), (4) and (7) are not applicable.

The Facility has reviewed the current waste analysis plan and has determined that no modification to the plan is needed to further ensure compliance with 40 CFR, Subpart CC.

D-10-7a Tank Standards

The level of air pollutant emission controls from tanks are dependent on the type of tank, the type of hazardous waste managed in the tank, and the type of hazardous waste activity that is conducted in the tank. Controls are defined as Tank Level 1 and Tank Level 2 controls.

D-10-7a(1) Tank Level 1

D-10-7a(1)a Applicability

Tank Level 1 controls can be utilized under the following conditions as defined in 40 CFR 264.1084(b)(1):

1. The hazardous waste in the tank has a maximum organic vapor pressure that is less than the limit for the following tank's design capacity:

Design Capacity (m^3)	Max. Organic Vapor Pressure (kPa)
151 or greater	5.2
75 or greater, and less than 151	27.6
less than 75	76.6

2. The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined in item 1.

3. The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process defined in 40 CFR 265.1081.

The facility utilizes Tank Level 1 controls at various units. These units are identified in Table D-10.5.

D-10-7a(1)b Controls

Controls of air pollutant emissions using Tank Level 1 controls will meet the requirements as defined in 40 CFR 264.1084(c). A summary is listed as follows:

1. The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures defined in 40 CFR 264.1083(c). Thereafter the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that will equal or exceed the maximum organic vapor pressure for the tank design capacity.
2. The tank will be equipped with a fixed roof designed to meet the following:
    a. The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank.
    b. The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between the roof section joints or between the interface of the roof edge and the tank wall.
    c. Each opening in the fixed roof shall be either:
        i. Equipped with a closure device designed to operate such that when the closure devise is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or
        ii. Connected by a closed-vent system that is vented to a control device.
    d. The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life.

3. Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

   a. To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations;

   b. To remove accumulated sludge or other residues from the bottom of the tank;

   c. Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications;

   d. Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

D-10-7a(1)c Inspections and Repairs

The facility will inspect and repair Tank Level 1 controls in accordance with the requirements specified in 40 CFR 264.1084(c)(4) and outlined in the Facility's Inspection Plan in Section F of this Application.

1. The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions.
2. The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to the requirements. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions describe in 40 CFR 264.1084(1).
3. In the event a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of 40 CFR 264.1084(k).
4. The owner or operator shall maintain a record of the inspections in accordance with the requirements specified in 40 CFR 264.1089(b).

<u>**D-10-7a(2) Tank Level 2**</u>

D-10-7a(2)a Applicability

Tank Level 2 controls must be applied to all tanks subject to 40 CFR, Subpart CC that do not meet the requirements of Tank Level 1. The facility is not currently operating any Level 2 tanks; therefore, this section is not applicable.

D-10-7b Surface Impoundment Standards

The facility does not utilize any surface impoundments for hazardous waste management; therefore, this section is not applicable.

D-10-7c General Container Standards

D-10-7c(1) Applicability

The facility shall control air pollutant emissions for each container subject to 40 CFR, Subpart CC in accordance with 40 CFR 264.1086(b) and summarized as follows:

Container Design Capacity (m^3)	Waste Type / Treatment Method	Container Level Standard
Greater than 0.1, less than 0.46	None	1
Greater than 0.46	Not In Light Material Service	1
Greater than 0.46	In Light Material Service	2
Greater than 0.1	Used For Stabilization	3

"Light Material Service" and "Stabilization" are defined in 40 CFR 265.1081.

D-10-7c(2) Container Level 1 Standards

The facility shall comply with the Container Level 1 Standards, where appropriate, as defined in 40 CFR 264.1086(c). The following sections summarize the Container Level 1 Standards.

D-10-7c(2)a Controls

A container using Container Level 1 controls is defined in 40 CFR 264.1086(c)(1) and summarized as follows:

- A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in 40 CFR 264.1086(f).
- A container equipped with a cover and closure devices that forms a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps or other open spaces into the interior of the container.

- An open top container in which an organic vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere.

D-10-7c(2)b Material Compatibility

A container used to meet the requirements of a non-DOT container, shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service.

D-10-7c(2)c Operation

Whenever hazardous waste is in a container using Container Level 1 controls, the facility shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

1. Whenever adding hazardous waste or other material;
    a. During continuous filling operation of the container to its final level, the cover and closure devices shall be secured in place upon conclusion of the filling operation;
    b. During batch filling operation the cover and closure devices shall be secured in place whenever any of the following occur first:
        i. The container is filled to its final level;
        ii. Completion of the batch filling in which no additional material will be added to the container within 15 minutes;
        iii. The person performing the loading operation leaves the vicinity of the container;
        iv. The process generating the material being added to the container ceases.
2. Whenever removing hazardous waste from the container;
    a. An empty container as defined in 40 CFR 261.7(b) may be opened to the atmosphere at any time;
    b. When discrete quantities or batches of material are removed from the container and the container is not empty per 40 CFR 261.7(b), the cover and closure devices shall be secured in place whenever the following occur first:
        i. upon completion of the batch removal and no additional material will be removed within 15 minutes;

ii. the person performing the unloading operation leaves the immediate vicinity of the container.

3. Whenever access to the inside of the container is needed to perform routine activities other than transfer of hazardous waste;

4. Whenever a pressure relief type device, which vents to the atmosphere, is allowed to open during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications.

5. Whenever a safety device, as defined in 40 CFR 265.1081, opens to avoid an unsafe condition.

D-10-7c(2)d Inspection and Repair

The facility will inspect and repair the containers, covers and closure devices in accordance with the requirements specified in 40 CFR 264.1086(c)(4), outlined in the Facility's Inspection Plan in Section F of this Application.

D-10-7c(3) Container Level 2 Standards

The facility shall comply with the Container Level 2 Standards, where appropriate, as defined in 40 CFR 264.1086(d). The following sections summarize the Container Level 2 Standards.

D-10-7c(3)a Controls

A container using Container Level 2 controls is defined in 40 CFR 264.1086(d)(1) and summarized as follows:

- A container that meets the applicable U .S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in 40 CFR 264.1086(f).
- A container that operates with no detectable organic emission as defined in 40 CFR 265.1081 and determined in accordance with the procedures specified in 40 CFR 264.1086(g).
- A container that has been demonstrated within the preceding 12 months to be vapor tight by using 40 CFR Part 60, Appendix A, Method 27 in accordance with the procedure specified in 40 CFR 264.1086(h).

D-10-7c(3)b Operations

The facility will transfer hazardous waste in or out of a container, using Container Level 2 controls, in such a manner as to minimize the exposure of hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices.

Whenever a hazardous waste is in a container using Container Level 2 controls, the facility shall install, secure and maintain all covers and closure devices for the container in a closed position except as follows:

1. Whenever adding hazardous waste or other material;
    a. During continuous filling operation of the container to its final level, the cover and closure devices shall be secured in place upon conclusion of the filling operation;
    b. During Batch filling operation the cover and closure devices shall be secured in place whenever any of the following occur first:
        i. The container is filled to its final level;
        ii. Completion of the batch filling in which no additional material will be added to the container within 15 minutes;
        iii. The person performing the loading operation leaves the vicinity of the container;
        iv. The process generating the material being added to the container is ceases.
2. Whenever removing hazardous waste from the container;
    a. An empty container as defined in 40 CFR 261.7(b) may be opened to the atmosphere at any time;
    b. When discrete quantities or batches of material are removed from the container and the container is not empty per 40 CFR 261.7 (b), the cover and closure devices shall be secured in place whenever the following occur first:
        i. Upon completion of the batch removal and no additional material will be removed within 15 minutes;
        ii. The person performing the unloading operation leaves the immediate vicinity of the container.
3. Whenever access to the inside of the container is needed to perform routine activities other than transfer of hazardous waste;
4. Whenever a pressure relief type device, which vents to the atmosphere, is allowed to open during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications.
5. Whenever a safety device, as defined in 40 CFR 265.1081, opens to avoid an unsafe condition.

D-10-7c(3)c Inspection, Monitoring and Repair

The facility will inspect, monitor and repair containers, covers and closure devices in accordance with the requirements specified in 40 CFR 264.1084(d)(4), outlined in the Facility's Inspection Plan in Section F of this Application.

<u>D-10-7c(4) Container Level 3 Standards</u>

Presently, the facility does not utilize any Container Level 3 controls; therefore, the standards for Container Level 3 controls are not applicable to the facility and are not presented at this time.

D-10-7d Closed-Vent System and Control Devices

The facility will install and maintain closed-vent systems and control devices, where applicable, according to the standards outlined in 40 CFR 264.1087. Currently, the facility does not utilize any closed-vent system and control devices; therefore, the standards for closed-vent system and control devices are not applicable to the facility and are not presented at this time.

[End of Section D-10 Text]

SECTION D-10

MANAGEMENT OF AIR EMISSIONS

TABLES

TABLE D-10.1

RCRA 40 CFR SUBPART BB NON-EXEMPT UNITS

Unit	Status
Unit 520 (Tank Farm 1)	Closed, except for Tank T-520
Unit 700 (Drum pumping station)	Existing
Unit 604 (Drum pumping station)	Existing

TABLE D-10.2

RCRA 40 CFR SUBPART BB EXEMPT UNITS

Unit	Description	Status
Unit 600	PCB Container and Tank Storage	3
Unit 602	Container Storage	2
Unit 603	Container Storage	2
Unit 700	Container Storage	2
Unit 702	Container Storage	2
Unit 703	Container Management	4
Unit 406	Container Storage	2
Unit 900	Truck Wash	1
Unit 908	Laboratory Tank	1
Unit 1400	Leachate Storage Tanks	1
Unit 1200A	Stabilization and Container Storage	2
Unit 2000	Stabilization and Container Storage	2
Unit 2200	Container Storage	2
Unit 1700B & C	Leachate Storage Tanks	1
Unit 1700A and Pipe Chase	Leachate Storage Tank	1

1 Waste has been monitored and has never contained 10% or greater organic concentration.

2 Unit does not contain one of the following regulated pieces of equipment: pumps, compressor, pressure relief devices, sampling connection, open-ended valves or lines; or valves.

3 Unit only handles non-RCRA waste.

4 Regulated equipment has been removed or decommissioned.

TABLE D-10.3

RCRA 40 CFR SUBPART BB

MONITORING FREQUENCY AND DETECTION LIMITS

Regulated Items	Detection limit	Monitoring Frequency	Inspection
I. Light Liquid Service			
Pumps	10,000	Monthly	Weekly
Valves	10,000	Monthly*	---
Pressure-relief	10,000	(b)	(c)
Flanges/connectors	10,000	(b)	---
Sampling systems	500	(a)	---
Open-ended lines	500	(a)	---
II. Heavy Liquid Service			
Pumps	10,000	(b)	---
Valves	10,000	(b)	---
Pressure-relief	10,000	(b)	---
Flanges/connectors	10,000	(b)	---
III. Gas/Vapor Service(1)			
Valves	10,000	Monthly*	---
Pressure-relief	500	(b)	---
Flanges/connectors	500	(b)	---
Sampling systems	500	(a)	---
Open-ended lines	500	(a)	---

Notes:

* Alternate monitoring frequency is allowed as provided in 40 CFR 264.1057(c) and in 40 CFR 264.1061 and 264.1062.

(a) Specific requirements are provided in 40 CFR 264.1055 and 264.1057.

(b) Monitor within 5 days if evidence of a potential leak is found.

(c) Monitor within 5 days after each pressure release.

(1) Gas/Vapor Service only pertained to the tanks in Tank Farm 1 (Unit 500). These tanks were decommissioned and the Unit clean closed in April 1995. There are no other tanks in Gas/Vapor service currently in use at the facility.

TABLE D-10.4
RCRA Subpart BB - Equipment Leak Information
Chemical Waste Management, Inc.
Emelle, Alabama Facility

EQUIPMENT IDENTIFICATION NUMBER[1]				UNIT and LOCATION			METHOD of COMPLIANCE		Percent by Weight Total Organics
Equipment Type [2]	Equipment Number	Service[3]	Monitor Number	Area[4]	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	
PH	0520	L	0001	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0002	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0003	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0004	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0005	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0006	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0007	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0008	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0009	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0010	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0011	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0012	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0031	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0032	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0033	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0034	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0035	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0036	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0037	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0038	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0039	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0040	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0041	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0042	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0043	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0044	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0045	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0046	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0047	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0048	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0049	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0050	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0051	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0052	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0053	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0054	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0055	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0056	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0057	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0058	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0059	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0001	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0002	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0003	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0004	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0005	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0006	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0007	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0008	0500	0500-090-001	H6	See Note 6	10,000	15-35

TABLE D-10.4
RCRA Subpart BB - Equipment Leak Information
Chemical Waste Management, Inc.
Emelle, Alabama Facility

EQUIPMENT IDENTIFICATION NUMBER[1]				UNIT and LOCATION			METHOD of COMPLIANCE		Percent by Weight Total Organics
Equipment Type [2]	Equipment Number	Service[3]	Monitor Number	Area[4]	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	
PU	0520	L	0009	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0010	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0011	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0012	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0013	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0014	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0015	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0016	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0017	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0018	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0019	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0020	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0021	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0022	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0023	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0024	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0025	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0026	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0027	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0028	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0029	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0030	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0031	0500	0500-090-001	H6	See Note 6	10,000	15-35
TK	0520	L	0001	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0002	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0003	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0004	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0005	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0006	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0007	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0008	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0009	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0010	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0011	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0012	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0013	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0014	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0015	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0016	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0017	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0018	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0019	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0020	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0021	0500	0500-090-001	G6	See Note 6	10,000	15-35
PH	0604	L	0001	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0002	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0003	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0004	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0005	0604	0600-090-001	F2	See Note 6	10,000	15-35

TABLE D-10.4
RCRA Subpart BB - Equipment Leak Information
Chemical Waste Management, Inc.
Emelle, Alabama Facility

EQUIPMENT IDENTIFICATION NUMBER[1]				UNIT and LOCATION			METHOD of COMPLIANCE		Percent by Weight Total Organics
Equipment Type [2]	Equipment Number	Service[3]	Monitor Number	Area[4]	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	
PH	0604	L	0006	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0007	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0008	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0009	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0010	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0011	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0012	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0013	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0014	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0015	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0016	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0017	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0018	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0019	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0020	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0021	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0022	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0023	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0024	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0025	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0026	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0027	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0028	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0029	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0030	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0031	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0032	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0033	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0034	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0035	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0036	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0037	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0038	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0039	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0040	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0041	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0042	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0043	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0044	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0045	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0046	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0047	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0048	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0049	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0050	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0051	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0052	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0053	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0054	0604	0600-090-001	F2	See Note 6	10,000	15-35

TABLE D-10.4
RCRA Subpart BB - Equipment Leak Information
Chemical Waste Management, Inc.
Emelle, Alabama Facility

EQUIPMENT IDENTIFICATION NUMBER[1]				UNIT and LOCATION			METHOD of COMPLIANCE		Percent by Weight Total Organics
Equipment Type [2]	Equipment Number	Service[3]	Monitor Number	Area[4]	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	
PH	0604	L	0055	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0056	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0057	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0058	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0059	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0060	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0061	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0062	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0063	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0064	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0065	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0001	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0002	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0003	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0004	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0005	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0006	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0007	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0008	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0009	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0700	L	0001	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0002	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0003	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0004	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0005	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0006	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0007	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0008	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0009	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0010	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0011	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0012	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0013	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0014	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0015	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0016	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0017	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0018	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0019	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0020	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0021	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0022	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0023	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0024	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0025	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0026	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0027	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0028	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0029	0700	0700-090-001	C4	See Note 6	10,000	15-35

TABLE D-10.4
RCRA Subpart BB - Equipment Leak Information
Chemical Waste Management, Inc.
Emelle, Alabama Facility

EQUIPMENT IDENTIFICATION NUMBER[1]				UNIT and LOCATION			METHOD of COMPLIANCE		Percent by Weight Total Organics
Equipment Type [2]	Equipment Number	Service[3]	Monitor Number	Area[4]	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	
PH	0700	L	0030	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0031	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0032	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0033	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0034	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0035	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0036	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0037	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0038	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0039	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0040	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0041	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0042	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0043	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0044	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0045	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0046	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0047	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0048	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0049	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0050	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0051	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0052	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0053	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0054	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0001	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0002	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0003	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0004	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0005	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0006	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0007	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0008	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0009	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0010	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0011	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0012	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0013	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0014	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0015	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0016	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0017	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0018	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0019	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0020	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0021	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0022	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0023	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0024	0700	0700-090-001	C4	See Note 6	10,000	15-35

TABLE D-10.4
RCRA Subpart BB - Equipment Leak Information
Chemical Waste Management, Inc.
Emelle, Alabama Facility

EQUIPMENT IDENTIFICATION NUMBER[1]				UNIT and LOCATION			METHOD of COMPLIANCE		Percent by Weight Total Organics
Equipment Type [2]	Equipment Number	Service[3]	Monitor Number	Area[4]	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	
PU	0700	L	0025	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0026	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0027	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0028	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0029	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0030	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0031	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0032	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0033	0700	0700-090-001	C4	See Note 6	10,000	15-35

Notes:

1. Equipment Identification Number is designated as follows: Equipment Type-Equipment Number-Service-Monitor Number (e.g., TK-722-L-001).
2. All Equipment Types other than pumps (PU) are valves, flanges, unions or other such assemblies in pipelines, or on tanks or equipment.
   Equipment Types are designated as follows: LD - Loading/Unloading Station; PH - Piping/Pipe Header; PU - Pump; TK - Tank or other Vessel.
3. Service indicates the state of the hazardous waste at the equipment as follows: L - Light or Heavy Liquid; and V - Vapor or Gas, as defined in ADEM Administrative Code Rule 335-14-5-.28(2) and 40 CFR 264.1051.
4. Area 0500 is designated as Unit 520, Loading/Unloading Station No. 1, and Loading/Unloading Station No. 3.
   Area 0600 is designated as Unit 600, and Unit 604 Decanting Station.
   Area 0700 is designated as Unit 700 (Decanting and Crusher Dispersion System), and Unit 703 including the Loading/Unloading Station.
   The lack of a UNIT and LOCATION (Area, Drwg. No., and Grid) indicates equipment (primarily pumps) that are frequently relocated.
5. All equipment is assumed to contain or contact hazardous waste which meets the minimum standards of ADEM Administrative Code Rule 335-14-5-.28(1) and 40 CFR 265.1050(b).
6. Monitoring Frequencies are in accordance with the requirements of ADEM Administrative Code Rules 335-14-5-.28(8) and (13), and 40 CFR 254.1057 and 264.1062.

Table D-10.5
RCRA Subpart CC - Status and Control Summary
Chemical Waste Managment, Inc.
Emelle, Alabama Facility

Unit Name	Unit Type	40 CFR 264 Subpart CC Status	40 CFR 264 Subpart CC Control Option	Operational Status
T-520	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)][1]	[40 CFR 264.1084(c)]	Active
T-634	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active (TSCA waste only)
T-635	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active (TSCA waste only)
T-636	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active (Non-hazardous product only)
T-725	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active
T-901	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-902	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-903	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-904	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-1201A	Tank	Exempt [40 CFR 264.1082(c)(4)]	NA	Active
T-1202A	Tank	Exempt [40 CFR 264.1082(c)(4)]	NA	Active
T-1405	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1406	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1407	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1408	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1409	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1410	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1411	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1412	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1413	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1414	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1415	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1416	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1417	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1418	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1419	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active

Table D-10.5
RCRA Subpart CC - Status and Control Summary
Chemical Waste Managment, Inc.
Emelle, Alabama Facility

Unit Name	Unit Type	40 CFR 264 Subpart CC Status	40 CFR 264 Subpart CC Control Option	Operational Status
T-1420	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-A	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active
T-1701	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
T-1702	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
T-1703	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
T-1704	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
Unit 406	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 520	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 600	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 602	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 603	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 604	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active

Table D-10.5
RCRA Subpart CC - Status and Control Summary
Chemical Waste Managment, Inc.
Emelle, Alabama Facility

Unit Name	Unit Type	40 CFR 264 Subpart CC Status	40 CFR 264 Subpart CC Control Option	Operational Status
Unit 700	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 700	Miscellaneous Unit(s)[2]	NA	NA	Tipper hopper not managing Subpart CC waste; CDU not active
Unit 702	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 703A	Container Unit[2]	NA	NA	Active
Unit 1200A	Container Unit[2] (Stabilization Unit)	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 1200A	Miscellaneous Unit(s)[2]	Exempt [40 CFR 264.1082(c)(4)]	NA	Active
Unit 2000	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 2001	Leachate Treatment Plant	NA	NA	Active
Unit 2200	Container Unit[2]	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active

Notes:

[1] Tank T-520 meets the requirements as defined in 40 CFR 264.1084(c); however, Tank T-520 has voluntary Level 2 controls.

[2] Waste identified by generator knowledge as non-subpart CC waste may be handled in any container or miscellaneous unit, without subpart CC controls.

APPENDIX D-10-1

SECTION D-10

RCRA 40 CFR SUBPART CC

DOCUMENTATION, CERTIFICATION, ANALYTICAL DATA, AND CALCULATIONS

Revision No.
5.0

Waste Management℠

Highway 17, Milemarker 163
PO Box 55
Emelle, Alabama 35459

Phone 800 652 5755
Fax 205 652 8289

JUN - 4 1998

May 27, 1998

Terra First, Inc.
P. O. Box 1259
Vernon, AL 35592

Dear Sir/Madam:

Pursuant to 40 CFR 265.1087(c)(5), Waste Management at Emelle (WM-Emelle) is required to maintain a copy of a procedure to ensure that "Light Material Service" hazardous waste, subject to Subpart CC of the RCRA regulations which is transported into and from the WM-Emelle Facility in containers greater than $0.46m^3$ (119 gallons), meets the Container Level 2 controls defined in 40CFR 265.1087(d)(1). As part of this procedure, WM-Emelle is requiring a certification from you stating that all your company containers greater than $0.46m^3$ (119 gallons), that are used for transporting "Light Material Service" hazardous waste for WM-Emelle, meet the requirements of 40 CFR 265.1087 (d)(1).

Please sign below to acknowledge your compliance with this regulation and return a copy to WM-Emelle for our files.

Rodger Hansen

I understand the requirements for shipping "Light Material Service" hazardous waste subject to Subpart CC regulations. I certify that all **Terra First, Inc.** containers greater than $0.46m^3$ (119 gallons), transporting such waste into and from the WM-Emelle, are in compliance with controls specified in 40CFR 265.1087(d)(1).

Diane M. Cordar
Printed Name and Title Safety Manager

Diane M. Cordar
Signature

6-4-98
Date

c:\msoffice\winword\rodger\transreg.doc 05/27/98

Printed on recycled paper

Waste Management℠

Highway 17, Milemarker 163
P.O. Box 55
Emelle, Alabama 35459

Phone 800 652 5755
Fax 205 652 8289

May 27, 1998

CEI
P. O. Box 69
Walker, LA 70785

Dear Sir/Madam:

Pursuant to 40 CFR 265.1087(c)(5), Waste Management at Emelle (WM-Emelle) is required to maintain a copy of a procedure to ensure that "Light Material Service" hazardous waste, subject to Subpart CC of the RCRA regulations which is transported into and from the WM-Emelle Facility in containers greater than $0.46m^3$ (119 gallons), meets the Container Level 2 controls defined in 40CFR 265.1087(d)(1). As part of this procedure, WM-Emelle is requiring a certification from you stating that all your company containers greater than $0.46m^3$ (119 gallons), that are used for transporting "Light Material Service" hazardous waste for WM-Emelle, meet the requirements of 40 CFR 265.1087 (d)(1).

Please sign below to acknowledge your compliance with this regulation and return a copy to WM-Emelle for our files.

Rodger Henson

I understand the requirements for shipping "Light Material Service" hazardous waste subject to Subpart CC regulations. I certify that all <u>CEI</u> containers greater than $0.46m^3$ (119 gallons), transporting such waste into and from the WM-Emelle, are in compliance with controls specified in 40CFR 265.1087(d)(1).

J.J. Barnes Compliance Cordinator
Printed Name and Title

J.J. Barnes
Signature

6-8-98
Date

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Printed on recycled paper

CERTIFICATION

RCRA 40 CFR Subpart CC
Exempt Status Pursuant To
40 CFR 264.1082(c)(4)

The following units only receive hazardous waste material for treatment that meets the requirements stated in 40 CFR 264.1082(c)(4). These units may manage Subpart CC waste for transfer only, without the specified Subpart CC controls.

- Tank T-1201A
- Tank T-1200B

All Containers and Miscellaneous Units may receive hazardous waste material for treatment or storage that meets the requirements stated in 40 CFR 264.1082(c)(4). Documentation of the exemption from Subpart CC controls will be based on the Waste Profile records, manifests and LDR records.

Rodger Henson (signature) — 11/24/97

Rodger Henson, Division President — Date

CERTIFICATION
of
Compliance With CAA Rules

The following units are exempt for 40 CFR Subpart CC regulations pursuant to 40 CFR 264.1080(b)(7), in which the owner or operator certifies that they are equipped with and operating air emission controls with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61 , of part 63.

Unit	Documentation
Tank T-520	See attached certification

Certification of Compliance With CAA Rules
Chemical Waste Management, Inc.
Emelle, Alabama Facility
EPA ID No. ALD 000 622 464

I certify that the Tank Unit T-520 is equipped with and operating air emission controls in accordance with the requirements of 40 CFR Part 60, Subpart Kb.

[signature]
Len Necaise, General Manager

December 6, 1996
Date

ccKbcmpl.doc

DOCUMENTATION

Units Managing Non-Hazardous Waste

The following units manage non-hazardous waste. Documentation is provided in the form of Waste Profile Summary sheets or MSDS sheets for products materials.

Unit	Documentation
T-634	Waste Profile Sheet PTA-AI8533
T-635	Waste Profile Sheet PTA-AI8533
T-636	MSDS Sheet G-525
T-725	Waste Profile Sheet EME-000227
T-901	Waste Profile Sheet EME-000252
T-902	Waste Profile Sheet EME-000252
T-903	Waste Profile Sheet EME-000252
T-904	Waste Profile Sheet EME-000252

Report: R7008
DATE: 11/21/97

CHEMICAL WASTE MANAGEMENT, INC.
WASTE PROFILE SUMMARY

Version 06.02
PTA-AIR533
SELLING REGION LAB - MRL

BUSINESS: CHEMICAL WASTE MGMT INC
DEPT.....: ..
ADDRESS 1: HWY 17 N MI MARKER 163
ADDRESS 2: PO BOX 55
CITY/ST..: EMELLE AL 35459-0055
CONTACT..: SARA GOULD

NUMBER........: 105-6-754
PHONE.........: 205/652-8089
EXPIRES.......: 03/17/98
STATUS........: APPR FOR SERV
FEDERAL EPA ID: ALD000622464
STATE EPA ID..: 99901
EPA STATUS....: UNDETERMINABL
SALES OFFICE..: HOU

WASTE NAME: PCB OIL/FLUSH > 500 PPM
PROCESS GENERATING WASTE: DRAINING AND FLUSHING OF ELECTRICAL EQUIPMENT
SHIP. NAME: RQ, POLYCHLORINATED BIPHENYLS MIXTURE
ADDL. DESC:

TANKS T-634
T-635

CHEMICAL COMPOSITION	MIN	- MAX	UNIT DESCRIPTION
TRANSFORMER OIL	15	50	%
DIESEL FUEL, OILS	15	50	%
PCB	0	30	%
WATER	0	68	%
1,2,4-TRICHLOROBENZENE	0	5	%

METALS	TCA OR TOTAL		
Arsenic as As	<	50	ppm
Barium as Ba	<	100	ppm
Cadmium as Cd	<	100	ppm
Chromium tot Cr	<	100	ppm
Lead as Pb	<	100	ppm
Mercury as Hg	<	0.2	ppm
Antimony	<	100	ppm
Beryllium	<	50	ppm
Chromium Hex	<	500	mg/l
Nickel as Ni	<	100	ppm
Potassium	<	1000	ppm
Sodium	<	1050	ppm
Thallium as Tl	<	100	ppm
Vanadium	<	100	ppm
Selenium as Se	<	100	mg/l
Silver as Ag	<	100	ppm

PHYSICAL CHARACTERISTICS

Physical State...: Liquid
Flash Point......: 140 - 200 CL
pH...............: 05.0 - 09.0
Color............: BROWN / VARIES
Odor.............: NONE
Layers...........: Both
Specific Gravity.: 0.850 - 1.400
Free Liquids.....: 95 - 100
Cyanides.........: None
Sulfides.........: None
PCB's............: > 500 ppm, Regulated by 40 CFR 761: Y
Phenolics........: None
% Taxable........: DOT UN/NA NBR: UN2315
Treatment Codes..: T07
CRQ RPT QTY......: 1 Material Class: P
EPA Permit.......: EXP: / /
Hazard Class.....: 9
State Codes......:
Benzene ....: NESHAP: Not Benezene NESHAP
Packing Group....: III
Process Codes....: 10 BF
Cert of Dstrct Rq:

Federal Codes: NH00

HANDLING

LEVEL C w/NITRILE GLOVES
Contains PCB
ACID/ORGANIC
AVOID SKIN CONTACT
POLY TYVEK
BULK LIQUID

ASH: 5%
WASTE SHIPPED TO PORT ARTHUR UNDER THIS PROFILE MUST HAVE A FLAHPOINT ABOVE 140 DEGREES FAHRENHEIT

DOT PROPERTIES

Inhalation: 3 Dermal: 2 Oral: 3 Flammable: 3 Health: 3

SUMMARY

COMMENTS

FGPT
LIQUIDS.
(TRANS) MS-OK, 316-OK
(ACP) MSW

INCINERATE AFTERBURNER LIQUID(ES)/DRUMMED
(GEN) APPROVED FOR PTA
COMP. GP. # 7 (GREEN).
cc controls not required

Report: R7008
DATE: 11/21/97

CHEMICAL WASTE MANAGEMENT, INC.
WASTE PROFILE SUMMARY

Version 06.02
PTA-AI6534
SELLING REGION LAB - MRL

BUSINESS: CHEMICAL WASTE MGMT INC
DEPT.....: ..
ADDRESS 1: HWY 17 N MI MARKER 163
ADDRESS 2: PO BOX 55
CITY/ST..: EMELLE AL 35459-0055
CONTACT..: SARA GOULD

NUMBER........: 105-6-754
PHONE.........: 205/652-8089
EXPIRES.......: 05/01/98
STATUS........: PROFILE NOT SIGNED
FEDERAL EPA ID: ALD000622464
STATE EPA ID..: 99901
EPA STATUS....: UNDETERMINABL
SALES OFFICE..: PTA

WASTE NAME: PCB OIL/FLUSHATE (<500 PPM)
PROCESS GENERATING WASTE: TRANSFORMER DRAINING AND FLUSHING OPERATION
SHIP. NAME: RQ, POLYCHLORINATED BIPHENYLS
ADDL. DESC:

TANKS T-634
T-635

CHEMICAL COMPOSITION

	MIN	- MAX	UNIT DESCRIPTION
TRANSFORMER OIL	30	50	%
DIESEL FUEL, OIL	30	50	%
PCB	0	500	PPM
WATER	0	10	%

METALS	TCA OR TOTAL		
Arsenic as As	<	50	ppm
Barium as Ba	<	100	ppm
Cadmium as Cd	<	100	ppm
Chromium tot Cr	<	100	ppm
Lead as Pb	<	100	ppm
Mercury as Hg	<	0.2	ppm
Antimony	<	100	ppm
Beryllium	<	50	ppm
Nickel as Ni	<	100	ppm
Potassium	<	1000	ppm
Sodium	<	1000	ppm
Thallium as Tl	<	100	ppm
Vanadium	<	100	ppm
Selenium as Se	<	100	ppm
Silver as Ag	<	100	ppm

PHYSICAL CHARACTERISTICS

Physical State...: Liquid
Flash Point......: 140 - 200 CL
pH...............: 05.0 - 10.0
Color............: brown
Odor.............: NONE
Layers...........: Single Layer
Specific Gravity.: 0.800 - 1.300
Free Liquids.....: 99 - 100
Cyanides.........: None
Sulfides.........: None
PCB's............: < 500 ppm, Regulated by 40 CFR 761: Y
Phenolics........: 0 To 99 PPM
% Taxable........: DOT UN/NA NBR: UN2315
Treatment Codes..: T07
CRQ RPT QTY......: 1 Material Class: P
EPA Permit.......: EXP: / /
Hazard Class.....: 9
State Codes......:
Benzene ....: NESHAP: Not Benezene NESHAP
Packing Group....: III
Process Codes....: 10 BF
Cert of Dstrct Rq:

Federal Codes: NH00

HANDLING

LEVEL C w/NITRILE GLOVES | ACID/ORG/DUST PRE FILTER | POLY TYVEK
Contains PCB | AVOID SKIN CONTACT | BULK LIQUID

ASH: 0 TO 2 %. H2O: 0 TO 10 %

DOT PROPERTIES

Inhalation: 3 Dermal: 3 Oral: 3 Flammable: 3 Health: 3

SUMMARY

COMMENTS

FGPT/PCBS: RUN ON EACH LOAD
(GEN) APPROVED FOR PTA
CC CONTROLS : NOT REQUIRED.

INCINERATE PCB AFTERBURNER LIQUID.
(TRANS) MS OK; 316 OK.

TANK T-636

MATERIAL SAFETY ~~DATA SHEET~~

GENIUM PUBLISHING CORPORATION

1145 CATALYN ST., SCHENECTADY, NY 12303 USA (518) 377-8854

From Genium's MSDS Collection, to be used as a reference.

MSDS # G 525

MINERAL OIL
(Rev. A)

Issued: December 1983
Revised: November 1985

SECTION 1. MATERIAL IDENTIFICATION

18

MATERIAL NAME: MINERAL OIL

OTHER DESIGNATIONS: White mineral oil; Alboline; paraffin oil; Nujol, Saxol, Lignite oil. CAS #64742 46 7.

MANUFACTURER/SUPPLIER: This and other mineral oils are available from many suppliers, including:

Avatar Corp.
7728 W 99 St.
Hickory Hills, IL 60457
(312) 430-4200

SECTION 2. INGREDIENTS AND HAZARDS

SECTION 2. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Petroleum Distillate (C_{14} to C_{10} hydrocarbon)*	100	8-Hr. TWA: 5 mg/m^3
*TYPICAL COMPOSITION:		
Paraffinic Hydrocarbons	65	
Napthenic Hydrocarbons	29	
Alkylated Aromatic Hydrocarbons	6	
* ACGIH (1985-86) recommends a TWA of 5 mg/m^3 for oil mists.		
No specific exposure level has been established for mineral oil.		

SECTION 3. PHYSICAL DATA

Boiling point, 1 atm .... 500°-626°F(260-330°C)
Vapor pressure @ 25°C, mmHg .... Negligible
Vapor density (Air=1) .... N/A
Solubility in water @ 25°C, wt. % ... Negligible

Specific Gravity (H_2O=1) 0.8222
Volatiles, % by vol. .... ca. 90%+
Evaporation rate (Ether=1) ... Negligible
Viscosity @ 100°F .... 39.2 SSU*

APPEARANCE & ODOR: Clear, colorless, oily, practically odorless liquid.

* SSU = Saybolt Universal Units.

SECTION 4. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits in Air	Lower	Upper
Combustible*	No data*	N/A*	-	-

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical or foam. Do not use a solid stream of water since the stream will scatter and spread the fire. Use water spray to cool fire-exposed tanks/ containers.

Mineral oil is a slight fire hazard when exposed to heat, sparks, or open flame.

Firefighters should wear self-contained breathing apparatus and full protective clothing when fighting fires involving mineral oil. * Flash point varies with grade. Values ranging from 270°F-444°F have been indicated.

SECTION 5. REACTIVITY DATA

This material is stable in closed containers at room temperature under normal handling and storage conditions. It does not undergo hazardous polymerization.

As a combustible hydrocarbon, mineral oil may react violently with strong oxidizing agents.

Thermal decomposition or burning may produce carbon monoxide.

GENIUM PUBLISHING

SECTION 6. HEALTH HAZARD INFORMATION

TLV 5.0 mg/m³

Fumes or mists of mineral oil are irritating to the eyes, mucous membranes, and upper respiratory tract and can cause headache, dizziness and/or drowsiness if exposure is excessive. Prolonged inhalation of fumes can result in lipoid pneumonia. If splashed in the eyes, mineral oil may cause irritation. Repeated and/or prolonged contact with the skin may cause irritation and/or dermatitis. Ingestion of mineral oil may produce a cathartic effect (nausea, vomiting, and diarrhea). Aspiration of mineral oil into the lungs can cause chemical pneumonia. Mineral oils are suspected carcinogens of the skin and scrotum, larynx, lung and alimentary tracts. "Mineral Oil" is a name applied to many materials. CAS #8002-05-9 covers several different types which are listed as animal carcinogens by IARC. Check with your suppliers.

FIRST AID:

EYE CONTACT: Promptly flush eyes including under eyelids with running water for at least 15 minutes. Get medical attention if irritation persists.*

SKIN CONTACT: Wash exposed area with soap and water.

INHALATION: Remove victim to fresh air. Restore and/or support breathing as needed. Get medical help.*

INGESTION: Contact a physician or Poison Control Center. Do not induce vomiting. If vomiting occurs, aspiration of mineral oil may result.

* MEDICAL ATTENTION = in plant, Paramedic, Community.

SECTION 7. SPILL, LEAK AND DISPOSAL PROCEDURES

Notify safety personnel of large spills or leaks. Remove all sources of heat and ignition. Provide maximum explosion-proof ventilation. Evacuate all nonessential personnel from the area. Those involved in cleanup need protection against inhalation of fumes or mist and contact with the liquid.
Absorb small spills on paper towel or vermiculite and place in a closed container for disposal. Dike large spills and collect for reclamation or disposal. Mop up residue with soap and water. Use caution when picking up spills since floor may be slippery. Do not flush to sewer. Keep out of watersheds and waterways.

DISPOSAL: Place in a suitable container for licensed contractor, burn in an approved incinerator or land-fill Follow all Federal, state and local regulations.

SECTION 8. SPECIAL PROTECTION INFORMATION

General ventilation is adequate for this high-boiling material, except when it is heated or misted. When fumes or mists are present, local exhaust ventilation is needed to meet the ACGIH TLV of 5 mg/m³. For emergency or nonroutine exposures where the TLV may be exceeded, use an appropriate NIOSH-approved respirator. All electrical service in use or storage areas should have an explosion-proof design.

To prevent skin contact, wear impervious gloves and, if necessary, oil-impervious clothing. Wear safety gloves with side shield, splash goggles, or face shield to prevent contact with the eyes. Remove contaminated clothing promptly and do not reuse until it has been properly laundered.

Eyewash stations and safety showers should be available in use and handling areas.

Contact lenses pose a special hazard; soft lenses may absorb and all lenses concentrate irritants.

SECTION 9. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a cool, dry, well-ventilated area away from strong oxidizing agents. Protect containers from physical damage.

Use only with adequate ventilation. Avoid inhalation of fumes or mists and repeated or prolonged contact with the skin. Do not eat or smoke in use or handling areas.

Follow good housekeeping and personal hygiene practices when handling this material.

DOT CLASSIFICATION: Not regulated.

DATA SOURCE(S) CODE (See Glossary) 1, 6, 34, 59, 79. CR

APPROVALS J.O. Acurocco, 3/86.

INDUST. HYGIENE/SAFETY JW 3-86

MEDICAL REVIEW: Mar 86

CHEMICAL WASTE MANAGEMENT, INC.
WASTE PROFILE SUMMARY

Version 06.02
EME-000227
SELLING REGION LAB -

BUSINESS: CHEMICAL WASTE MGMT INC
DEPT.....: ..
ADDRESS 1: HWY 17 N MI MARKER 163
ADDRESS 2: PO BOX 55
CITY/ST..: EMELLE AL 35459-0055
CONTACT..: JIMMY STREET

NUMBER........: 105-6-754
PHONE.........: 205/652-8135
EXPIRES.......: 03/20/98
STATUS........: CONTRACT NOT IN PLACE
FEDERAL EPA ID: ALD000622464
STATE EPA ID..:
EPA STATUS....: UNDETERMINABL
SALES OFFICE..: EME

WASTE NAME: LAB SUMP WATER-NON-WASTEWATER
PROCESS GENERATING WASTE: LAB WASTE WATER DRAINS INTO SUMP
SHIP. NAME:
ADDL. DESC:

TANK T-725

CHEMICAL COMPOSITION

	MIN - MAX	UNIT DESCRIPTION
LABORATORY SUMP WATER SUMP WATER IS GENERATED THROUGH NORMAL LAB OPERATIONS. WATER IS COLLECTED IN THE LAB SUMP AND TANK. WHEN IT IS FULL, IT IS EMPTIED AND THE WATER IS TAKEN TO THE TANK FARM # 4.	100 %	

METALS	EP TOX/TCLP		
Arsenic as As	<	5.0	mg/l
Barium as Ba	<	100.0	mg/l
Cadmium as Cd	<	1.0	mg/l
Chromium tot Cr	<	5.0	mg/l
Lead as Pb	<	5.0	mg/l
Mercury as Hg	<	.2	mg/l
Selenium as Se	<	1.0	mg/l
Silver as Ag	<	5.0	mg/l

PHYSICAL CHARACTERISTICS

Physical State...: Liquid
Flash Point......: N/A CL
pH...............: 00.0 - 00.0
Color............:
Odor.............: NONE
Layers...........:
Specific Gravity.: 0.000
Free Liquids.....: 99 - 100
Cyanides.........: None
Sulfides.........: None
PCB's............: ppm, Regulated by 40 CFR 761:
Phenolics........: None
% Taxable........: DOT UN/NA NBR:
Treatment Codes..: S01
CRQ RPT QTY......: Material Class:
EPA Permit.......: EXP: / /
Hazard Class.....:
State Codes......:
Benzene ....: NESHAP:
Packing Group....:
Process Codes....:
Cert of Dstrct Rq:

Federal Codes: NH00

HANDLING

DOT PROPERTIES

Inhalation: 0 Dermal: 0 Oral: 0 Flammable: 0 Health: 0

SUMMARY

Alabama ADEM Number 020799-A005

COMMENTS

TEST ANNUALLY
STABILIZATION.REQUIRE ANNUAL ANALYSIS.
AS PROCESS WATER

NEW ANALYTICAL 03/26/97. NEW DECISION FOR USE AT
LAB WATER TO BE STORED AT STABILIZATION FOR USE
DAN EXTENDED UNTIL 02/15/97 (8 MONTHS)

CHEMICAL WASTE MANAGEMENT, INC.
WASTE PROFILE SUMMARY

BUSINESS: CHEMICAL WASTE MGMT INC
DEPT.....: ..
ADDRESS 1: HWY 17 N MI MARKER 163
ADDRESS 2: PO BOX 55
CITY/ST..: EMELLE AL 35459-0055
CONTACT..: SARA ADAMS

NUMBER........: 105-6-754
PHONE.........: 205/652-8089
EXPIRES.......: 04/16/98
STATUS........: CONTRACT NOT IN PLACE
FEDERAL EPA ID: ALD000622464
STATE EPA ID..:
EPA STATUS....: UNDETERMINABL
SALES OFFICE..: EME

WASTE NAME: TRUCK AND EQUIPMENT WASH WATER SLUDGE
PROCESS GENERATING WASTE: WASHING UNDERCARRIAGE OF TRANSPORT VEHICILES, PICK TRUCKS, HEAVY EQUIPMENT
SHIP. NAME:
ADDL. DESC:

TANKS T-901, T-902, T-903, & T-904

CHEMICAL COMPOSITION

		MIN	MAX	UNIT DESCRIPTION
WATER		10	20	%
DIRT/SLUDGE		80	100	%
ARSENIC (TCLP)	0.013 ppm			
BARIUM (TCLP)	0.691 - 1.41 ppm			
CADMIUM (TCLP)	<0.01 - 0.107 ppm			
CHROMIUM (TCLP)	<0.03 - 0.9 ppm			
LEAD (TCLP)	<0.009 - 0.825 ppm			
MERCURY (TCLP)	<0.005 ppm			
SILVER (TCLP)	<0.03 ppm			
SELENIUM (TCLP)	<0.005 - 0.156 ppm			
ANTHRACENE	0.296 mg/l			

METALS	EP TOX/TCLP	
Arsenic as As	0.013	mg/l
Barium as Ba	1.41	mg/l
Cadmium as Cd	0.107	mg/l
Lead as Pb	0.825	mg/l
Mercury as Hg	< 0.005	mg/l
Selenium as Se	0.156	mg/l
Silver as Ag	< 0.03	mg/l
Chromium Hex		
Copper		
Nickel as Ni	0.157	mg/l
Thallium as Tl		
Zinc		
Chromium tot Cr	0.9	mg/l

PHYSICAL CHARACTERISTICS

Physical State...: Solid/Liquid
Flash Point......: > = 200 OP
pH...............: 06.0 - 08.0
Color............: BROWN OPAQUE
Odor.............: NONE
Layers...........:
Specific Gravity.: 0.000
Free Liquids.....: 10 - 90
Cyanides.........: None
Sulfides.........: None
PCB's............: ppm, Regulated by 40 CFR 761:
Phenolics........: None
% Taxable........: DOT UN/NA NBR:
Treatment Codes..: S01
CRQ RPT QTY......: Material Class: I
EPA Permit.......: EXP: 04/06/94
Hazard Class.....:
State Codes......:
Benzene ....: NESHAP:
Packing Group....:
Process Codes....:
Cert of Dstrct Rq:

Federal Codes: NH00

HANDLING

DRUM OR BULK LIQUID

DOT PROPERTIES

Inhalation: 0 Dermal: 0 Oral: 0 Flammable: 0 Health: 0

SUMMARY

Alabama ADEM Number 100399-C002

COMMENTS

RECENT ANALYTICAL IN FILE 11/03/93
FINGERPRINT/MIX RATIO

STABILIZE/SOLIDIFY AND SECURE LANDFILL
DAN EXTENDED UNTIL 08/25/97 (8 MONTHS)

DOCUMENTATION

Certification of Control Device Design Analysis

A design analysis was performed in accordance with 40 CFR 268.1088(c)(5)(iv) for the carbon units managed at the CWM Emelle Facility. A design analysis was performed for all carbon units, however, only the unit for the Decant Storage (Unit X-025) is necessary at this time. This devise controls the emissions from Tanks T-715, T-717 and T-719.

WALLS ENVIRONMENTAL CONSULTING, INC.

Date: 4/22/97

Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

1.0 INTRODUCTION

This report evaluates the design of five carbon adsorbers located at the Chemical Waste Management (CWM) - Emelle, Alabama facility. Each carbon adsorber was evaluated according to a calculated design carbon breakthrough time as well as an actual breakthrough time based upon compliance monitoring data taken at the facility. In order to calculate carbon breakthrough times, the annual amount of emissions from each tank and tanker truck loading station attached to these five adsorbers was estimated using maximized permitted flowrates of waste. Based upon information supplied by Calgon Carbon Corporation, the amount of activated carbon needed to control the maximum emissions was factored. Using the quantity of carbon needed, the design carbon breakthrough time was then calculated with the design criteria of the carbon adsorbers.

The CWM Emelle facility uses activated carbon adsorption systems to control the vent gas emissions from several tank farms and tanker truck loading stations located at the facility in accordance with requirements contained in 40 CFR 264 & 265 Subchapter CC. This report contains a "design analysis" at maximum permitted flow rates, and presentation of actual monitoring data to demonstrate compliance with the removal efficiency requirements presented in Subchapter CC, 40 CFR Parts 264 and 265.

To control emissions from the tanks, each tank is vented to a carbon adsorber. Information about each carbon adsorber evaluated, which contains Calgon Carbon Corporation BPL 4X10 Activated Carbon[1], is included in this report. Whenever the VOC removal efficiency of a carbon adsorber falls below 95%, the spent adsorbent is replaced with fresh activated carbon.

The evaluation of each carbon adsorber is shown in the attached exhibits as follows:

Exhibit 1 -	Decant Storage (Tanks T714-T722 and loading stations); Adsorber permit number X-025
Exhibit 2 -	Decant (Tank T724/DCU and loading station); Adsorber permit number X-019
Exhibit 3 -	Flush Tanks (Tanks T634 and T635); Adsorber permit number Z-014
Exhibit 4 -	Tank Farm #1 Loading (RCRA/TSCA loading station); Adsorber permit number X-026
Exhibit 5 -	Solvent Tank (Tank T520 and loading station); Adsorber permit number X-016

2.0 CERTIFICATIONS

OWNER'S CERTIFICATION

In accordance with the requirements of the "Subchapter CC Standards" of 40 CFR Parts 264 and 265, I hereby certify that this design analysis demonstrates that the control devices in place at the Chemical Waste Management - Emelle facility are designed to operate at an efficiency of 95 percent or greater when operating at capacity or the highest level reasonably expected to occur. The operating parameters used in this design analysis reasonably represent the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. I further certify that the installed control equipment meets the minimum design specifications used in this design analysis.

For Chemical Waste Management, Inc.:

9/17/97

Date

Rodger Henson
Divison President

ENGINEER'S CERTIFICATION

The engineering calculations of the five carbon adsorbers currently in use at the Chemical Waste Management - Emelle facility as contained in this design analysis were prepared in accordance with good engineering practice and the requirements of the "Subchapter CC Standards" contained in 40 CFR Parts 264 and 265. The results of the design analysis indicate that the control devices installed at the Chemical Waste Management - Emelle facility satisfy the removal efficiency requirements of the "Subchapter CC Standards" contained in 40 CFR Parts 264 and 265.

24-APR-97

Date

Dr. John F. Pietranski, P.E.
Alabama Registration No. 17159

ALABAMA REGISTERED NO. 17159 PROFESSIONAL ENGINEER JOHN F. PIETRANSKI

Date: 4/22/97

Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

3.0 SUMMARY OF DESIGN ANALYSIS

The calculations shown in each carbon adsorption system exhibit demonstrate that the carbon adsorbers are designed to control the maximum anticipated flow rate of emitted vent gas directed to it. Based upon calculated design breakthrough times and actual measured adsorber inlet and outlet VOC concentrations and actual records of carbon replacement, each of the five carbon adsorbers meets its design objectives.

The design and actual breakthrough times as determined in each exhibit are as follows:

Adsorption System	**Design Breakthrough (days)** [no safety factor]	**Design Breakthrough (days)** [safety factor =100%]	**Actual Breakthrough (days)**(2)
Decant Storage Permit No. X-025	36	18	>262
Decant Permit No. X-019	153	77	>323
Flush Tanks Permit No. Z-014	1165	583	>255
Tank Farm #1 Loading Permit No. X-026	572	286	>323
Solvent Tank Permit No. X-016	42	21	>262

Carbon adsorption isotherm curves as provided by Calgon Carbon Corporation were used to determine a carbon adsorption capacity factor. The worst-case factor occurs at a high temperature and a low constituent concentration since the capacity of activated carbon decreases as the temperature increases and/or the concentration of a VOC constituent decreases. Thus, a temperature of **91.5°F** (the highest monthly average maximum temperature for the facility, taken from meteorological data compiled in AP-42(3), Table 7-2), and a partial pressure of the VOC constituents of **0.0001 psia**(4) (a partial pressure lower than that of all constituents at all calculated concentrations) were used to factor a design carbon VOC removal capacity of 10 lbs VOC's per 100 lbs activated carbon. According to Calgon Carbon Corporation(1), the carbon

VOC capacity at a relative humidity of 100% is equal to half the "dry" capacity; this is shown in the adsorption isotherm for water included in Attachment 3. Thus, to account for relative humidity, a 100% safety factor was used in determining design breakthrough times.

Tank vent gas emissions were calculated using the equations given in **AP-42**[3], **Compilation of Air Pollutant Emission Factors**, *Section 7, Liquid Storage Tanks.* Vent gas stream characteristics and tank emission calculations were determined using the annual average maximum and minimum temperatures and pressures given for the closest representative town (Montgomery, Alabama) contained in **AP-42**[3], Table 7-2. Tank information and representative stream constituents were provided by the CWM Emelle facility. Maximum annual waste flowrates were taken from maximized worst case calculated flows developed by CWM with assistance from WEC by utilizing a spreadsheet program developed by WEC.

The design annual amount of carbon required was calculated for each adsorber. The total VOC emissions routed to an adsorber was determined by summing the emissions from each tank and/or tanker truck loading station in the adsorber system. The resulting total VOC emissions were then divided by a carbon capacity factor based upon the constituents routed to an adsorber. This gave the amount of activated carbon required to control the VOC emissions resulting from a worst-case scenario.

Each of the carbon adsorbers is designed such that the maximum velocity through the carbon bed is less than the recommended[5] maximum allowable velocity of 100 ft/min. Based on field observations, each of the carbon adsorbers has a sufficient bed depth[5].

Engineering calculations used in a design analysis of a carbon adsorption system must meet the requirements of 40 CFR 264.1035, which states in part:

> (b)(4)(iii)(G) For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

The attached exhibits consider each of the requirements given above and demonstrate compliance with the requirements for the CWM Emelle facility.

Date: 4/22/97

Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

4.0 SUMMARY OF OPERATION & PERFORMANCE DATA

The tank data and maximum annual flowrates for the components in each carbon adsorption system were provided to WEC by the CWM Emelle Facility. The vent gas from Tanks T714-T722 and associated tanker truck loading stations are directed to the Decant Storage adsorber; the vent gas from Tank T724/DCU is directed to the Decant adsorber; the vent gas from Tanks T634-T636 is directed to the Flush Tanks adsorber; the vent gas from the RCRA/TSCA loading station is directed to the Tank Farm #1 Loading adsorber; and the vent gas from Tank T520 is directed to the Solvent Tank adsorber. In addition these calculations assume that emissions from any potential associated tanker truck loading stations are directed to this adsorber.

As required by 40 CFR 264.1033, the volatile organic concentrations (VOC's) are measured by CWM Emelle personnel on a **daily**[6] basis at the inlet and outlet points of the activated carbon adsorbers using a BACHARACH TLV Sniffer. As shown in the included product information (Attachment 2), the TLV Sniffer has a detection range of 0-10,000 PPM, and a 2 PPM hexane minimum detectable concentration. Readings are recorded by facility personnel on a Carbon Canister Monitoring Log. An example of the log used at the CWM - Emelle facility is included as Attachment 1.

Actual breakthrough is determined, following the requirements of 40 CFR 264.1087, when the percent VOC's removed by a carbon adsorber falls **below 95%**[7]. The removal efficiency is calculated and recorded on the monitoring log.

Upon determination of breakthrough for a carbon adsorption system, the spent adsorbent in the carbon adsorber is removed and replaced with fresh Calgon Carbon Corporation BPL 4X10 Activated Carbon[1]. Information about this adsorbent is included as Attachment 3. An inventory of fresh adsorbent is maintained at the facility based upon the expected replacement cycles of each adsorption system.

Data from compliance monitoring records as supplied to WEC by CWM Emelle for the period including January 1, 1996 to November 18, 1996 is summarized in figures titled "CAS Probability Plot", "Removal Efficiency vs. Time", and "Outlet VOC Concentration vs. Time" included in each carbon adsorption system exhibit. Notations have been included to indicate when the spent carbon was replaced.

Carbon replacement occurred following a calculated removal efficiency below 95% for an adsorber. Carbon replacement occurred three times during the period reviewed. The carbon in the **Flush Tanks** Adsorber (permit no. Z-014) was replaced on **9/11/96**, the carbon in the **Decant Storage** Adsorber (permit no. X-025) was replaced on **9/28/96**, and the carbon in the **Solvent Tank** Adsorber (permit no. Z-016) was replaced on **9/28/96**.

The following table shows the design breakthrough time as well as the number of times the carbon was changed during the period reviewed:

Adsorption System	**Design Breakthrough** (days) [Safety Factor = 100%]	**Number of Times Carbon Changed**
Decant Storage Permit No. X-025	18	1
Decant Permit No. X-019	77	0
Flush Tanks Permit No. Z-014	583	1
Tank Farm #1 Loading Permit No. X-026	286	0
Solvent Tank Permit No. X-016	21	1

Notes:

(1) Activated carbon information and carbon capacity isotherms provided by Calgon Carbon Corporation, and included as Attachment 3.

(2) Actual breakthrough times based upon CWM records of carbon replacement between 1/1/96 and 11/18/96. Design breakthrough based on maximum flowrates for Tanks T520 and T715-T722. Actual flowrates during the period were lower. Flush Tanks actual breakthrough was less than design due to non-typical flow conditions during late October. These conditions caused the removal efficiency to fall below 95%.

Date: 4/22/97

Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

(3) Emission calculations and meteorological data based upon information contained in EPA report AP-42, **Compilation of Air Pollutant Emission Factors**; *Volume I: Stationary Point and Area Sources*; Fifth Edition, January 1995.

(4) A VOC partial pressure of 0.0001 psia was used to give a conservative estimate of carbon capacity for all organic compounds found in the vent gas.

(5) Recommended maximum allowable velocity through the carbon adsorber found on page 5-20 of EPA document 450/2-81-005, **APTI Course 415 Control of Gaseous Emissions**; *Student Manual*; December 1981. Carbon Bed Depth discussion found on pages 5-20 and 5-21.

(6) 40 CFR 264.1033 states, in part: "The monitoring frequency shall be daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity established as a requirement of 264.1035(b)(4)(iii)(G), whichever is longer."

(7) The control device standards given in 40 CFR 264.1087 require that the control device must be "A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight."

DOCUMENTATION

Leachate Vapor Pressure Calculations

For Leachate Tanks

The leachate generated at the Emelle Facility was evaluated for vapor pressure using a method defined in 40 CFR 265.1084(c)(3)(ii)(C), methods obtained from standard reference text. The vapor pressure was evaluated for the tanks in Tank Farm 4 (T-1405 through T-1420), Tanks T-1701 through T-1704 and T-A. The results are presented in the following spreadsheets.

	CHEMICAL	CAS #	Molecular Formula	Antoine's Coefficients					Temperature		Eqn. A	Eqn. B	Estimated Vapor Pressure at Temp (mm Hg)	Measured V.P.	Measurement Conditions	[Ref.]	Mol. Wt.	Conc (mg/L)	Mass of Chemical in Mixture (g/L)	# of Moles of Chemical in Mixture (per L)	Mole Fraction of Chemical in Mixture	Vapor Pressure of Chemical at T and Total V.P. (mm of Hg)	Vapor Pressure of Chemical at T and Total V.P. (kPa)
				A	B	C	D	E	C	K													
ALIPHATICS																							
ACETATES (n=7)	n-Butyl Acetate	123-86-4	$C_6H_{12}O_2$	4.383	-2.71E+03	3.9835	-1.86E-02	9.72E-06		298.16		X	11.53	15	77 F (25 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Acetate	141-78-6	$C_4H_8O_2$	0.8955	-2.25E+03	5.4643	-1.95E-02	1.24E-05		298.16		X	93.43	100	81 F (27 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Acetate	110-19-0	$C_6H_{12}O_2$	35.1224	-3.24E+03	-9.3893	1.79E-11	2.67E-06		298.16		X	17.83	10	55 F (12.8 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Acetate	108-21-4	$C_5H_{10}O_2$	22.2064	-2.50E+03	-4.8975	-2.79E-10	8.34E-07		298.16		X	60.37	59.2	77 F (25 C)	HSDB	102.150		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Acetate	79-20-9	$C_3H_6O_2$	33.7235	-2.72E+03	-9.1182	-9.43E-11	3.31E-06		298.16		X	214.43	216.2	77 F (25 C)	HSDB	74.079		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Acetate	109-60-4	$C_5H_{10}O_2$	43.0548	-3.47E+03	-1.22E+01	2.47E-10	3.75E-06		298.16		X	33.31	33.7	77 F (25 C)	HSDB	102.15		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Acetate	108-05-4	$C_4H_6O_2$	12.722	-2.18E+03	-9.15E-01	-4.57E-03	2.97E-06		298.16		X	114.56	115	77 F (25 C)	HSDB	86.090		0	0.0000E+00	0.0000	0.0000E+00	0
ALCOHOLS (n=9)	n-Butyl Alcohol	71-36-3	$C_4H_{10}O$	7.4768	1362.39	178.73			25		X		6.16	5.5	68 F (20 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	sec-Butyl Alcohol	78-92-2	$C_4H_{10}O$	7.4743	1314.19	186.51			25		X		18.24	18.3	77 F (25 C)	HSDB	74.122	45.20	0.0452	6.0981E-04	0.0000	2.0099E-04	2.67959E-05
	tert-Butyl Alcohol	75-65-0	$C_4H_{10}O$	7.3199	1154.48	177.66			25		X		42.00	41.7	77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Alcohol	64-17-5	C_2H_6O	8.2133	1652.05	231.48			25		X		59.16	62	77 F (25 C)	Gallant & Yaws, Volume 1	46.069		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Alcohol	78-83-1	$C_4H_{10}O$	109.2803	-6.31E+03	-3.69E+01	1.45E-02	-3.95E-13		298.16		X	10.45	10	71.1 F (21.7 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Alcohol	67-63-0	C_3H_8O	8.1182	1580.92	219.62			25		X		45.23	44.0	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Alcohol	67-56-1	CH_4O	8.0724	1574.99	238.87			25		X		126.94	129	77 F (25 C)	Gallant & Yaws, Volume 1	32.042		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Alcohol	71-23-8	C_3H_8O	7.6192	1375.14	193.01			25		X		20.49	20.8	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	2-Butoxyethanol	111-76-2	$C_6H_{14}O$	-39.3735	-3.01E+03	2.57E+01	-5.73E-02	3.27E-05		298.16		X	0.87	0.88	77 F (25 C)	HSDB	118.200		0	0.0000E+00	0.0000	0.0000E+00	0
KETONES (n=3)	Acetone	67-64-1	C_3H_6O	28.5884	-2.47E+03	-7.351	2.80E-10	2.74E-06		301.16		X	260.99	231	77 F (25 C)	HSDB	58.080	97	0.097	1.6701E-03	0.0000	7.8780E-03	0.001050295
	Methyl Ethyl Ketone	78-93-3	C_4H_8O	7.2087	1368.21	236.51			28		X		108.66	90.6	77 F (25 C)	ATSDR	72.107	44.90	0.0449	6.2269E-04	0.0000	1.2229E-03	0.000163041
	Methyl Isobutyl Ketone	108-10-1	$C_6H_{12}O$	64.1919	-4.36E+03	-1.98E+01	-4.00E-10	7.10E-06		301.16		X	23.46	14.5	68 F (20 C)	HSDB	100.16	4.64	0.00464	4.6326E-05	0.0000	1.9646E-05	2.61927E-06
SUBSTITUTED METHANES (n=9)	Bromoform	75-25-2	$CHBr_3$	-10.2943	-2.17E+03	9.1193	-1.6495E-02	7.4917E-06		298.16		X	5.51	5.6	68 F (20 C)	MDL, 1996	252.75		0	0.0000E+00	0.0000	0.0000E+00	0
	Chloroform	67-66-3	$CHCl_3$	6.9371	1.1712E+03	2.27E+02			25		X		194.75	195	77 F (25 C)	Yaws, 1992	119.378		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Tetrachloride	56-23-5	CCl_4	6.8941	1.21958E+03	2.2717E+02			25		X		114.22	108	77 F (25 C)	HSDB	153.823		0	0.0000E+00	0.0000	0.0000E+00	0
	Dichlorodifluoromethane	75-71-8	CCl_2F_2	6.68619	782.072	235.377			25		X		4,814.78	4,393	70.0 F (21.1 C)	MDL, 1996	120.91		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Bromide	74-83-9	CH_3Br	6.9597	9.8659E+02	2.3833E+02			25		X		1,633.46	1,420	68 F (20 C)	HSDB	94.95		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Chloride	74-87-3	CH_3Cl	6.9944	9.0245E+02	2.4361E+02			25		X		4,312.17	3,600	68 F (20 C)	MDL, 1996	50.49		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Bromide	74-95-3	CH_2Br_2	35.3525	-3.04E+03	-9.5972	5.83E-10	2.94E-06		298.16		X	45.24	40	73.9 F (23.3 C)	HSDB	173.83		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Chloride	75-09-2	CH_2Cl_2	7.0803	1138.91	231.46			28		X		490.64	400	75.4 F (24.1 C)	HSDB	84.933	0.484	0.000484	5.6986E-06	0.0000	5.0534E-05	6.73716E-06
	Trichlorofluoromethane	75-69-4	CCl_3F	6.8843	1,043.01	236.86			25		X		796.56	690	68 F (20 C)	MDL, 1996	137.38		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED ETHANES/ETHENES (n=16)	Chloroethane	75-00-3	C_2H_5Cl	6.94	1.01276E+03	2.3666E+02			25		X		1,174.09	1,000	68 F (20 C)	MDL, 1996	64.52		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dibromoethane	106-93-4	$C_2H_4Br_2$	6.72148	1280.82	201.75			25		X		11.83	8.5	68 F (20 C)	HSDB	187.88		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloroethane	75-34-3	$C_2H_4Cl_2$	33.38	-2.6102E+03	-9.1336	-2.8388E-11	3.7323E-06		298.16		X	227.41	230	77 F (25 C)	ATSDR	98.960		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dichloroethane	107-06-2	$C_2H_4Cl_2$	48.4226	-3.1803E+03	-15.37	7.2935E-03	2.6844E-14		298.16		X	79.16	79	77 F (25 C)	EPA, 1992	98.960		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloroethene	75-35-4	$C_2H_2Cl_2$	-16.5419	-1.6655E+03	1.3923E+01	-4.0958E-02	2.9995E-05		298.16		X	600.39	591	77 F (25C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	cis-1,2-Dichloroethene	156-59-2	$C_2H_2Cl_2$	7.0223	1205.4	230.6			25		X		202.46	215	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,2-Dichloroethene	156-60-5	$C_2H_2Cl_2$	48.4574	-3.0496E+03	-14.694	-2.1262E-09	7.3465E-06		298.16		X	333.33	336	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachloroethane	67-72-1	C_2Cl_6	7.08633	1626.945	197.048			25		X		0.57	0.4	68 F (20 C)	HSDB	236.74		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,1,2-Tetrachloroethane	630-20-6	$C_2H_2Cl_4$	-1.07112	-2.51E+03	6.1536	-1.88E-02	1.05E-05		298.16		X	12.07	14	77 F (25 C)	HSDB	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2,2-Tetrachloroethane	79-34-5	$C_2H_2Cl_4$	56.2356	-4.4615E+03	-16.556	-3.5724E-10	4.0425E-06		298.16		X	4.62	8	68 F (20 C)	MDL, 1996	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrachloroethene	127-18-4	C_2Cl_4	7.02	1415.49	221.10			25		X		18.55	18.47	77 F (25 C)	HSDB	165.834		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,1-Trichloroethane	71-55-6	$C_2H_3Cl_3$	36.5468	-2.8421E+03	-10.205	-2.6369E-09	3.7075E-06		298.16		X	123.74	124	77 F (25 C)	ATSDR	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2-Trichloroethane	79-00-5	$C_2H_3Cl_3$	6.9653	1,351.0	217.0			25		X		24.14	23	77 F (25 C)	HSDB	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	Trichloroethene	79-01-6	C_2HCl_3	7.0281	1,315.1	230.01			25		X		74.31	74	77 F (25 C)	ATSDR	131.389		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2-Trichloro-1,2,2-Trifluorethane	76-13-1	$C_2Cl_3F_3$	33.7192	-2.53E+03	-9.3175	1.46E-08	3.94E-06		298.16		X	331.76	363.6	77 F (25 C)	HSDB	187.38		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Chloride	75-01-4	C_2H_3Cl	6.4971	7.834E+02	2.3001E+02			25		X		2,661.11	2,660	77 F (25 C)	ATSDR	62.499		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED PROPANES/PROPENES (n=6)	3-Chloropropene	107-05-1	C_3H_5Cl	8.6085	-1.75E+03	6.08E-01	-7.17E-03	5.22E-06		298.16		X	368.68	368	77 F (25 C)	HSDB	76.53		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloropropane	78-99-9	$C_3H_6Cl_2$	5.4819	-2.1918E+03	2.6014	-1.1751E-02	7.3435E-06		298.16		X	52.12				112.99		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dichloropropane	78-87-5	$C_3H_7Cl_2$	6.9654	1296.4	221			25		X		49.60	50	77 F (25 C)	HSDB	112.99		0	0.0000E+00	0.0000	0.0000E+00	0
	cis-1,3-Dichloropropene	10061-01-5	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	43	77 F (25 C)	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,3-Dichloropropene	10061-02-6	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	18.5	?	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2,3-Trichloropropane	96-18-4	$C_3H_5Cl_3$	7.0028	1484.1	204.01			25		X		3.33	3.69	77 F (25 C)	HSDB	147.43		0	0.0000E+00	0.0000	0.0000E+00	0
MISCELLANEOUS (n=15)	Acetonitrile	75-05-8	C_2H_3N	7.0735	1279.2	224.01			25		X		86.37	87	75 F (24 C)	HSDB	41.052		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrylonitrile	107-13-1	C_3H_3N	6.9163	1.2083E+03	2.2201E+02			25		X		105.83	100	73 F (23 C)	HSDB	53.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrolein	107-02-8	C_3H_4O	57.9815	-3.0933E+03	-19.6380	1.1486E-02	-2.3854E-14		298.16		X	274.35	210	68 F (20 C)	MDL, 1996	56.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Disulfide	75-15-0	CS_2	6.9419	1168.62	241.54			25		X		360.99	297	68 F (20 C)	HSDB	76.14		0	0.0000E+00	0.0000	0.0000E+00	0
	1-Chloropentane	543-59-9	$C_5H_{11}Cl$	-4.4886	-2.2604E+03	7.8088	-2.3675E-02	1.4884E-05		301.16		X	38.21				106.60						
	Diethyl Ether	60-29-7	$C_4H_{10}O$	6.92032	1064.07	228.8			25		X		534.28	537	77 F (25 C)	HSDB	74.12		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Dioxane	123-91-1	$C_4H_8O_2$	20.5761	-2.47E+03	-4.3645	-2.71E-10	8.52E-07		298.16		X	38.20	37	77 F (25 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Epichlorohydrin	106-89-8	C_3H_5ClO	24.764	-2.8846E+03	-5.6252	-1.1011E-10	5.3331E-07		298.16		X	16.50	13	68 F (20 C)	MDL, 1996	92.53		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Methacrylate	97-63-2	$C_6H_{10}O_2$	27.9574	-2.87E+03	-6.9383	-2.35E-10	1.68E-06		298.16		X	20.59	14	68 F (20 C)	HSDB	114.14		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethylene Oxide	75-21-8	C_2H_4O	7.2701	1115.1	244.15			25		X		1,339.85	1314	77 F (25 C)	HSDB	44.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorobutadiene	87-68-3	C_4Cl_6	35.591	-4.138E+03	-9.0606	2.9025E-10	5.9012E-07		298.16		X	0.22	0.15	68 F (20 C)	HSDB	260.76		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorocyclopentadiene	77-47-4	C_5Cl_6	-9.7942	-3.32E+03	10.171	-2.11E-02	9.02E-06		298.16		X	0.06	0.08	77 F (25 C)	MDL, 1996	272.77		0	0.0000E+00	0.0000	0.0000E+00	0
	Isophorone	78-59-1	$C_9H_{14}O$	0.5931	-4.6647E+03	7.3556	-2.2339E-02	1.0189E-05		298.16		X	0.0025	0.26	68 F (20 C)	MDL, 1996	138.2		0	0.0000E+00	0.0000	0.0000E+00	0
	Propionitrile	107-12-0	C_3H_5N	6.9301	1277.2	218.01			25		X		47.24	40	72 F (22 C)	HSDB	55.08		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrahydrofuran	109-99-9	C_4H_8O	34.87	-2.75E+03	-9.5958	1.99E-10	3.55E-06		298.16		X	162.18	131	68 F (20 C)	HSDB	72.107		0	0.0000E+00	0.0000	0.0000E+00	0

Chemical Waste Management, Inc.
Emelle, Alabama Facility
Tank Farm 4 (T-1405 - T-1420)
Leachate Vapor Pressure Determination

	CHEMICAL	CAS #	Molecular Formula	Antoine's Coefficients A	B	C	D	E	Temperature C	K	Eqn. A	Eqn. B	Estimated Vapor Pressure at Temp (mm Hg)
AROMATICS (n=16)	Benzene	71-43-2	C_6H_6	6.90565	1,211.033	220.79			25		X		95.18
	Benzyl Chloride	100-44-7	C_7H_7Cl	12.1503	-2.91E+03	-0.3712	-5.29E-03	2.63E-06		298.16		X	1.31
	Chlorobenzene	108-90-7	C_6H_5Cl	6.9781	1,431.05	217.56			28		X		14.14
	1,2-Dichlorobenzene	95-50-1	$C_6H_4Cl_2$	7.0703	1649.55	213.32			25		X		1.41
	1,3-Dichlorobenzene	541-73-1	$C_6H_4Cl_2$	7.3037	1782.4	230.01			25		X		2.06
	1,4-Dichlorobenzene	106-46-7	$C_6H_4Cl_2$	6.998	1575.11	208.52			25		X		1.79
	2,4-Dinitrotoluene	121-14-2	$C_7H_6N_2O_4$	11.5966	-3.0079E+03	-1.6468	1.5949E-03	-1.8722E-14		298.16		X	8.1E-03
	2,6-Dinitrotoluene	606-20-2	$C_7H_6N_2O_4$	-14.5673	-4.2746E+03	12.904	-2.38E-02	9.4513E-06		298.16		X	5.9E-04
	Ethylbenzene	100-41-4	C_8H_{10}	6.95719	1424.255	213.206			25		X		9.51
	Hexachlorobenzene	118-74-1	C_6Cl_6	-134.3625	-1.55E+03	61.748	-6.5123E-02	2.0872E-05		298.16		X	4.824E-05
	Nitrobenzene	98-95-3	$C_6H_5NO_2$	-54.4937	-2.1123E+03	29.321	-4.4839E-02	2.0162E-05		298.16		X	0.25
	Toluene	108-88-3	C_7H_8	6.95464	1344.8	219.482			25		X		28.45
	1,2,4-Trichlorobenzene	120-82-1	$C_6H_3Cl_3$	15.5947	-2.892E+03	-2.5549	2.0384E-04	-7.0601E-14		301.16		X	0.52
	1,2-Xylene	95-47-6	C_8H_{10}	6.99891	1474.679	213.686			25		X		6.62
	1,3-Xylene	108-38-3	C_8H_{10}	7.00908	1462.266	215.105			25		X		8.30
	1,4-Xylene	106-42-3	C_8H_{10}	6.99052	1453.43	215.307			25		X		8.76
AROMATIC ALCOHOLS (n=8)	2-Chlorophenol	95-57-8	C_6H_5ClO	18.2631	-2.652E+03	-3.6728	8.3047E-10	1.8341E-06		298.16		X	2.78
	2,4-Dichlorophenol	120-83-2	$C_6H_4Cl_2O$	7.497876	1.890E+03	199.36			28		X		0.15
	2,4-Dimethylphenol	105-67-9	$C_8H_{10}O$	53.3866	-5.1516E+03	-15.095	-1.3196E-09	2.8455E-06		301.16		X	1.3E-01
	2-Methylphenol	95-48-7	C_7H_8O	6.9117	1435.5	165.16			26		X		0.30
	3-Methylphenol	108-39-4	C_7H_8O	7.508	1856.36	199.07			25		X		0.17
	4-Methylphenol	106-44-5	C_7H_8O	7.0351	1511.08	161.86			28		X		0.12
	Pentachlorophenol	87-86-5	C_6HCl_5O	7.544423	2286.91	180.3596			28		X		0.000370
	Phenol	108-95-2	C_6H_6O	7.1345	1516.07	174.57			28		X		0.45
PAHs (n=9)	Acenaphthene	83-32-9	$C_{12}H_{10}$	28.6173	-4.1623E+03	-8.775	-1.0872E-09	6.3928E-07		298.16		X	1.4E-02
	Anthracene	120-12-7	$C_{14}H_{10}$	-120.0992	4.478	52.574	-4.7696E-02	1.5020E-05		298.16		X	1.3E-03
	Chloronaphthalene	25586-43-0	$C_{10}H_7Cl$	93.776	-6.6521E+03	-30.859	1.0748E-02	-3.2318E-14		298.16		X	0.0205
	Chrysene	218-01-9	$C_{18}H_{12}$	-50.1566	-3.4381E+03	25.178	-2.462E-02	7.0144E-06		298.16		X	7.89E-07
	Fluoranthene	206-44-0	$C_{16}H_{10}$	70.6802	-6.484E+03	-2.2241E+01	7.2184E-03	-6.3035E-13		298.16		X	1.1E-04
	Fluorene	86-73-7	$C_{13}H_{10}$	53.9382	-5.3622E+03	-16.059	4.5693E-03	8.143E-13		298.16		X	3.8E-03
	Naphthalene	91-20-3	$C_{10}H_8$	7.01065	1,733.71	201.859			25		X		0.23
	Phenanthrene	85-01-8	$C_{14}H_{10}$	50.2858	-5.7409E+03	-13.935	-8.8520E-10	2.1343E-06		298.16		X	5.49E-04
	Pyrene	129-00-0	$C_{16}H_{10}$	70.7671	-6.9413E+03	-21.79	6.0727E-03	1.5767E-12		298.16		X	2.4E-05
PHTHALATES (n=4)	Dibutyl Phthalate	84-74-2	$C_{16}H_{22}O_4$	152.675	-1.0754E+04	-51.170	1.6933E-02	2.4948E-14		298.16		X	1.1E-05
	Diethyl Phthalate	84-66-2	$C_{12}H_{14}O_4$	72.1438	-7.0747E+03	-21.029	-3.2404E-10	3.4691E-06		298.16		X	4.9E-04
	Dimethyl Phthalate	131-11-3	$C_{10}H_{10}O_4$	12.6974	-4.1989E+03	-0.3463	-7.6524E-03	3.349E-06		298.16		X	5.9E-05
	Dioctyl Phthalate	117-84-0	$C_{24}H_{38}O_4$	27.8473	-7.6834E+03	-2.1134	-1.5234E-02	6.2365E-06		298.16		X	7.3E-08
	PCB 1016-1260									301.16			1.0E-04 max
	Water	7732-18-5	H_2O	29.8605	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16		X	28.40

CHEMICAL	Measured V.P.	Measurement Conditions	[Ref.]	Mol. Wt.	Conc (mg/L)	Mass of Chemical in Mixture (g/L)	# of Moles of Chemical in Mixture (per L)	Mole Fraction of Chemical in Mixture	Vapor Pressure of Chemical at T and Total V.P. (mm of Hg)	Vapor Pressure of Chemical at T and Total V.P. (kPa)
Benzene	95.2	77 F (25 C)	ATSDR	78.114		0	0.0000E+00	0.0000	0.0000E+00	0
Benzyl Chloride	1	72 F (22 C)	MDL, 1996	126.58		0	0.0000E+00	0.0000	0.0000E+00	0
Chlorobenzene	11.8	77 F (25 C)	HSDB	112.558	0.417	0.000417	3.7048E-06	0.0000	9.4670E-07	1.26214E-07
1,2-Dichlorobenzene	1.47	77 F (25 C)	HSDB	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
1,3-Dichlorobenzene	1.889	77 F (25 C)	MDL, 1996	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
1,4-Dichlorobenzene	1.76	77 F (25 C)	ATSDR	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
2,4-Dinitrotoluene	5.1E-03	68 F (20 C)	ATSDR	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
2,6-Dinitrotoluene	1.80E-02	68 F (20 C)	MDL, 1996	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
Ethylbenzene	9.53	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
Hexachlorobenzene	2.350E-05	77 F (25 C)	Schwarzenbach	284.79		0	0.0000E+00	0.0000	0.0000E+00	0
Nitrobenzene	0.15	68 F (20 C)	ATSDR	123.11		0	0.0000E+00	0.0000	0.0000E+00	0
Toluene	28.5	77 F (25 C)	Yaws, 1992	92.141		0	0.0000E+00	0.0000	0.0000E+00	0
1,2,4-Trichlorobenzene	1	101 F (38.4 C)	MDL, 1996	181.46	0.276	0.000276	1.5210E-06	0.0000	1.4432E-08	1.92405E-09
1,2-Xylene	10	83 F (28.3 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
1,3-Xylene	6.8	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
1,4-Xylene	8.84	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
2-Chlorophenol	1	53.8 F (12.1 C)	MDL, 1996	128.56		0	0.0000E+00	0.0000	0.0000E+00	0
2,4-Dichlorophenol	1	127 F (53 C)	MDL, 1996		0.431					
2,4-Dimethylphenol	10	198 F (92.3 C)	HSDB	122.16	2.2	0.0022	1.8009E-05	0.0000	4.3045E-08	5.73876E-09
2-Methylphenol	0.299	77 F (25 C)	ATSDR	108.140	1.33	0.00133	1.2299E-05	0.0000	6.7136E-08	8.95056E-09
3-Methylphenol	0.138	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
4-Methylphenol	0.11	77 F (25 C)	ATSDR	108.140	9.49	0.00949	8.7757E-05	0.0000	1.8902E-07	2.52006E-08
Pentachlorophenol	0.00017	68 F (20 C)	Crosby, 1981	266.35	1.52					
Phenol	0.35	77 F (25 C)	MDL, 1996	94.11	79.5	0.0795	8.4476E-04	0.0000	6.8250E-06	9.09915E-07
Acenaphthene	4.47E-03	—	ATSDR	154.21		0	0.0000E+00	0.0000	0.0000E+00	0
Anthracene	1.7E-05	77 F (25 C)	ATSDR	178.23		0	0.0000E+00	0.0000	0.0000E+00	0
Chloronaphthalene				162.61		0	0.0000E+00	0.0000	0.0000E+00	0
Chrysene	6.3E-09	77 F (25 C)	ATSDR	228.28		0	0.0000E+00	0.0000	0.0000E+00	0
Fluoranthene	5.0E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
Fluorene	7.1E-04	—	ATSDR	166.21		0	0.0000E+00	0.0000	0.0000E+00	0
Naphthalene	0.05	68 F (20 C)	MDL, 1996	128.16	0.798	0.000798	6.2266E-06	0.0000	2.6286E-08	3.50439E-09
Phenanthrene	9.6E-04	77 F (25 C)	ATSDR	178.22		0	0.0000E+00	0.0000	0.0000E+00	0
Pyrene	2.5E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
Dibutyl Phthalate	7.26E-05	77 F (25 C)	Schwarzenbach	278.34		0	0.0000E+00	0.0000	0.0000E+00	0
Diethyl Phthalate	6.32E-03	77 F (25 C)	Schwarzenbach	222.26		0	0.0000E+00	0.0000	0.0000E+00	0
Dimethyl Phthalate	1.82E-02	77 F (25 C)	Schwarzenbach	194.19		0	0.0000E+00	0.0000	0.0000E+00	0
Dioctyl Phthalate				390.56		0	0.0000E+00	0.0000	0.0000E+00	0
PCB 1016-1260				292	0.0663	0.0000663	2.2705E-07	0.0000	4.1038E-13	5.47115E-14
Water	23.756	77 F (25 C)	Yaws	18.070	999,711.75	999.7117477	5.5324E+01	0.9999	28.3980	3.7860
					Total Mass of Solute		*Total # of Moles in the Chemical Mixture*	*Check that the Mole Fractions sum to 1.00*	*Total Vapor Pressure of the Chemical Mixture (mm Hg)*	*Total Vapor Pressure of the Chemical Mixture (kPa)*
					288.25		*55.3283*	*1.0000*	*28.4074*	3.7873

If you have any comments or questions on this program, please contact Dr. David Dolan in Corp. EH&S at (630) 218-1537

Tank Number	1405 - 1420
Tank Size - m^3 (gals)	947.1 (250,195); 1924.26 (508,333)
Vapor Pressure Limit kPa (psi)	5.2 (0.75)

	CHEMICAL	CAS #	Molecular Formula	Antoine's Coefficients A	B	C	D	E	Temperature C	K	Eqn. A	Eqn. B	Estimated Vapor Pressure at Temp (mm Hg)	Measured V.P.	Measurement Conditions	[Ref.]	Mol. Wt.	Conc (mg/L)	Mass of Chemical in Mixture (g/L)	# of Moles of Chemical in Mixture (per L)	Mole Fraction of Chemical in Mixture	Vapor Pressure of Chemical at T and Total V.P. (mm of Hg)	Vapor Pressure of Chemical at T and Total V.P. (kPa)
ALIPHATICS																							
ACETATES																							
(n=7)	n-Butyl Acetate	123-86-4	$C_6H_{12}O_2$	4.383	-2.71E+03	3.9835	-1.66E-02	9.72E-06		298.16		X	11.53	15	77 F (25 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Acetate	141-78-6	$C_4H_8O_2$	0.6955	-2.25E+03	5.4643	-1.95E-02	1.24E-05		298.16		X	93.43	100	81 F (27 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Acetate	110-19-0	$C_6H_{12}O_2$	35.1224	-3.24E+03	-9.3893	1.79E-11	2.67E-06		298.16		X	17.83	10	55 F (12.8 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Acetate	108-21-4	$C_5H_{10}O_2$	22.2064	-2.50E+03	-4.8975	-2.79E-10	8.34E-07		298.16		X	60.37	59.2	77 F (25 C)	HSDB	102.150		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Acetate	79-20-9	$C_3H_6O_2$	33.7235	-2.72E+03	-9.1182	-9.43E-11	3.31E-06		298.16		X	214.43	216.2	77 F (25 C)	HSDB	74.079		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Acetate	109-60-4	$C_5H_{10}O_2$	43.0548	-3.47E+03	-1.22E+01	2.47E-10	3.75E-06		298.16		X	33.31	33.7	77 F (25 C)	HSDB	102.15		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Acetate	108-05-4	$C_4H_6O_2$	12.722	-2.18E+03	-9.15E-01	-4.57E-03	2.97E-06		298.16		X	114.56	115	77 F (25 C)	HSDB	86.090		0	0.0000E+00	0.0000	0.0000E+00	0
ALCOHOLS																							
(n=9)	n-Butyl Alcohol	71-36-3	$C_4H_{10}O$	7.4768	1362.39	178.73			25		X		6.16	5.5	68 F (20 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	sec-Butyl Alcohol	78-92-2	$C_4H_{10}O$	7.4743	1314.19	186.51			25		X		18.24	18.3	77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	tert-Butyl Alcohol	75-65-0	$C_4H_{10}O$	7.3199	1154.48	177.66			25		X		42.00	41.7	77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Alcohol	64-17-5	C_2H_6O	8.2133	1652.05	231.48			25		X		59.16	62	77 F (25 C)	Gallant & Yaws, Volume 1	46.069		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Alcohol	78-83-1	$C_4H_{10}O$	109.2803	-6.31E+03	-3.69E+01	1.45E-02	-3.95E-13		298.16		X	10.45	10	71.1 F (21.7 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Alcohol	67-63-0	C_3H_8O	8.1182	1580.92	219.62			25		X		45.23	44.0	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Alcohol	67-56-1	CH_4O	8.0724	1574.99	238.87			25		X		126.94	129	77 F (25 C)	Gallant & Yaws, Volume 1	32.042		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Alcohol	71-23-8	C_3H_8O	7.6192	1375.14	193.01			25		X		20.49	20.8	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	2-Butoxyethanol	111-76-2	$C_6H_{14}O$	-39.3735	-3.01E+03	2.57E+01	-5.73E-02	3.27E-05		298.16		X	0.87	0.88	77 F (25 C)	HSDB	118.200		0	0.0000E+00	0.0000	0.0000E+00	0
KETONES																							
(n=3)	Acetone	67-64-1	C_3H_6O	28.5884	-2.47E+03	-7.351	2.80E-10	2.74E-06		298.16		X	229.71	231	77 F (25 C)	HSDB	58.080		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Ethyl Ketone	78-93-3	C_4H_8O	7.2067	1368.21	236.51			25		X		94.78	90.6	77 F (25 C)	ATSDR	72.107		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Isobutyl Ketone	108-10-1	$C_6H_{12}O$	64.1919	-4.36E+03	-1.98E+01	-4.00E-10	7.10E-06		298.16		X	19.86	14.5	68 F (20 C)	HSDB	100.16		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED METHANES																							
(n=9)	Bromoform	75-25-2	$CHBr_3$	-10.2943	-2.17E+03	9.1193	-1.6495E-02	7.4917E-06		298.16		X	5.51	5.6	68 F (20 C)	MDL, 1996	252.75		0	0.0000E+00	0.0000	0.0000E+00	0
	Chloroform	67-66-3	$CHCl_3$	6.9371	1.1712E+03	2.27E+02			25		X		194.75	195	77 F (25 C)	Yaws, 1992	119.378		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Tetrachloride	56-23-5	CCl_4	6.8941	1.21958E+03	2.2717E+02			25		X		114.22	108	77 F (25 C)	HSDB	153.823		0	0.0000E+00	0.0000	0.0000E+00	0
	Dichlorodifluoromethane	75-71-8	CCl_2F_2	6.68619	782.072	235.377			25		X		4,814.78	4,393	70.0 F (21.1 C)	MDL, 1996	120.91		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Bromide	74-83-9	CH_3Br	6.9597	9.8859E+02	2.3833E+02			25		X		1,633.46	1,420	68 F (20 C)	HSDB	94.95		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Chloride	74-87-3	CH_3Cl	6.9944	9.0245E+02	2.4361E+02			25		X		4,312.17	3,600	68 F (20 C)	MDL, 1996	50.49		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Bromide	74-95-3	CH_2Br_2	35.3525	-3.04E+03	-9.5972	5.83E-10	2.94E-06		298.16		X	45.24	40	73.9 F (23.3 C)	HSDB	173.83		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Chloride	75-09-2	CH_2Cl_2	7.0803	1138.91	231.46			28		X		490.64	400	75.4 F (24.1 C)	HSDB	84.933	0.918	0.000918	1.0809E-05	0.0000	9.5827E-05	1.27757E-05
	Trichlorofluoromethane	75-69-4	CCl_3F	6.8843	1,043.01	236.86			25		X		796.56	690	68 F (20 C)	MDL, 1996	137.38		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED ETHANES/ETHENES																							
(n=16)	Chloroethane	75-00-3	C_2H_5Cl	6.94	1.01278E+03	2.3668E+02			25		X		1,174.09	1,000	68 F (20 C)	MDL, 1996	64.52		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dibromoethane	106-93-4	$C_2H_4Br_2$	6.72148	1280.82	201.75			25		X		11.83	8.5	68 F (20 C)	HSDB	187.88		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloroethane	75-34-3	$C_2H_4Cl_2$	33.38	-2.6102E+03	-9.1336	-2.8388E-11	3.7323E-06		301.16		X	257.64	230	77 F (25 C)	ATSDR	98.960	2.16	0.00216	2.1827E-05	0.0000	1.0162E-04	1.35477E-05
	1,2-Dichloroethane	107-06-2	$C_2H_4Cl_2$	48.4226	-3.1803E+03	-15.37	7.2935E-03	2.6844E-14		301.16		X	91.17	79	77 F (25 C)	EPA, 1992	98.960	0.254	0.000254	2.5667E-06	0.0000	4.2283E-06	5.63717E-07
	1,1-Dichloroethene	75-35-4	$C_2H_2Cl_2$	-16.5419	-1.6655E+03	1.3923E+01	-4.0958E-02	2.9995E-05		301.16		X	669.37	591	77 F (25C)	ATSDR	96.944	0.103	0.000103	1.0625E-06	0.0000	1.2851E-05	1.71333E-06
	cis-1,2-Dichloroethene	156-59-2	$C_2H_2Cl_2$	7.0223	1205.4	230.6			25		X		202.46	215	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,2-Dichloroethene	156-60-5	$C_2H_2Cl_2$	48.4574	-3.0496E+03	-14.694	-2.1262E-09	7.3465E-06		298.16		X	333.33	336	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachloroethane	67-72-1	C_2Cl_6	7.06633	1626.945	197.048			25		X		0.57	0.4	68 F (20 C)	HSDB	236.74		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,1,2-Tetrachloroethane	630-20-6	$C_2H_2Cl_4$	-1.07112	-2.51E+03	6.1536	-1.66E-02	1.06E-05		298.16		X	12.07	14	77 F (25 C)	HSDB	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2,2-Tetrachloroethane	79-34-5	$C_2H_2Cl_4$	56.2356	-4.4615E+03	-16.556	-3.5724E-10	4.0425E-06		298.16		X	4.62	8	68 F (20 C)	MDL, 1996	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrachloroethene	127-18-4	C_2Cl_4	7.02	1415.49	221.10			28		X		21.76	18.47	77 F (25 C)	HSDB	165.834	0.839	0.000839	5.0593E-06	0.0000	1.9890E-06	2.65173E-07
	1,1,1-Trichloroethane	71-55-6	$C_2H_3Cl_3$	36.5468	-2.8421E+03	-10.205	-2.6369E-09	3.7075E-06		298.16		X	123.74	124	77 F (25 C)	ATSDR	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2-Trichloroethane	79-00-5	$C_2H_3Cl_3$	6.9653	1,351.0	217.0			25		X		24.14	23	77 F (25 C)	HSDB	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	Trichloroethene	79-01-6	C_2HCl_3	7.0281	1,315.1	230.01			28		X		85.31	74	77 F (25 C)	ATSDR	131.389	0.684	0.000684	5.2059E-06	0.0000	8.0255E-06	1.06996E-06
	1,1,2-Trichloro-1,2,2-Trifluorethane	76-13-1	$C_2Cl_3F_3$	33.7192	-2.53E+03	-9.3175	1.46E-08	3.94E-06		298.16		X	331.76	363.6	77 F (25 C)	HSDB	187.38		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Chloride	75-01-4	C_2H_3Cl	6.4971	7.834E+02	2.3001E+02			28		X		2,889.24	2,660	77 F (25 C)	ATSDR	62.499	0.31	0.00031	4.9601E-06	0.0000	2.5896E-04	3.45247E-05
SUBSTITUTED PROPANES/PROPENES																							
(n=6)	3-Chloropropene	107-05-1	C_3H_5Cl	8.6085	-1.75E+03	6.08E-01	-7.17E-03	5.22E-06		298.16		X	368.68	368	77 F (25 C)	HSDB	76.53		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloropropane	78-99-9	$C_3H_6Cl_2$	5.4819	-2.1918E+03	2.6014	-1.1751E-02	7.3435E-06		298.16		X	52.12				112.99		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dichloropropane	78-87-5	$C_3H_6Cl_2$	6.9654	1296.4	221			28		X		57.41	50	77 F (25 C)	HSDB	112.99	0.0217	0.0000217	1.9205E-07	0.0000	1.9923E-07	2.65615E-08
	cis-1,3-Dichloropropene	10061-01-5	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	43	77 F (25 C)	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,3-Dichloropropene	10061-02-6	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	18.5	?	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2,3-Trichloropropane	96-18-4	$C_3H_5Cl_3$	7.0028	1484.1	204.01			25		X		3.33	3.69	77 F (25 C)	HSDB	147.43		0	0.0000E+00	0.0000	0.0000E+00	0
MISCELLANEOUS																							
(n=15)	Acetonitrile	75-05-8	C_2H_3N	7.0735	1279.2	224.01			25		X		86.37	87	75 F (24 C)	HSDB	41.052		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrylonitrile	107-13-1	C_3H_3N	6.9163	1.2083E+03	2.2201E+02			25		X		105.83	100	73 F (23 C)	HSDB	53.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrolein	107-02-8	C_3H_4O	57.9815	-3.0933E+03	-19.6380	1.1486E-02	-2.3854E-14		298.16		X	274.35	210	68 F (20 C)	MDL, 1996	56.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Disulfide	75-15-0	CS_2	6.9419	1168.62	241.54			25		X		360.99	297	68 F (20 C)	HSDB	76.14		0	0.0000E+00	0.0000	0.0000E+00	0
	1-Chloropentane	543-59-9	$C_5H_{11}Cl$	-4.4886	-2.2604E+03	7.8088	-2.3675E-02	1.4884E-05		301.16		X	38.21				106.60						
	Diethyl Ether	60-29-7	$C_4H_{10}O$	6.92032	1064.07	228.8			25		X		534.28	537	77 F (25 C)	HSDB	74.12		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Dioxane	123-91-1	$C_4H_8O_2$	20.5761	-2.47E+03	-4.3645	-2.71E-10	8.52E-07		298.16		X	38.20	37	77 F (25 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Epichlorohydrin	106-89-8	C_3H_5ClO	24.764	-2.8846E+03	-5.6252	-1.1011E-10	5.3331E-07		298.16		X	16.50	13	68 F (20 C)	MDL, 1996	92.53		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Methacrylate	97-63-2	$C_6H_{10}O_2$	27.9574	-2.87E+03	-6.9383	-2.35E-10	1.68E-06		298.16		X	20.59	14	68 F (20 C)	HSDB	114.14		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethylene Oxide	75-21-8	C_2H_4O	7.2701	1115.1	244.15			25		X		1,339.85	1314	77 F (25 C)	HSDB	44.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorobutadiene	87-68-3	C_4Cl_6	35.591	-4.138E+03	-9.0606	2.9025E-10	5.9012E-07		298.16		X	0.22	0.15	68 F (20 C)	HSDB	260.76		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorocyclopentadiene	77-47-4	C_5Cl_6	-9.7942	-3.32E+03	10.171	-2.11E-02	9.02E-06		298.16		X	0.06	0.08	77 F (25 C)	MDL, 1996	272.77		0	0.0000E+00	0.0000	0.0000E+00	0
	Isophorone	78-59-1	$C_9H_{14}O$	0.5931	-4.6647E+03	7.3556	-2.2339E-02	1.0189E-05		298.16		X	0.0025	0.26	68 F (20 C)	MDL, 1996	138.2		0	0.0000E+00	0.0000	0.0000E+00	0
	Propionitrile	107-12-0	C_3H_5N	6.9301	1277.2	218.01			25		X		47.24	40	72 F (22 C)	HSDB	55.08		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrahydrofuran	109-99-9	C_4H_8O	34.87	-2.75E+03	-9.5958	1.99E-10	3.55E-06		298.16		X	162.18	131	68 F (20 C)	HSDB	72.107		0	0.0000E+00	0.0000	0.0000E+00	0

AROMATICS																							
(n=16)	Benzene	71-43-2	C_6H_6	6.90565	1,211.033	220.79			28		X		109.13	95.2	77 F (25 C)	ATSDR	78.114	1.49	0.00149	1.9075E-05	0.0000	3.7617E-05	5.01503E-06
	Benzyl Chloride	100-44-7	C_7H_7Cl	12.1503	-2.91E+03	-0.3712	-5.29E-03	2.63E-06		298.16		X	1.31	1	72 F (22 C)	MDL, 1996	126.58		0	0.0000E+00	0.0000	0.0000E+00	0
	Chlorobenzene	108-90-7	C_6H_5Cl	6.9781	1,431.05	217.56			28		X		14.14	11.8	77 F (25 C)	HSDB	112.558	0.184	0.000184	1.6347E-06	0.0000	4.1764E-07	5.56801E-08
	1,2-Dichlorobenzene	95-50-1	$C_6H_4Cl_2$	7.0703	1649.55	213.32			25		X		1.41	1.47	77 F (25 C)	HSDB	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	1,3-Dichlorobenzene	541-73-1	$C_6H_4Cl_2$	7.3037	1782.4	230.01			25		X		2.06	1.889	77 F (25 C)	MDL, 1996	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Dichlorobenzene	106-46-7	$C_6H_4Cl_2$	6.998	1575.11	208.52			25		X		1.79	1.76	77 F (25 C)	ATSDR	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	2,4-Dinitrotoluene	121-14-2	$C_7H_6N_2O_4$	11.5966	-3.0079E+03	-1.6468	1.5949E-03	-1.8722E-14		298.16		X	8.1E-03	5.1E-03	68 F (20 C)	ATSDR	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
	2,6-Dinitrotoluene	606-20-2	$C_7H_6N_2O_4$	-14.5673	-4.2746E+03	12.904	-2.38E-02	9.4513E-06		298.16		X	5.9E-04	1.80E-02	68 F (20 C)	MDL, 1996	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethylbenzene	100-41-4	C_8H_{10}	6.95719	1424.255	213.206			28		X		11.28	9.53	77 F (25 C)	ATSDR	106.167	0.601	0.000601	5.6609E-06	0.0000	1.1543E-06	1.53889E-07
	Hexachlorobenzene	118-74-1	C_6Cl_6	-134.3625	-1.55E+03	61.748	-6.5123E-02	2.0872E-05		298.16		X	4.824E-05	2.350E-05	77 F (25 C)	Schwarzenbach	284.79		0	0.0000E+00	0.0000	0.0000E+00	0
	Nitrobenzene	98-95-3	$C_6H_5NO_2$	-54.4937	-2.1123E+03	29.321	-4.4839E-02	2.0162E-05		298.16		X	0.25	0.15	68 F (20 C)	ATSDR	123.11		0	0.0000E+00	0.0000	0.0000E+00	0
	Toluene	108-88-3	C_7H_8	6.95464	1344.8	219.482			28		X		33.17	28.5	77 F (25 C)	Yaws, 1992	92.141	5.54	0.00554	6.0125E-05	0.0000	3.6035E-05	4.80424E-06
	1,2,4-Trichlorobenzene	120-82-1	$C_6H_3Cl_3$	15.5947	-2.892E+03	-2.5549	2.0384E-04	-7.0601E-14		298.16		X	0.43	1	101 F (38.4 C)	MDL, 1996	181.46		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Xylene	95-47-6	C_8H_{10}	6.99891	1474.679	213.686			25		X		6.62	10	83 F (28.3 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
	1,3-Xylene	108-38-3	C_8H_{10}	7.00908	1462.266	215.105			25		X		8.30	6.8	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Xylene	106-42-3	C_8H_{10}	6.99052	1453.43	215.307			25		X		8.76	8.84	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
AROMATIC ALCOHOLS																							
(n=8)	2-Chlorophenol	95-57-8	C_6H_5ClO	18.2631	-2.652E+03	-3.6728	8.3047E-10	1.8341E-06		298.16		X	2.78	1	53.8 F (12.1 C)	MDL, 1996	128.56		0	0.0000E+00	0.0000	0.0000E+00	0
	2,4-Dichlorophenol	120-83-2	$C_6H_4Cl_2O$	7.497876	1.890E+03	199.36			25		X		0.12	1	127 F (53 C)	MDL, 1996							
	2,4-Dimethylphenol	105-67-9	$C_8H_{10}O$	53.3866	-5.1516E+03	-15.095	-1.3196E-09	2.8455E-06		298.16		X	1.0E-01	10	198 F (92.3 C)	HSDB	122.16		0	0.0000E+00	0.0000	0.0000E+00	0
	2-Methylphenol	95-48-7	C_7H_8O	6.9117	1435.5	165.16			25		X		0.23	0.299	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	3-Methylphenol	108-39-4	C_7H_8O	7.508	1856.36	199.07			25		X		0.17	0.138	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	4-Methylphenol	106-44-5	C_7H_8O	7.0351	1511.08	161.86			25		X		0.09	0.11	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	Pentachlorophenol	87-86-5	C_6HCl_5O	7.544423	2286.91	180.3596			25		X		0.000256	0.00017	68 F (20 C)	Crosby, 1981	266.35						
	Phenol	108-95-2	C_6H_6O	7.1345	1516.07	174.57			25		X		0.34	0.35	77 F (25 C)	MDL, 1996	94.11		0	0.0000E+00	0.0000	0.0000E+00	0
PAHs																							
(n=9)	Acenaphthene	83-32-9	$C_{12}H_{10}$	28.8173	-4.1623E+03	-8.775	-1.0872E-09	6.3928E-07		298.16		X	1.4E-02	4.47E-03	---	ATSDR	154.21		0	0.0000E+00	0.0000	0.0000E+00	0
	Anthracene	120-12-7	$C_{14}H_{10}$	-120.0992	4.478	52.574	-4.7696E-02	1.5020E-05		298.16		X	1.3E-03	1.7E-05	77 F (25 C)	ATSDR	178.23		0	0.0000E+00	0.0000	0.0000E+00	0
	Chloronaphthalene	25586-43-0	$C_{10}H_7Cl$	93.776	-6.6521E+03	-30.859	1.0748E-02	-3.2318E-14		298.16		X	0.0205				162.61		0	0.0000E+00	0.0000	0.0000E+00	0
	Chrysene	218-01-9	$C_{18}H_{12}$	-50.1566	-3.4381E+03	25.178	-2.462E-02	7.0144E-06		298.16		X	7.89E-07	6.3E-09	77 F (25 C)	ATSDR	228.28		0	0.0000E+00	0.0000	0.0000E+00	0
	Fluoranthene	206-44-0	$C_{16}H_{10}$	70.6802	-6.484E+03	-2.2241E+01	7.2184E-03	-6.3035E-13		298.16		X	1.1E-04	5.0E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
	Fluorene	86-73-7	$C_{13}H_{10}$	53.9382	-5.3622E+03	-16.059	4.5693E-03	8.143E-13		298.16		X	3.8E-03	7.1E-04	---	ATSDR	166.21		0	0.0000E+00	0.0000	0.0000E+00	0
	Naphthalene	91-20-3	$C_{10}H_8$	7.01065	1,733.71	201.859			25		X		2.3E-01	0.05	68 F (20 C)	MDL, 1996	128.16		0	0.0000E+00	0.0000	0.0000E+00	0
	Phenanthrene	85-01-8	$C_{14}H_{10}$	50.2858	-5.7409E+03	-13.935	-8.8520E-10	2.1343E-06		298.16		X	5.5E-04	9.6E-04	77 F (25 C)	ATSDR	178.22		0	0.0000E+00	0.0000	0.0000E+00	0
	Pyrene	129-00-0	$C_{16}H_{10}$	70.7671	-6.9413E+03	-21.79	6.0727E-03	1.5767E-12		298.16		X	2.4E-05	2.5E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
PHTHALATES																							
(n=4)	Dibutyl Phthalate	84-74-2	$C_{16}H_{22}O_4$	152.675	-1.0754E+04	-51.170	1.6933E-02	2.4946E-14		298.16		X	1.1E-05	7.26E-05	77 F (25 C)	Schwarzenbach	278.34		0	0.0000E+00	0.0000	0.0000E+00	0
	Diethyl Phthalate	84-66-2	$C_{12}H_{14}O_4$	72.1438	-7.0747E+03	-21.029	-3.2404E-10	3.4691E-06		298.16		X	4.9E-04	6.32E-03	77 F (25 C)	Schwarzenbach	222.26		0	0.0000E+00	0.0000	0.0000E+00	0
	Dimethyl Phthalate	131-11-3	$C_{10}H_{10}O_4$	12.6974	-4.1989E+03	-0.3463	-7.6524E-03	3.349E-06		298.16		X	5.9E-05	1.82E-02	77 F (25 C)	Schwarzenbach	194.19		0	0.0000E+00	0.0000	0.0000E+00	0
	Dioctyl Phthalate	117-84-0	$C_{24}H_{38}O_4$	27.8473	-7.6834E+03	-2.1134	-1.5234E-02	6.2365E-06		298.16		X	7.3E-08				390.56		0	0.0000E+00	0.0000	0.0000E+00	0
	PCB 1016-1260									301.16			1.0E-04 max				292	0.338	0.000338	1.1575E-06	0.0000	2.0917E-12	2.78864E-13
	Water	7732-18-5	H_2O	29.8605	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16		X	28.40	23.756	77 F (25 C)	Yaws	18.070	999,986.56	999.9865573	5.5340E+01	1.0000	28.4000	3.7863

Total Mass of Solute	Total # of Moles in the Chemical Mixture	Check that the Mole Fractions sum to 1.00	Total Vapor Pressure of the Chemical Mixture (mm Hg)	Total Vapor Pressure of the Chemical Mixture (kPa)
13.44	55.3397	1.0000	28.4005	3.7864

If you have any comments or questions on this program, please contact Dr. David Dolan in Corp. EH&S at (630) 218-1537

Tank Number	1701 and 1702
Tank Size - m^3 (gals)	94.64 (25,000)
Vapor Pressure Limit kPa (psi)	27.6 (4.0)

Chemical Waste Management, Inc.
Emelle, Alabama Facility
Tanks T-1703 and T-1704
Leachate Vapor Pressure Determination

	CHEMICAL	CAS #	Molecular Formula	Antoine's Coefficients					Temperature		Eqn. A	Eqn. B	Estimated Vapor Pressure at Temp (mm Hg)	Measured V.P.	Measurement Conditions	[Ref.]	Mol. Wt.	Conc (mg/L)	Mass of Chemical in Mixture (g/L)	# of Moles of Chemical in Mixture (per L)	Mole Fraction of Chemical in Mixture	Vapor Pressure of Chemical at T and Total V.P. (mm of Hg)	Vapor Pressure of Chemical at T and Total V.P. (kPa)
				A	B	C	D	E	C	K													
ALIPHATICS																							
ACETATES																							
(n=7)	n-Butyl Acetate	123-86-4	$C_6H_{12}O_2$	4.383	-2.71E+03	3.9835	-1.66E-02	9.72E-06		298.16		X	11.53	15	77 F (25 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Acetate	141-78-6	$C_4H_8O_2$	0.6955	-2.25E+03	5.4643	-1.95E-02	1.24E-05		298.16		X	93.43	100	81 F (27 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Acetate	110-19-0	$C_6H_{12}O_2$	35.1224	-3.24E+03	-9.3893	1.79E-11	2.67E-06		298.16		X	17.83	10	55 F (12.8 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Acetate	108-21-4	$C_5H_{10}O_2$	22.2064	-2.50E+03	-4.8975	-2.79E-10	8.34E-07		298.16		X	60.37	59.2	77 F (25 C)	HSDB	102.150		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Acetate	79-20-9	$C_3H_6O_2$	33.7235	-2.72E+03	-9.1182	-9.43E-11	3.31E-06		298.16		X	214.43	216.2	77 F (25 C)	HSDB	74.079		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Acetate	109-60-4	$C_5H_{10}O_2$	43.0548	-3.47E+03	-1.22E+01	2.47E-10	3.75E-06		298.16		X	33.31	33.7	77 F (25 C)	HSDB	102.15		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Acetate	108-05-4	$C_4H_6O_2$	12.722	-2.18E+03	-9.15E-01	-4.57E-03	2.97E-06		298.16		X	114.56	115	77 F (25 C)	HSDB	86.090		0	0.0000E+00	0.0000	0.0000E+00	0
ALCOHOLS																							
(n=9)	n-Butyl Alcohol	71-36-3	$C_4H_{10}O$	7.4768	1362.39	178.73			25		X		6.16	5.5	68 F (20 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	sec-Butyl Alcohol	78-92-2	$C_4H_{10}O$	7.4743	1314.19	186.51			25		X		18.24	18.3	77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	tert-Butyl Alcohol	75-65-0	$C_4H_{10}O$	7.3199	1154.48	177.66			25		X		42.00	41.7	77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Alcohol	64-17-5	C_2H_6O	8.2133	1652.05	231.48			25		X		59.16	62	77 F (25 C)	Gallant & Yaws, Volume 1	46.069		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Alcohol	78-83-1	$C_4H_{10}O$	109.2803	-6.31E+03	-3.69E+01	1.45E-02	-3.95E-13		298.16		X	10.45	10	71.1 F (21.7 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Alcohol	67-63-0	C_3H_8O	8.1182	1580.92	219.62			25		X		45.23	44.0	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Alcohol	67-56-1	CH_4O	8.0724	1574.99	238.87			25		X		126.94	129	77 F (25 C)	Gallant & Yaws, Volume 1	32.042		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Alcohol	71-23-8	C_3H_8O	7.6192	1375.14	193.01			25		X		20.49	20.8	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	2-Butoxyethanol	111-76-2	$C_6H_{14}O$	-39.3735	-3.01E+03	2.57E+01	-5.73E-02	3.27E-05		298.16		X	0.87	0.88	77 F (25 C)	HSDB	118.200		0	0.0000E+00	0.0000	0.0000E+00	0
KETONES																							
(n=3)	Acetone	67-64-1	C_3H_6O	28.5884	-2.47E+03	-7.351	2.80E-10	2.74E-06		298.16		X	229.71	231	77 F (25 C)	HSDB	58.080		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Ethyl Ketone	78-93-3	C_4H_8O	7.2087	1368.21	236.51			25		X		94.78	90.6	77 F (25 C)	ATSDR	72.107		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Isobutyl Ketone	108-10-1	$C_6H_{12}O$	64.1919	-4.36E+03	-1.96E+01	-4.00E-10	7.10E-06		298.16		X	19.86	14.5	68 F (20 C)	HSDB	100.16		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED METHANES																							
(n=9)	Bromoform	75-25-2	$CHBr_3$	-10.2943	-2.17E+03	9.1193	-1.6495E-02	7.4917E-06		298.16		X	5.51	5.6	68 F (20 C)	MDL, 1996	252.75		0	0.0000E+00	0.0000	0.0000E+00	0
	Chloroform	67-66-3	$CHCl_3$	6.9371	1.1712E+03	2.27E+02			25		X		194.75	195	77 F (25 C)	Yaws, 1992	119.378		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Tetrachloride	56-23-5	CCl_4	6.8941	1.21958E+03	2.2717E+02			25		X		114.22	108	77 F (25 C)	HSDB	153.823		0	0.0000E+00	0.0000	0.0000E+00	0
	Dichlorodifluoromethane	75-71-8	CCl_2F_2	6.68619	782.072	235.377			25		X		4,814.78	4,393	70.0 F (21.1 C)	MDL, 1996	120.91		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Bromide	74-83-9	CH_3Br	6.9597	9.8659E+02	2.3833E+02			25		X		1,633.46	1,420	68 F (20 C)	HSDB	94.95		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Chloride	74-87-3	CH_3Cl	6.9944	9.0245E+02	2.4361E+02			25		X		4,312.17	3,600	68 F (20 C)	MDL, 1996	50.49		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Bromide	74-95-3	CH_2Br_2	35.3525	-3.04E+03	-9.5972	5.83E-10	2.94E-06		298.16		X	45.24	40	73.9 F (23.3 C)	HSDB	173.83		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Chloride	75-09-2	CH_2Cl_2	7.0803	1138.91	231.46			28		X		490.64	400	75.4 F (24.1 C)	HSDB	84.933	0.918	0.000918	1.0809E-05	0.0000	9.5827E-05	1.27757E-05
	Trichlorofluoromethane	75-69-4	CCl_3F	6.8843	1,043.01	236.86			25		X		796.56	690	68 F (20 C)	MDL, 1996	137.38		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED ETHANES/ETHENES																							
(n=16)	Chloroethane	75-00-3	C_2H_5Cl	6.94	1.01278E+03	2.3668E+02			25		X		1,174.09	1,000	68 F (20 C)	MDL, 1996	64.52		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dibromoethane	106-93-4	$C_2H_4Br_2$	6.72148	1280.82	201.75			25		X		11.83	8.5	68 F (20 C)	HSDB	187.88		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloroethane	75-34-3	$C_2H_4Cl_2$	33.38	-2.6102E+03	-9.1336	-2.8388E-11	3.7323E-06		301.16		X	257.64	230	77 F (25 C)	ATSDR	98.960	2.16	0.00216	2.1827E-05	0.0000	1.0162E-04	1.35477E-05
	1,2-Dichloroethane	107-06-2	$C_2H_4Cl_2$	48.4226	-3.1803E+03	-15.37	7.2935E-03	2.6844E-14		301.16		X	91.17	79	77 F (25 C)	EPA, 1992	98.960	0.254	0.000254	2.5667E-06	0.0000	4.2283E-06	5.63717E-07
	1,1-Dichloroethene	75-35-4	$C_2H_2Cl_2$	-18.5419	-1.6655E+03	1.3923E+01	-4.0958E-02	2.9995E-05		301.16		X	669.37	591	77 F (25C)	ATSDR	96.944	0.103	0.000103	1.0625E-06	0.0000	1.2851E-05	1.71333E-06
	cis-1,2-Dichloroethene	156-59-2	$C_2H_2Cl_2$	7.0223	1205.4	230.6			25		X		202.46	215	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,2-Dichloroethene	156-60-5	$C_2H_2Cl_2$	48.4574	-3.0496E+03	-14.694	-2.1262E-09	7.3465E-06		298.16		X	333.33	336	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachloroethane	67-72-1	C_2Cl_6	7.08633	1626.945	197.048			25		X		0.57	0.4	68 F (20 C)	HSDB	236.74		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,1,2-Tetrachloroethane	630-20-6	$C_2H_2Cl_4$	-1.07112	-2.51E+03	6.1536	-1.88E-02	1.05E-05		298.16		X	12.07	14	77 F (25 C)	HSDB	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2,2-Tetrachloroethane	79-34-5	$C_2H_2Cl_4$	56.2356	-4.4615E+03	-16.556	-3.5724E-10	4.0425E-06		298.16		X	4.62	8	68 F (20 C)	MDL, 1996	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrachloroethene	127-18-4	C_2Cl_4	7.02	1415.49	221.10			28		X		21.76	18.47	77 F (25 C)	HSDB	165.834	0.839	0.000839	5.0593E-06	0.0000	1.9890E-06	2.65173E-07
	1,1,1-Trichloroethane	71-55-6	$C_2H_3Cl_3$	36.5468	-2.8421E+03	-10.205	-2.6369E-09	3.7075E-06		298.16		X	123.74	124	77 F (25 C)	ATSDR	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2-Trichloroethane	79-00-5	$C_2H_3Cl_3$	6.9653	1,351.0	217.0			25		X		24.14	23	77 F (25 C)	HSDB	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	Trichloroethene	79-01-6	C_2HCl_3	7.0281	1,315.1	230.01			28		X		85.31	74	77 F (25 C)	ATSDR	131.389	0.684	0.000684	5.2059E-06	0.0000	8.0255E-06	1.06996E-06
	1,1,2-Trichloro-1,2,2-Trifluorethane	76-13-1	$C_2Cl_3F_3$	33.7192	-2.53E+03	-9.3175	1.46E-08	3.94E-06		298.16		X	331.76	363.6	77 F (25 C)	HSDB	187.38		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Chloride	75-01-4	C_2H_3Cl	6.4971	7.834E+02	2.3001E+02			28		X		2,889.24	2,660	77 F (25 C)	ATSDR	62.499	0.31	0.00031	4.9601E-06	0.0000	2.5896E-04	3.45247E-05
SUBSTITUTED PROPANES/PROPENES																							
(n=6)	3-Chloropropene	107-05-1	C_3H_5Cl	8.6085	-1.75E+03	6.08E-01	-7.17E-03	5.22E-06		298.16		X	368.68	368	77 F (25 C)	HSDB	76.53		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloropropane	78-99-9	$C_3H_6Cl_2$	5.4819	-2.1918E+03	2.6014	-1.1751E-02	7.3435E-06		298.16		X	52.12				112.99		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dichloropropane	78-87-5	$C_3H_7Cl_2$	6.9654	1296.4	221			28		X		57.41	50	77 F (25 C)	HSDB	112.99	0.0217	0.0000217	1.9205E-07	0.0000	1.9923E-07	2.65615E-08
	cis-1,3-Dichloropropene	10061-01-5	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	43	77 F (25 C)	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,3-Dichloropropene	10061-02-6	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	18.5	?	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2,3-Trichloropropane	96-18-4	$C_3H_5Cl_3$	7.0028	1484.1	204.01			25		X		3.33	3.69	77 F (25 C)	HSDB	147.43		0	0.0000E+00	0.0000	0.0000E+00	0
MISCELLANEOUS																							
(n=15)	Acetonitrile	75-05-8	C_2H_3N	7.0735	1279.2	224.01			25		X		86.37	87	75 F (24 C)	HSDB	41.052		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrylonitrile	107-13-1	C_3H_3N	6.9163	1.2083E+03	2.2201E+02			25		X		105.83	100	73 F (23 C)	HSDB	53.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrolein	107-02-8	C_3H_4O	57.9815	-3.0933E+03	-19.6380	1.1486E-02	-2.3854E-14		298.16		X	274.35	210	68 F (20 C)	MDL, 1996	56.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Disulfide	75-15-0	CS_2	6.9419	1168.62	241.54			25		X		360.99	297	68 F (20 C)	HSDB	76.14		0	0.0000E+00	0.0000	0.0000E+00	0
	1-Chloropentane	543-59-9	$C_5H_{11}Cl$	-4.4886	-2.2604E+03	7.8088	-2.3675E-02	1.4884E-05		301.16		X	38.21				106.60						
	Diethyl Ether	60-29-7	$C_4H_{10}O$	6.92032	1064.07	228.8			25		X		534.28	537	77 F (25 C)	HSDB	74.12		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Dioxane	123-91-1	$C_4H_8O_2$	20.5761	-2.47E+03	-4.3645	-2.71E-10	8.52E-07		298.16		X	38.20	37	77 F (25 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Epichlorohydrin	106-89-8	C_3H_5ClO	24.764	-2.8846E+03	-5.6252	-1.1011E-10	5.3331E-07		298.16		X	16.50	13	68 F (20 C)	MDL, 1996	92.53		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Methacrylate	97-63-2	$C_6H_{10}O_2$	27.9574	-2.87E+03	-6.9383	-2.35E-10	1.68E-06		298.16		X	20.59	14	68 F (20 C)	HSDB	114.14		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethylene Oxide	75-21-8	C_2H_4O	7.2701	1115.1	244.15			25		X		1,339.85	1314	77 F (25 C)	HSDB	44.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorobutadiene	87-68-3	C_4Cl_6	35.591	-4.138E+03	-9.0606	2.9025E-10	5.9012E-07		298.16		X	0.22	0.15	68 F (20 C)	HSDB	260.76		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorocyclopentadiene	77-47-4	C_5Cl_6	-9.7942	-3.32E+03	10.171	-2.11E-02	9.02E-06		298.16		X	0.06	0.08	77 F (25 C)	MDL, 1996	272.77		0	0.0000E+00	0.0000	0.0000E+00	0
	Isophorone	78-59-1	$C_9H_{14}O$	0.5931	-4.6647E+03	7.3556	-2.2339E-02	1.0189E-05		298.16		X	0.0025	0.26	68 F (20 C)	MDL, 1996	138.2		0	0.0000E+00	0.0000	0.0000E+00	0
	Propionitrile	107-12-0	C_3H_5N	6.9301	1277.2	218.01			25		X		47.24	40	72 F (22 C)	HSDB	55.08		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrahydrofuran	109-99-9	C_4H_8O	34.87	-2.75E+03	-9.5958	1.99E-10	3.55E-06		298.16		X	162.18	131	68 F (20 C)	HSDB	72.107		0	0.0000E+00	0.0000	0.0000E+00	0

AROMATICS																							
(n=16)	Benzene	71-43-2	C_6H_6	6.90565	1,211.033	220.79			28		X		109.13	95.2	77 F (25 C)	ATSDR	78.114	1.49	0.00149	1.9075E-05	0.0000	3.7617E-05	5.01503E-06
	Benzyl Chloride	100-44-7	C_7H_7Cl	12.1503	-2.91E+03	-0.3712	-6.29E-03	2.63E-06		298.16		X	1.31	1	72 F (22 C)	MDL, 1996	126.58		0	0.0000E+00	0.0000	0.0000E+00	0
	Chlorobenzene	108-90-7	C_6H_5Cl	6.9781	1,431.05	217.56			28		X		14.14	11.8	77 F (25 C)	HSDB	112.568	0.184	0.000184	1.6347E-06	0.0000	4.1764E-07	5.56801E-08
	1,2-Dichlorobenzene	95-50-1	$C_6H_4Cl_2$	7.0703	1649.55	213.32			25		X		1.41	1.47	77 F (25 C)	HSDB	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	1,3-Dichlorobenzene	541-73-1	$C_6H_4Cl_2$	7.3037	1782.4	230.01			25		X		2.06	1.889	77 F (25 C)	MDL, 1996	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Dichlorobenzene	106-46-7	$C_6H_4Cl_2$	6.996	1575.11	208.52			25		X		1.79	1.76	77 F (25 C)	ATSDR	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	2,4-Dinitrotoluene	121-14-2	$C_7H_6N_2O_4$	11.5966	-3.0079E+03	-1.6468	1.5949E-03	-1.8722E-14		298.16		X	8.1E-03	5.1E-03	68 F (20 C)	ATSDR	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
	2,6-Dinitrotoluene	606-20-2	$C_7H_6N_2O_4$	-14.5673	-4.2746E+03	12.904	-2.38E-02	9.4513E-06		298.16		X	5.9E-04	1.80E-02	68 F (20 C)	MDL, 1996	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethylbenzene	100-41-4	C_8H_{10}	6.95719	1424.255	213.206			28		X		11.28	9.53	77 F (25 C)	ATSDR	106.167	0.601	0.000601	5.6609E-06	0.0000	1.1543E-06	1.53889E-07
	Hexachlorobenzene	118-74-1	C_6Cl_6	-134.3625	-1.55E+03	61.748	-6.5123E-02	2.0872E-05		298.16		X	4.824E-05	2.350E-05	77 F (25 C)	Schwarzenbach	284.79		0	0.0000E+00	0.0000	0.0000E+00	0
	Nitrobenzene	98-95-3	$C_6H_5NO_2$	-54.4937	-2.1123E+03	29.321	-4.4839E-02	2.0162E-05		298.16		X	0.25	0.15	68 F (20 C)	ATSDR	123.11		0	0.0000E+00	0.0000	0.0000E+00	0
	Toluene	108-88-3	C_7H_8	6.95464	1344.8	219.482			28		X		33.17	28.5	77 F (25 C)	Yaws, 1992	92.141	5.54	0.00554	6.0125E-05	0.0000	3.6035E-05	4.80424E-06
	1,2,4-Trichlorobenzene	120-82-1	$C_6H_3Cl_3$	15.5947	-2.892E+03	-2.5549	2.0384E-04	-7.0601E-14		298.16		X	0.43	1	101 F (38.4 C)	MDL, 1996	181.46		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Xylene	95-47-6	C_8H_{10}	6.99891	1474.679	213.686			25		X		6.62	10	83 F (28.3 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
	1,3-Xylene	108-38-3	C_8H_{10}	7.00908	1462.266	215.105			25		X		8.30	8.8	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Xylene	106-42-3	C_8H_{10}	6.99052	1453.43	215.307			25		X		8.76	8.84	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
AROMATIC ALCOHOLS																							
(n=8)	2-Chlorophenol	95-57-8	C_6H_5ClO	18.2631	-2.652E+03	-3.6728	8.3047E-10	1.8341E-06		298.16		X	2.78	1	53.8 F (12.1 C)	MDL, 1996	128.56		0	0.0000E+00	0.0000	0.0000E+00	0
	2,4-Dichlorophenol	120-83-2	$C_6H_4Cl_2O$	7.497876	1.890E+03	199.36			25		X		0.12	1	127 F (53 C)	MDL, 1996							
	2,4-Dimethylphenol	105-67-9	$C_8H_{10}O$	53.3866	-5.1516E+03	-15.095	-1.3196E-09	2.8455E-06		298.16		X	1.0E-01	10	198 F (92.3 C)	HSDB	122.16		0	0.0000E+00	0.0000	0.0000E+00	0
	2-Methylphenol	95-48-7	C_7H_8O	6.9117	1435.5	165.16			25		X		0.23	0.299	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	3-Methylphenol	108-39-4	C_7H_8O	7.508	1856.36	199.07			25		X		0.17	0.138	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	4-Methylphenol	106-44-5	C_7H_8O	7.0351	1511.08	161.86			25		X		0.09	0.11	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	Pentachlorophenol	87-86-5	C_6HCl_5O	7.544423	2286.91	180.3596			25		X		0.000256	0.00017	68 F (20 C)	Crosby, 1981	266.35						
	Phenol	108-95-2	C_6H_6O	7.1345	1516.07	174.57			25		X		0.34	0.35	77 F (25 C)	MDL, 1996	94.11		0	0.0000E+00	0.0000	0.0000E+00	0
PAHs																							
(n=9)	Acenaphthene	83-32-9	$C_{12}H_{10}$	28.8173	-4.1623E+03	-6.775	-1.0872E-09	6.3928E-07		298.16		X	1.4E-02	4.47E-03	—	ATSDR	154.21		0	0.0000E+00	0.0000	0.0000E+00	0
	Anthracene	120-12-7	$C_{14}H_{10}$	-120.0992	4.478	52.574	-4.7696E-02	1.5020E-05		298.16		X	1.3E-03	1.7E-05	77 F (25 C)	ATSDR	178.23		0	0.0000E+00	0.0000	0.0000E+00	0
	Chloronaphthalene	25586-43-0	$C_{10}H_7Cl$	93.776	-6.6521E+03	-30.859	1.0748E-02	-3.2318E-14		298.16		X	0.0205				162.61		0	0.0000E+00	0.0000	0.0000E+00	0
	Chrysene	218-01-9	$C_{18}H_{12}$	-50.1566	-3.4381E+03	25.178	-2.462E-02	7.0144E-06		298.16		X	7.89E-07	6.3E-09	77 F (25 C)	ATSDR	228.28		0	0.0000E+00	0.0000	0.0000E+00	0
	Fluoranthene	206-44-0	$C_{16}H_{10}$	70.6802	-6.484E+03	-2.2241E+01	7.2184E-03	-6.3035E-13		298.16		X	1.1E-04	5.0E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
	Fluorene	86-73-7	$C_{13}H_{10}$	53.9382	-5.3622E+03	-16.059	4.5693E-03	8.143E-13		298.16		X	3.8E-03	7.1E-04	—	ATSDR	166.21		0	0.0000E+00	0.0000	0.0000E+00	0
	Naphthalene	91-20-3	$C_{10}H_8$	7.01065	1,733.71	201.859			25		X		2.3E-01	0.05	68 F (20 C)	MDL, 1996	128.16		0	0.0000E+00	0.0000	0.0000E+00	0
	Phenanthrene	85-01-8	$C_{14}H_{10}$	50.2858	-5.7409E+03	-13.935	-8.8520E-10	2.1343E-06		298.16		X	5.5E-04	9.6E-04	77 F (25 C)	ATSDR	178.22		0	0.0000E+00	0.0000	0.0000E+00	0
	Pyrene	129-00-0	$C_{16}H_{10}$	70.7671	-6.9413E+03	-21.79	6.0727E-03	1.5787E-12		298.16		X	2.4E-05	2.5E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
PHTHALATES																							
(n=4)	Dibutyl Phthalate	84-74-2	$C_{16}H_{22}O_4$	152.675	-1.0754E+04	-51.170	1.6933E-02	2.4948E-14		298.16		X	1.1E-05	7.26E-05	77 F (25 C)	Schwarzenbach	278.34		0	0.0000E+00	0.0000	0.0000E+00	0
	Diethyl Phthalate	84-66-2	$C_{12}H_{14}O_4$	72.1438	-7.0747E+03	-21.029	-3.2404E-10	3.4691E-06		298.16		X	4.9E-04	6.32E-03	77 F (25 C)	Schwarzenbach	222.26		0	0.0000E+00	0.0000	0.0000E+00	0
	Dimethyl Phthalate	131-11-3	$C_{10}H_{10}O_4$	12.6974	-4.1989E+03	-0.3463	-7.6524E-03	3.349E-06		298.16		X	5.9E-05	1.82E-02	77 F (25 C)	Schwarzenbach	194.19		0	0.0000E+00	0.0000	0.0000E+00	0
	Dioctyl Phthalate	117-84-0	$C_{24}H_{38}O_4$	27.6473	-7.6834E+03	-2.1134	-1.5234E-02	6.2365E-06		298.16		X	7.3E-08				390.56		0	0.0000E+00	0.0000	0.0000E+00	0
	PCB 1016-1260									301.16			1.0E-04 max				292	0.338	0.000338	1.1575E-06	0.0000	2.0917E-12	2.78884E-13
	Water	7732-18-5	H_2O	29.8605	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16		X	28.40	23.756	77 F (25 C)	Yaws	18.070	999,986.56	999.9865573	5.5340E-01	1.0000	28.4000	3.7863
																		Total Mass of Solute 13.44		*Total # of Moles in the Chemical Mixture* 55.3397	*Check that the Mole Fractions sum to 1.00* 1.0000	*Total Vapor Pressure of the Chemical Mixture (mm Hg)* 28.4005	*Total Vapor Pressure of the Chemical Mixture (kPa)* 3.7864

If you have any comments or questions on this program, please contact Dr. David Dolan in Corp. EH&S at (630) 218-1537

Tank Number	1703 and 1704
Tank Size - m³ (gals)	94.64 (25,000)
Vapor Pressure Limit kPa (psi)	27.6 (4.0)

	CHEMICAL	CAS #	Molecular Formula	Antoine's Coefficients A	B	C	D	E	Temperature C	K	Eqn. A	Eqn. B	Estimated Vapor Pressure at Temp (mm Hg)	Measured V.P.	Measurement Conditions	[Ref.]	Mol. Wt.	Conc (mg/L)	Mass of Chemical in Mixture (g/L)	# of Moles of Chemical in Mixture (per L)	Mole Fraction of Chemical in Mixture	Vapor Pressure of Chemical at T and Total V.P. (mm of Hg)	Vapor Pressure of Chemical at T and Total V.P. (kPa)
ALIPHATICS																							
ACETATES																							
(n=7)	n-Butyl Acetate	123-86-4	$C_6H_{12}O_2$	4.383	-2.71E+03	3.9635	-1.66E-02	9.72E-06		298.16		X	11.53	15	77 F (25 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Acetate	141-78-6	$C_4H_8O_2$	0.6955	-2.25E+03	5.4643	-1.95E-02	1.24E-05		298.16		X	93.43	100	81 F (27 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Acetate	110-19-0	$C_6H_{12}O_2$	35.1224	-3.24E+03	-9.3693	1.79E-11	2.67E-06		298.16		X	17.83	10	55 F (12.8 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Acetate	108-21-4	$C_5H_{10}O_2$	22.2064	-2.50E+03	-4.6975	-2.79E-10	8.34E-07		298.16		X	60.37	59.2	77 F (25 C)	HSDB	102.150		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Acetate	79-20-9	$C_3H_6O_2$	33.7235	-2.72E+03	-9.1182	-9.43E-11	3.31E-06		298.16		X	214.43	216.2	77 F (25 C)	HSDB	74.079		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Acetate	109-60-4	$C_5H_{10}O_2$	43.0548	-3.47E+03	-1.22E+01	2.47E-10	3.75E-06		298.16		X	33.31	33.7	77 F (25 C)	HSDB	102.15		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Acetate	108-05-4	$C_4H_6O_2$	12.722	-2.18E+03	-9.15E-01	-4.57E-03	2.97E-06		298.16		X	114.56	115	77 F (25 C)	HSDB	86.090		0	0.0000E+00	0.0000	0.0000E+00	0
ALCOHOLS																							
(n=9)	n-Butyl Alcohol	71-36-3	$C_4H_{10}O$	7.4768	1362.39	178.73			25		X		6.16	5.5	68 F (20 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	sec-Butyl Alcohol	78-92-2	$C_4H_{10}O$	7.4743	1314.19	186.51			25		X		18.24	18.3	77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	tert-Butyl Alcohol	75-65-0	$C_4H_{10}O$	7.3199	1154.48	177.66			25		X		42.00	41.7	77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Alcohol	64-17-5	C_2H_6O	8.2133	1652.05	231.48			25		X		59.16	62	77 F (25 C)	Gallant & Yaws, Volume 1	46.069		0	0.0000E+00	0.0000	0.0000E+00	0
	Isobutyl Alcohol	78-83-1	$C_4H_{10}O$	109.2803	-6.31E+03	-3.69E+01	1.45E-02	-3.95E-13		298.16		X	10.45	10	71.1 F (21.7 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	0
	Isopropyl Alcohol	67-63-0	C_3H_8O	8.1182	1580.92	219.62			25		X		45.23	44.0	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Alcohol	67-56-1	CH_4O	8.0724	1574.99	238.87			25		X		126.94	129	77 F (25 C)	Gallant & Yaws, Volume 1	32.042		0	0.0000E+00	0.0000	0.0000E+00	0
	n-Propyl Alcohol	71-23-8	C_3H_8O	7.6192	1375.14	193.01			25		X		20.49	20.8	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	0
	2-Butoxyethanol	111-76-2	$C_6H_{14}O$	-39.3735	-3.01E+03	2.57E+01	-5.73E-02	3.27E-05		298.16		X	0.87	0.88	77 F (25 C)	HSDB	118.200		0	0.0000E+00	0.0000	0.0000E+00	0
KETONES																							
(n=3)	Acetone	67-64-1	C_3H_6O	28.5884	-2.47E+03	-7.351	2.80E-10	2.74E-06		298.16		X	229.71	231	77 F (25 C)	HSDB	58.080		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Ethyl Ketone	78-93-3	C_4H_8O	7.2087	1368.21	236.51			25		X		94.78	90.6	77 F (25 C)	ATSDR	72.107		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Isobutyl Ketone	108-10-1	$C_6H_{12}O$	64.1919	-4.36E+03	-1.98E+01	-4.00E-10	7.10E-06		298.16		X	19.86	14.5	68 F (20 C)	HSDB	100.16		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED METHANES																							
(n=9)	Bromoform	75-25-2	$CHBr_3$	-10.2943	-2.17E+03	9.1193	-1.6495E-02	7.4917E-06		298.16		X	5.51	5.6	68 F (20 C)	MDL, 1996	252.75		0	0.0000E+00	0.0000	0.0000E+00	0
	Chloroform	67-66-3	$CHCl_3$	6.9371	1.1712E+03	2.27E+02			25		X		194.75	195	77 F (25 C)	Yaws, 1992	119.378		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Tetrachloride	56-23-5	CCl_4	6.8941	1.21958E+03	2.2717E+02			25		X		114.22	108	77 F (25 C)	HSDB	153.823		0	0.0000E+00	0.0000	0.0000E+00	0
	Dichlorodifluoromethane	75-71-8	CCl_2F_2	6.68619	782.072	235.377			25		X		4,814.78	4,393	70.0 F (21.1 C)	MDL, 1996	120.91		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Bromide	74-83-9	CH_3Br	6.9597	9.8659E+02	2.3833E+02			25		X		1,633.46	1,420	68 F (20 C)	HSDB	94.95		0	0.0000E+00	0.0000	0.0000E+00	0
	Methyl Chloride	74-87-3	CH_3Cl	6.9944	9.0245E+02	2.4361E+02			25		X		4,312.17	3,600	68 F (20 C)	MDL, 1996	50.49		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Bromide	74-95-3	CH_2Br_2	35.3525	-3.04E+03	-9.5972	5.83E-10	2.94E-06		298.16		X	45.24	40	73.9 F (23.3 C)	HSDB	173.83		0	0.0000E+00	0.0000	0.0000E+00	0
	Methylene Chloride	75-09-2	CH_2Cl_2	7.0803	1138.91	231.46			28		X		490.64	400	75.4 F (24.1 C)	HSDB	84.933	2.27	0.00227	2.6727E-05	0.0000	2.3697E-04	3.15927E-05
	Trichlorofluoromethane	75-69-4	CCl_3F	6.8843	1,043.01	236.86			25		X		796.56	690	68 F (20 C)	MDL, 1996	137.38		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED ETHANES/ETHENES																							
(n=16)	Chloroethane	75-00-3	C_2H_5Cl	6.94	1.01278E+03	2.3668E+02			25		X		1,174.09	1,000	68 F (20 C)	MDL, 1996	64.52		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dibromoethane	106-93-4	$C_2H_4Br_2$	6.72148	1280.82	201.75			25		X		11.83	8.5	68 F (20 C)	HSDB	187.88		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloroethane	75-34-3	$C_2H_4Cl_2$	33.38	-2.6102E+03	-9.1336	-2.8388E-11	3.7323E-06		298.16		X	227.41	230	77 F (25 C)	ATSDR	98.960		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dichloroethane	107-06-2	$C_2H_4Cl_2$	48.4226	-3.1803E+03	-15.37	7.2935E-03	2.6844E-14		298.16		X	79.16	79	77 F (25 C)	EPA, 1992	98.960		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloroethene	75-35-4	$C_2H_2Cl_2$	-16.5419	-1.6655E+03	1.3923E+01	-4.0958E-02	2.9995E-05		298.16		X	600.39	591	77 F (25C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	cis-1,2-Dichloroethene	156-59-2	$C_2H_2Cl_2$	7.0223	1205.4	230.6			25		X		202.46	215	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,2-Dichloroethene	156-60-5	$C_2H_2Cl_2$	48.4574	-3.0496E+03	-14.694	-2.1262E-09	7.3465E-06		298.16		X	333.33	336	77 F (25 C)	ATSDR	96.944		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachloroethane	67-72-1	C_2Cl_6	7.08633	1626.945	197.048			25		X		0.57	0.4	68 F (20 C)	HSDB	236.74		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,1,2-Tetrachloroethane	630-20-6	$C_2H_2Cl_4$	-1.07112	-2.51E+03	6.1536	-1.88E-02	1.05E-05		298.16		X	12.07	14	77 F (25 C)	HSDB	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2,2-Tetrachloroethane	79-34-5	$C_2H_2Cl_4$	56.2356	-4.4615E+03	-16.556	-3.5724E-10	4.0425E-06		298.16		X	4.62	8	68 F (20 C)	MDL, 1996	167.85		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrachloroethene	127-18-4	C_2Cl_4	7.02	1415.49	221.10			25		X		18.55	16.47	77 F (25 C)	HSDB	165.834		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,1-Trichloroethane	71-55-6	$C_2H_3Cl_3$	36.5468	-2.8421E+03	-10.205	-2.6369E-09	3.7075E-06		298.16		X	123.74	124	77 F (25 C)	ATSDR	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2-Trichloroethane	79-00-5	$C_2H_3Cl_3$	6.9653	1,351.0	217.0			25		X		24.14	23	77 F (25 C)	HSDB	133.405		0	0.0000E+00	0.0000	0.0000E+00	0
	Trichloroethene	79-01-6	C_2HCl_3	7.0281	1,315.1	230.01			25		X		74.31	74	77 F (25 C)	ATSDR	131.389		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1,2-Trichloro-1,2,2-Trifluorethane	76-13-1	$C_2Cl_3F_3$	33.7192	-2.53E+03	-9.3175	1.46E-08	3.94E-06		298.16		X	331.76	363.6	77 F (25 C)	HSDB	187.38		0	0.0000E+00	0.0000	0.0000E+00	0
	Vinyl Chloride	75-01-4	C_2H_3Cl	6.4971	7.834E+02	2.3001E+02			25		X		2,661.11	2,660	77 F (25 C)	ATSDR	62.499		0	0.0000E+00	0.0000	0.0000E+00	0
SUBSTITUTED PROPANES/PROPENES																							
(n=6)	3-Chloropropene	107-05-1	C_3H_5Cl	8.6085	-1.75E+03	6.08E-01	-7.17E-03	5.22E-06		298.16		X	368.68	368	77 F (25 C)	HSDB	76.53		0	0.0000E+00	0.0000	0.0000E+00	0
	1,1-Dichloropropane	78-99-9	$C_3H_6Cl_2$	5.4819	-2.1918E+03	2.6014	-1.1751E-02	7.3435E-06		298.16		X	52.12				112.99		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Dichloropropane	78-87-5	$C_3H_7Cl_2$	6.9654	1296.4	221			25		X		49.60	50	77 F (25 C)	HSDB	112.99		0	0.0000E+00	0.0000	0.0000E+00	0
	cis-1,3-Dichloropropene	10061-01-5	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	43	77 F (25 C)	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	trans-1,3-Dichloropropene	10061-02-6	$C_3H_4Cl_2$	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	18.5	?	HSDB	110.97		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2,3-Trichloropropane	96-18-4	$C_3H_5Cl_3$	7.0028	1484.1	204.01			25		X		3.33	3.69	77 F (25 C)	HSDB	147.43		0	0.0000E+00	0.0000	0.0000E+00	0
MISCELLANEOUS																							
(n=15)	Acetonitrile	75-05-8	C_2H_3N	7.0735	1279.2	224.01			25		X		86.37	87	75 F (24 C)	HSDB	41.052		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrylonitrile	107-13-1	C_3H_3N	6.9163	1.2083E+03	2.2201E+02			25		X		105.83	100	73 F (23 C)	HSDB	53.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Acrolein	107-02-8	C_3H_4O	57.9815	-3.0933E+03	-19.6380	1.1486E-02	-2.3854E-14		298.16		X	274.35	210	68 F (20 C)	MDL, 1996	56.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Carbon Disulfide	75-15-0	CS_2	6.9419	1168.62	241.54			25		X		360.99	297	68 F (20 C)	HSDB	76.14		0	0.0000E+00	0.0000	0.0000E+00	0
	1-Chloropentane	543-59-9	$C_5H_{11}Cl$	-4.4886	-2.2604E+03	7.8088	-2.3675E-02	1.4884E-05		301.16		X	38.21				106.60						
	Diethyl Ether	60-29-7	$C_4H_{10}O$	6.92032	1064.07	228.8			25		X		534.28	537	77 F (25 C)	HSDB	74.12		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Dioxane	123-91-1	$C_4H_8O_2$	20.5761	-2.47E+03	-4.3645	-2.71E-10	8.52E-07		298.16		X	38.20	37	77 F (25 C)	HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	0
	Epichlorohydrin	106-89-8	C_3H_5ClO	24.764	-2.8846E+03	-5.6252	-1.1011E-10	5.3331E-07		298.16		X	16.50	13	68 F (20 C)	MDL, 1996	92.53		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethyl Methacrylate	97-63-2	$C_6H_{10}O_2$	27.9574	-2.87E+03	-6.9383	-2.35E-10	1.68E-06		298.16		X	20.59	14	68 F (20 C)	HSDB	114.14		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethylene Oxide	75-21-8	C_2H_4O	7.2701	1115.1	244.15			25		X		1,339.85	1314	77 F (25 C)	HSDB	44.06		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorobutadiene	87-68-3	C_4Cl_6	35.591	-4.138E+03	-9.0606	2.9025E-10	5.9012E-07		298.16		X	0.22	0.15	68 F (20 C)	HSDB	260.76		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorocyclopentadiene	77-47-4	C_5Cl_6	-9.7942	-3.32E+03	10.171	-2.11E-02	9.02E-06		298.16		X	0.06	0.08	77 F (25 C)	MDL, 1996	272.77		0	0.0000E+00	0.0000	0.0000E+00	0
	Isophorone	78-59-1	$C_9H_{14}O$	0.5931	-4.6647E+03	7.3556	-2.2339E-02	1.0189E-05		298.16		X	0.0025	0.26	68 F (20 C)	MDL, 1996	138.2		0	0.0000E+00	0.0000	0.0000E+00	0
	Propionitrile	107-12-0	C_3H_5N	6.9301	1277.2	218.01			25		X		47.24	40	72 F (22 C)	HSDB	55.08		0	0.0000E+00	0.0000	0.0000E+00	0
	Tetrahydrofuran	109-99-9	C_4H_8O	34.87	-2.75E+03	-9.5958	1.99E-10	3.55E-06		298.16		X	162.18	131	68 F (20 C)	HSDB	72.107		0	0.0000E+00	0.0000	0.0000E+00	0

AROMATICS (n=16)	Benzene	71-43-2	C_6H_6	6.90565	1,211.033	220.79			25		X		95.18	95.2	77 F (25 C)	ATSDR	78.114		0	0.0000E+00	0.0000	0.0000E+00	0
	Benzyl Chloride	100-44-7	C_7H_7Cl	12.1503	-2.91E+03	-0.3712	-6.29E-03	2.63E-06		298.16		X	1.31	1	72 F (22 C)	MDL, 1996	126.58		0	0.0000E+00	0.0000	0.0000E+00	0
	Chlorobenzene	108-90-7	C_6H_5Cl	6.9781	1,431.05	217.56			28		X		14.14	11.8	77 F (25 C)	HSDB	112.558	61.3	0.0613	5.4461E-04	0.0000	1.3914E-04	1.85507E-05
	1,2-Dichlorobenzene	95-50-1	$C_6H_4Cl_2$	7.0703	1649.55	213.32			25		X		1.41	1.47	77 F (25 C)	HSDB	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	1,3-Dichlorobenzene	541-73-1	$C_6H_4Cl_2$	7.3037	1782.4	230.01			25		X		2.06	1.889	77 F (25 C)	MDL, 1996	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Dichlorobenzene	106-46-7	$C_6H_4Cl_2$	6.998	1575.11	208.52			25		X		1.79	1.76	77 F (25 C)	ATSDR	147.010		0	0.0000E+00	0.0000	0.0000E+00	0
	2,4-Dinitrotoluene	121-14-2	$C_7H_6N_2O_4$	11.5966	-3.0079E+03	-1.6468	1.5949E-03	-1.8722E-14		298.16		X	8.1E-03	5.1E-03	68 F (20 C)	ATSDR	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
	2,6-Dinitrotoluene	606-20-2	$C_7H_6N_2O_4$	-14.5673	-4.2746E+03	12.904	-2.38E-02	9.4513E-06		298.16		X	5.9E-04	1.80E-02	68 F (20 C)	MDL, 1996	182.14		0	0.0000E+00	0.0000	0.0000E+00	0
	Ethylbenzene	100-41-4	C_8H_{10}	6.95719	1424.255	213.206			25		X		9.51	9.53	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
	Hexachlorobenzene	118-74-1	C_6Cl_6	-134.3625	-1.55E+03	61.748	-6.5123E-02	2.0872E-05		298.16		X	4.824E-05	2.350E-05	77 F (25 C)	Schwarzenbach	284.79		0	0.0000E+00	0.0000	0.0000E+00	0
	Nitrobenzene	98-95-3	$C_6H_5NO_2$	-54.4937	-2.1123E+03	29.321	-4.4839E-02	2.0162E-05		298.16		X	0.25	0.15	68 F (20 C)	ATSDR	123.11		0	0.0000E+00	0.0000	0.0000E+00	0
	Toluene	108-88-3	C_7H_8	6.95464	1344.8	219.482			25		X		28.45	28.5	77 F (25 C)	Yaws, 1992	92.141		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2,4-Trichlorobenzene	120-82-1	$C_6H_3Cl_3$	15.5947	-2.892E+03	-2.5549	2.0384E-04	-7.0601E-14		298.16		X	0.43	1	101 F (38.4 C)	MDL, 1996	181.46		0	0.0000E+00	0.0000	0.0000E+00	0
	1,2-Xylene	95-47-6	C_8H_{10}	6.99891	1474.679	213.686			25		X		6.62	10	83 F (28.3 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
	1,3-Xylene	108-38-3	C_8H_{10}	7.00908	1462.266	215.105			25		X		8.30	6.8	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
	1,4-Xylene	106-42-3	C_8H_{10}	6.99052	1453.43	215.307			25		X		8.76	8.84	77 F (25 C)	ATSDR	106.167		0	0.0000E+00	0.0000	0.0000E+00	0
AROMATIC ALCOHOLS (n=8)	2-Chlorophenol	95-57-8	C_6H_5ClO	18.2631	-2.652E+03	-3.6728	8.3047E-10	1.8341E-06		298.16		X	2.78	1	53.8 F (12.1 C)	MDL, 1996	128.56		0	0.0000E+00	0.0000	0.0000E+00	0
	2,4-Dichlorophenol	120-83-2	$C_6H_4Cl_2O$	7.497876	1.890E+03	199.36			25		X		0.12	1	127 F (53 C)	MDL, 1996							
	2,4-Dimethylphenol	105-67-9	$C_8H_{10}O$	53.3866	-5.1516E+03	-15.095	-1.3196E-09	2.8455E-06		298.16		X	1.0E-01	10	198 F (92.3 C)	HSDB	122.16		0	0.0000E+00	0.0000	0.0000E+00	0
	2-Methylphenol	95-48-7	C_7H_8O	6.9117	1435.5	165.16			25		X		0.23	0.299	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	3-Methylphenol	108-39-4	C_7H_8O	7.508	1856.36	199.07			25		X		0.17	0.138	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	4-Methylphenol	106-44-5	C_7H_8O	7.0351	1511.08	161.86			25		X		0.09	0.11	77 F (25 C)	ATSDR	108.140		0	0.0000E+00	0.0000	0.0000E+00	0
	Pentachlorophenol	87-86-5	C_6HCl_5O	7.544423	2286.91	180.3596			25		X		0.000256	0.00017	68 F (20 C)	Crosby, 1981	266.35						
	Phenol	108-95-2	C_6H_6O	7.1345	1516.07	174.57			25		X		0.34	0.35	77 F (25 C)	MDL, 1996	94.11		0	0.0000E+00	0.0000	0.0000E+00	0
PAHs (n=9)	Acenaphthene	83-32-9	$C_{12}H_{10}$	28.8173	-4.1623E+03	-6.775	-1.0672E-09	6.3928E-07		298.16		X	1.4E-02	4.47E-03	—	ATSDR	154.21		0	0.0000E+00	0.0000	0.0000E+00	0
	Anthracene	120-12-7	$C_{14}H_{10}$	-120.0992	4.478	52.574	-4.7696E-02	1.5020E-05		298.16		X	1.3E-03	1.7E-05	77 F (25 C)	ATSDR	178.23		0	0.0000E+00	0.0000	0.0000E+00	0
	Chloronaphthalene	25586-43-0	$C_{10}H_7Cl$	93.776	-6.6521E+03	-30.859	1.0748E-02	-3.2318E-14		298.16		X	0.0205				162.61		0	0.0000E+00	0.0000	0.0000E+00	0
	Chrysene	218-01-9	$C_{18}H_{12}$	-50.1566	-3.4381E+03	25.178	-2.462E-02	7.0144E-06		298.16		X	7.89E-07	6.3E-09	77 F (25 C)	ATSDR	228.28		0	0.0000E+00	0.0000	0.0000E+00	0
	Fluoranthene	206-44-0	$C_{16}H_{10}$	70.6802	-6.484E+03	-2.2241E+01	7.2184E-03	-6.3035E-13		298.16		X	1.1E-04	5.0E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
	Fluorene	86-73-7	$C_{13}H_{10}$	53.9382	-5.3622E+03	-16.059	4.5693E-03	8.143E-13		298.16		X	3.8E-03	7.1E-04	—	ATSDR	166.21		0	0.0000E+00	0.0000	0.0000E+00	0
	Naphthalene	91-20-3	$C_{10}H_8$	7.01065	1,733.71	201.859			25		X		2.3E-01	0.05	68 F (20 C)	MDL, 1996	128.16		0	0.0000E+00	0.0000	0.0000E+00	0
	Phenanthrene	85-01-8	$C_{14}H_{10}$	50.2858	-5.7409E+03	-13.935	-8.8520E-10	2.1343E-06		298.16		X	5.5E-04	9.6E-04	77 F (25 C)	ATSDR	178.22		0	0.0000E+00	0.0000	0.0000E+00	0
	Pyrene	129-00-0	$C_{16}H_{10}$	70.7871	-6.9413E+03	-21.79	6.0727E-03	1.5767E-12		298.16		X	2.4E-05	2.5E-06	77 F (25 C)	ATSDR	202.26		0	0.0000E+00	0.0000	0.0000E+00	0
PHTHALATES (n=4)	Dibutyl Phthalate	84-74-2	$C_{16}H_{22}O_4$	152.675	-1.0754E+04	-51.170	1.6933E-02	2.4948E-14		298.16		X	1.1E-05	7.26E-05	77 F (25 C)	Schwarzenbach	278.34		0	0.0000E+00	0.0000	0.0000E+00	0
	Diethyl Phthalate	84-66-2	$C_{12}H_{14}O_4$	72.1438	-7.0747E+03	-21.029	-3.2404E-10	3.4691E-06		298.16		X	4.9E-04	6.32E-03	77 F (25 C)	Schwarzenbach	222.26		0	0.0000E+00	0.0000	0.0000E+00	0
	Dimethyl Phthalate	131-11-3	$C_{10}H_{10}O_4$	12.6974	-4.1989E+03	-0.3463	-7.6524E-03	3.349E-06		298.16		X	5.9E-05	1.82E-02	77 F (25 C)	Schwarzenbach	194.19		0	0.0000E+00	0.0000	0.0000E+00	0
	Dioctyl Phthalate	117-84-0	$C_{24}H_{38}O_4$	27.8473	-7.6834E+03	-2.1134	-1.5234E-02	6.2365E-06		298.16		X	7.3E-08				390.56		0	0.0000E+00	0.0000	0.0000E+00	0
	PCB 1016-1260									298.16			1.0E-04 max				292		0	0.0000E+00	0.0000	0.0000E+00	0
	Water	7732-18-5	H_2O	29.8605	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16		X	28.40	23.756	77 F (25 C)	Yaws	18.070	999,936.43	999.93643	5.5337E+01	1.0000	28.3998	3.7863
																		Total Mass of Solute		*Total # of Moles in the Chemical Mixture*	*Check that the Mole Fractions sum to 1.00*	*Total Vapor Pressure of the Chemical Mixture (mm Hg)*	*Total Vapor Pressure of the Chemical Mixture (kPa)*
																		63.57		*55.3374*	*1.0000*	*28.4001*	*3.7863*

If you have any comments or questions on this program, please contact Dr. David Dolan in Corp. EH&S at (630) 218-1537

Tank Number	T-A
Tank Size - m³ (gals)	9.46 (2500)
Vapor Pressure Limit kPa (psi)	76.6 (11.1)