

**I(A). INCINERATION**

I(A).1. Module Highlights

(a) General Description

Wastes are fed to the rotary kiln or primary combustion chamber (PCC) via a variety of feed mechanisms. Solid wastes in the form of slag move slowly from the front wall of the kiln to the discharge end. The slag flows into a slag quench tank located at the base of the secondary combustion chamber (SCC). The flue gas generated in the PCC flows into the SCC for further treatment to complete the combustion process. From the SCC, the flue gas enters the heat recovery boiler which reduces the temperature prior to entry into the spray dryer. The spray dryer unit further cools the flue gas and serves to evaporate neutralized process water from the facility's Four Stage Wet Scrubber. From the spray dryer, the flue gas enters the Electrostatic Precipitator (ESP) which removes the majority of the fly ash entrained in the flue gas. The Four Stage Wet Scrubber is the final flue gas cleaning unit in the incinerator system. It removes acid gas pollutants and fine particulate matter. Stack gas is reheated by the plume suppression system to ensure the stack gases, mostly water vapor and carbon dioxide, will rise to an adequate height above the facility. The stack is the last unit in the system. The height of the exhaust stack for the incinerator is 150 feet. Analyzers are positioned at specific locations within the incineration system to monitor complete combustion of the hazardous waste and ensure compliance with permit emission limits.

A Bailey Distributed Control System (DCS) monitors and controls the incineration system as well as ancillary operations such as waste movements at the facility. Process parameters in critical locations are continuously recorded by the DCS and monitored by the facility's control room operators. The DCS is used to maintain key process parameters such as feed rates and operating conditions such as combustion zone temperature and process flow within permitted ranges. The DCS will automatically stop waste feeds if certain process and operation parameters fall outside the allowable operating range.

Waste handling, feed systems, and systems ancillary to the incineration system are fully described in Section D of the approved PART B permit application.

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This section also includes information about the facility's vapor recovery system used for controlling fugitive emissions during processing and storage of waste on-site and to supply combustion air to the incineration system.

Permitted staging, processing, and storage locations are also described in Section D of the approved permit application. Section D includes descriptions of receiving procedures and the procedures in place for sampling, processing, storing, and tracking wastes on-site. Section B details the times and days the facility can receive waste.

The facility is permitted to manage mixed infectious and hazardous waste (MIHW) in accordance with the requirements in the Part B permit application and Module I(B) of this permit. VRA must also remain in compliance with the parameters listed in Module I(A) of this permit.

(b) Operating Parameters

Key operating parameters for the incineration system include, but are not limited to:

- (i) Reserved;
- (ii) negative pressure in the SCC to prevent fugitive emissions;
- (iii) Reserved;
- (iv) Reserved;
- (v) outlet temperature of the spray dryer/inlet temperature of ESP, as a control for dioxin/furan formation;
- (vi) Reserved;
- (vii) Reserved;
- (viii) Reserved;
- (ix) Reserved;

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- (x) carbon feed rate to the enhanced carbon injection system (ECIS) which collects dioxins/furans that may have formed during the incineration process;
  - (xi) Reserved
  - (xii) Reserved;
  - (xiii) Reserved;
  - (xiv) Reserved;
  - (xv) Reserved;
  - (xvi) annual metal feed and carbon feed restrictions to the system, to ensure permit limits are not exceeded;
  - (xvii) Reserved;
  - (xviii) Reserved.

Operating limits for the incineration system were based on: (1) the trial burn conducted by the facility in 1993, 1994, and 2003, (2) manufacturer's recommendations and specifications, and (3) results of performance testing conducted at the facility as described in Section D of the approved Part B permit application and listed in Attachment 1 and 3 to this permit.

(c) Description of Waste Feed Cut-Off System

The facility's waste feed cut-off (WFCO) system is part of the Bailey Distributed Control System (DCS). The system is utilized to terminate waste feed to the incineration system when a triggering event occurs. Operating parameters which have been identified as risk based or as more stringent than the corresponding requirement in

THE HAZARDOUS WASTE COMBUSTOR (HWC) MACT STANDARDS demonstrated through testing to be indicators of complete combustion, minimal emissions, and efficient operation of the incineration train are listed in Attachment 1 to this permit. When the DCS detects any of these parameters not being met, it is programmed to automatically terminate all hazardous waste feeds to the incineration system, i.e., an automatic WFCO occurs. In addition to those operating limit parameters which result in an AWFCO, there are also parameters (see Attachment 1) that, when the DCS or an operator detects the parameters not being met, require a manual WFCO.

In addition to the parameters listed in Attachment 1 to this permit, several other events trigger the suspension of waste feed to the incineration system. Examples of these parameters are listed below:

- (i) interruption of scrubber water circulation to any of the four stages OF THE FOUR STAGE WET SCRUBBER;
- (ii) malfunction of the primary or combustion air fan;
- (iii) water level in the boiler deficient as monitored by the level of water in the steam drum;
- (iv) failure of the evaporative quench or spray dryer;
- (v) general loss of electrical power/power failure;
- (vi) any of the monitoring equipment not operating properly. For example, the monitoring equipment and analyzers for CO, O<sub>2</sub>, HCl, THC, total feed rate including the waste feed rate and the auxiliary fuel to the PCC, temperatures in the PCC, SCC, and the inlet to the ESP, process flow, heat release from the system (in MMBTU/HR), pressure in the SCC, pH probe in the scrubber, air, steam, oxygen pressure at the nozzles in the SCC, natural gas burner blower in the SCC.

(d) Types of Wastes to be Burned

Wastes in a variety of chemical compositions and physical states possessing a wide range of BTU values are scheduled for receipt Monday through Sunday at the facility. Hazardous waste codes approved for acceptance, storage, and treatment are listed in the Part A of the permit application. Prohibited and restricted wastes are described in Section C of the PART B permit application. The wastes received at the facility range from consumer-packaged materials, for which the composition and characteristics of the wastes are well known, to materials derived from clean-up sites where the

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wastes are described in broad compositional ranges. Wastes are received in a variety of container sizes and in bulk form as solids, liquids, slurries, sludges, solid/liquid mixtures, and specifically approved compressed gaseous waste streams listed in Section C-1a(2)(i)(d) located in the Waste Characteristic and Waste Analysis Plan of the approved Part B permit application. The wastes may be fed to the incineration system via several feed mechanisms which are described in Section D of the approved permit application. Waste accepted for thermal treatment will have a thermal stability class ranking equal to or higher than Class 1 chemicals as found in the Thermal Stability Index developed at the University of Dayton Research Institute (UDRI).

(e) Reserved.

I(A).2. Identification Criteria for Permitted, Restricted, and Prohibited Waste  
OAC Rule 3745-57-44 and 3745-57-43

Unless otherwise authorized, the Permittee may incinerate the following hazardous wastes, as specified in this permit and only under the terms of this permit. The Permittee may only feed the hazardous wastes as identified below at the facility subject to Permit Conditions I(A).3. through I(A).5., and I(A).8.

- (a) The following criteria must be adhered to when determining the acceptability of wastes at the facility for storage and/or treatment:
- (i) The wastes must be approved by the Ohio EPA, Division of Hazardous Waste Management, in accordance with the conditions set forth in Section C of the approved Part B permit application.
  - (ii) Reserved.

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- (iii) Reserved.
- (iv) The physical state of the waste feed shall be liquid, solid, slurry, or sludge. Compressed gases and gas mixtures approved for treatment by incineration include gases used as propellant in aerosol cans and compressed gaseous waste streams listed in Section C-1a(2)(i)(d) of the Waste Characteristic and Waste Analysis Plan of the approved Part B permit application.
1. Evaluation of future compressed gases and/or gas mixtures for acceptance and treatment by the Permittee shall be based on criteria listed in Section C -2e(5)(d) of the Part B permit application.
  2. If the gaseous waste stream under consideration has characteristics that are similar to approved gaseous waste streams found in Section C, the Permittee may submit a Class 1 permit modification with Director's prior approval (C1A) for evaluation.
  3. If the gaseous waste stream under consideration has characteristics that are dissimilar to currently approved gaseous waste streams, the Permittee may submit a Class 2 permit modification for Ohio EPA review.
  4. Each gaseous waste stream submitted will be evaluated on a case by case basis and, if approved, be added to Section C of the Part B permit application.
- (v) The Permittee shall not incinerate or treat any State-recognized hazardous waste whose current Ohio EPA hazardous waste code does not appear in the approved Part A permit application or any waste listed in Section C of the approved Part B permit application categorized as being prohibited from incineration or any waste for which the facility is not designed to receive, handle, store, or treat. Permittee may treat federally approved codes the state has not yet promulgated.
- (vi) Reserved.

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- (b) Throughout operation, the Permittee shall conduct sufficient analysis in accordance with Section C of the approved Part B permit application to verify that waste received by the facility conforms with the waste scheduled. Analysis will be conducted to ensure that the waste fed to the incinerator is within the physical and chemical composition limits specified in this permit and the approved Part B permit application.
  
- (c) Wastes, in accordance with Section C of the approved Part B permit application, that are prohibited from acceptance on-site include:
  - (i) waste containing polychlorinated biphenyls (PCBs) in excess of 50 parts per million or, waste that is, or was at one time, regulated by TSCA, 40 CFR 761;
  
  - (ii) Reserved.

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- (iii) dioxin-bearing waste: waste requiring specific treatment technology, i.e., destruction and removal efficiency (DRE) of 99.9999%; waste assigned federal hazardous waste codes F020 through F023, F026, and F027;
  - (iv) infectious waste;
  - (v) chemical warfare agents (CWA) and other chemical weapons or debris generated from the manufacture and/or cleanup of CWAs;
  - (vi) radioactive wastes;
  - (vii) compressed gases that have not been approved for incineration. Approved compressed gases and gas mixtures are listed in Section C, Waste Characteristic and Waste Analysis Plan, of the approved Part B permit application.
  - (viii) other prohibited wastes as described in Section C.

Additional information regarding the prohibited wastes listed above can be found in C-1a (1) in Section C of the approved Part B permit application.

- (d) Wastes that are restricted at the facility are described in Section C of the approved Part B permit application. Examples of restricted wastes include:
  - (i) wastes that may require special handling and/or storage requirements;
  - (ii) wastes with treatment restrictions; and
  - (iii) wastes that carry any of the federal hazardous waste codes that are required to meet LDR treatment standard for dioxins and furans, such as F032, F039, K043, and/or K099.
- (e) Only waste feed systems specified in Section D of the approved Part B permit application may be used to feed wastes to the incineration system.
- (f) No waste may be fed to the SCC.
- (g) The Permittee shall determine the composition and heat value of any auxiliary fuel used in the incineration of any hazardous waste, during start-up and shut-down procedures, and during upset conditions.

High BTU auxiliary fuel which may be hazardous, but only because it is

ignitable (EPA waste code D001), may be used if waste analysis performed demonstrates that the waste to be burned as auxiliary fuel contains none of the hazardous constituents listed in the appendix to OAC Rule 3745-51-11.

I(A).3. Construction, Instrumentation, and Operational Performance Requirements  
OAC Rule 3745-57-45

VRA is permitted for two commercial hazardous waste incinerators. One is existing and one has yet to be constructed.

- (a) The Permittee shall construct, operate, and maintain the incinerator in accordance with the design plans and specifications contained in the approved Part B permit application. The Permittee shall not feed hazardous wastes to the newly constructed incinerator until Permit Condition A.23 (Certification of Construction or Modification) has been complied with.
- (b) The Permittee shall design, construct, and maintain the incinerator so that when operated, in accordance with the operating requirements specified in this permit, it will meet the performance standards specified in Permit Conditions ~~I(A).3(d) through I(A).3(F) AND I(A).3(h) and OAC Rule 3745-57-43.~~
- (c) The Permittee shall install, test, operate, and maintain all instrumentation and controls including all associated instrument loops, monitors, analyzers, alarms, and the distributed control system, in accordance with the design plans, performance specifications, and maintenance procedures contained in the approved Part B permit application prior to, and while, handling hazardous wastes in the incineration system.
- (d) ~~The incinerator shall achieve a destruction and removal efficiency (DRE) of 99.99 percent for any principal organic hazardous constituents (POHC) fed to the incineration system.~~

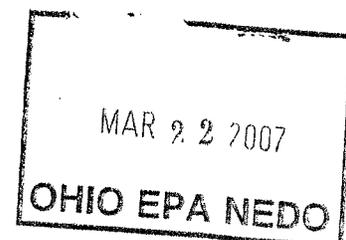
~~The designated POHCs, as used in the trial burn to demonstrate a DRE of >99.99%, were (1) carbon tetrachloride, (2) monochlorobenzene, (3) 1,2,4-trichlorobenzene, and (4) trichloroethylene. Annual DRE testing shall include monochlorobenzene or any POHC as defined by Section I(A).1(e) of this permit. The DRE value shall be determined using the method specified in OAC Rule 3745-57-43(A)(1).~~ RESERVED.

- (e) ~~The Permittee shall control hydrogen chloride (HCl) emissions such that the rate of emissions is no greater than the larger of either (1) 1.8 kilograms per hour (four lbs/hr) on a three hour average measured in the stack or (2) 1.0% of the HCl in the stack gas prior to entering any pollution control equipment in accordance with OAC Rule 3745-57-43(B). HCl shall be monitored and recorded in accordance with Attachments 1 and 3 to this permit.~~ RESERVED.

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- (f) The Permittee shall comply with annual emission limits for twelve metals: barium, mercury, silver, thallium, nickel, selenium, antimony, arsenic, beryllium, cadmium, chromium and lead; as listed in Attachment 2 to this permit.
- (g) Reserved.
- (h) The Permittee must test the performance of the incineration system to demonstrate continued polychlorinated dibenzodioxins and polychlorinated dibenzofurans (dioxin/furans) control using the test protocols employed during the October 2002 testing event, or the approved Hazardous Waste Combustion MACT Comprehensive Performance Test Plan, or an equivalent test plan as specifically approved by Ohio EPA. This testing is required by RCRA since the Permittee's 1997 comprehensive risk assessment conducted by the U.S. EPA found dioxin/furans to be a risk to human health and the environment.
- (i) Testing for dioxin/furan emission limits will be performed in conjunction with testing required by the MACT standards and in accordance with the Permittee's Title V permit.
- (ii) To evaluate the incinerator's performance, a rolling average based on five individual test events, will be tracked. The initial average was calculated from data collected during the October 2002 Annual Performance Test (two conditions); the first CPT (two conditions); and a test performed six months after the completion of the CPT. All subsequent test data will be added to the data grouping and the value from the oldest test period will drop out so that the average represents the five most recent test events. At the conclusion of each dioxin/furan testing event, the average calculated by dropping the oldest test value and adding the new test value will be compared to the previously demonstrated average performance level of 0.055 ng/dscm, TEQ basis, corrected to 7% oxygen achieved during the 26 individual stack test runs in 1993 and 1994 subsequent to the installation of the ECIS.



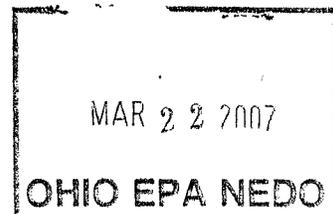
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If, at any time, the new rolling average is greater than 0.1 ng/dscm, the Permittee must notify the Director immediately. The Permittee will initiate an evaluation for the cause of the average increase and develop a report as to the possible cause with recommendations for corrective action if warranted. The Ohio EPA may consider any such test results as new "information" under OAC Rule 3745-50-51(A)(2). The comparison of the five test period rolling average with the 1993-1994 ECIS test period average is only to monitor incinerator performance with previously demonstrated emission levels.

Unless otherwise authorized, the Permittee shall only feed the wastes described in Permit Condition I(A).2. to the incinerator: (1) after the waste feed permissives as described in Section D of the approved Part B permit application and these permit conditions have been met and (2) under the following conditions according to OAC Rule 3745-57-45.

- (i) The Permittee shall only feed waste into the Primary Combustion Chamber (PCC) or Kiln using the feed mechanisms located in the incinerator feed building and described in Section D of the approved Part B permit application

Annual feed rates for twelve metals, barium, mercury, silver, thallium, nickel, selenium, antimony, arsenic, beryllium, cadmium, chromium and lead, are listed in Attachment 2 to this Permit. The feed rates shall not be exceeded and shall be monitored and recorded on a continuous basis and in accordance with Attachments 1 and 3 to this permit.



- ~~(iii) Maximum total waste feed shall not exceed 29,651 lb/hr (one hour average) or 28,565 lb/hr (four hour average).~~
- ~~(iv) Annual and hourly feed rates for twelve metals, barium, mercury, silver, thallium, nickel, selenium, antimony, arsenic, beryllium, cadmium, chromium and lead, are listed in Attachment 2 to this Permit. The feed rates shall not be exceeded and shall be monitored and recorded on a continuous basis.~~
- ~~(v) The total feed rate, including the waste feed rate and auxiliary fuel to the incinerator, is limited to the range between 49 million BTU/hr to 97.8 million BTU/hr heat input (three hour rolling average).~~
- (j) The combustion zone, defined as midway down the PCC to midway up the secondary combustion chamber (SCC), is the region in the incineration system where volatilized organic compounds are thermally destroyed. The temperature is monitored as specified in Permit Condition 1(A).5. and Attachments 1 and 3 to this permit, and shall be maintained as follows:
  - ~~(i) maximum temperature in the PCC shall not exceed 2,200°F instantaneous and 2,174°F on a four hour rolling average;~~
  - ~~(ii) minimum temperature in the PCC shall not drop below 1,800°F instantaneous and 1,830°F on a four hour rolling average;~~
  - ~~(iii) minimum temperature in the SCC shall not drop below 1600°F.~~  
RESERVED.
- (k) The Permittee shall control fugitive emissions from the combustion zone of the incineration system by:
  - (i) maintaining a constant negative pressure/draft throughout the incineration system and associated heat recovery and flue gas cleaning equipment via the induced draft (ID) fan; ~~and ID fan discharge volume damper as monitored and recorded in accordance with Attachments 1 and 3 to this permit;~~ and
  - (ii) The incineration system has fugitive emission mechanisms associated with the PRIMARY Combustion Chamber (PCC).

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- (l) ~~Atomization fluid pressure (e.g., steam, air) to the front wall lances shall be no less than 45 psig and monitored and recorded in accordance with Attachments 1 and 3 to this permit. The limit of 45 psig was recorded during the Permittee's initial trial burn and will be maintained until and unless additional testing demonstrates that complete combustion can be achieved at atomization pressures other than 45 psig.~~

~~If the atomization pressure for any of the feed lances at the front wall fall below 45 psig, the feed for that lance will be cutoff until such time the pressure can be maintained. RESERVED.~~

- (m) The following conditions apply to the Secondary Combustion Chamber (SCC):
- (i) The water level in the slag quench tank at the base of the SCC shall be maintained automatically by a level probe and automatic valve. A visible and audible alarm shall warn the operator if the water level falls below the bottom edge of the outlet in the bottom of the SCC.
  - (ii) Reserved.
- (n) The outlet temperature of the spray dryer (inlet temperature of the ESP) must be between 250°F and 450°F at all times waste is in the incineration system and shall be monitored and recorded on a continuous basis and in accordance with Attachments 1 and 3 to this permit.
- (o) Reserved.

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- (i) ~~The ESP shall be maintained at its design particulate removal efficiency and in automated computer control mode whenever hazardous waste is being fed to the incineration system. The Permittee shall be required to utilize a "Digicon Optipulse" controller or equivalent, as determined by the Director, to control the electrical fields of the ESP.~~
- (ii) ~~The controller will monitor, for each of the three ESP fields, at a minimum, the following parameters:~~
  - a) ~~primary voltage - must be > 90v AC and at least 50% of the rated primary current;~~
  - b) ~~ESP fields 1 and 2 must be in the range of 0 to 100 amps;~~
  - c) ~~ESP field 3 must be in the range of 0 to 150 amps; and~~
  - d) ~~spark rate must be < 200 sparks per minute.~~
- (iii) ~~All three fields of the ESP will be energized when burning hazardous waste and monitored and recorded in accordance with Attachments 1 and 3 to this permit.~~
- (iv) ~~Whenever the ESP is out of service for more than seventy two hours, start up procedures, as specified by the manufacturer, shall be successfully completed and documented prior to resumption of hazardous waste feed to the incineration system.~~
- (p) ~~Oxygen concentration in the flue gas leaving the ESP shall be greater than 3% percent by dry volume basis and shall be monitored and recorded on a continuous basis in accordance with Attachments 1 and 3 to this permit.~~  
~~RESERVED~~
- (q) ~~Carbon monoxide concentration in the flue gas leaving the ESP shall not exceed 100 ppm by volume on a dry basis over a one hour rolling average. This operating parameter shall be monitored as specified in Permit Condition I(A).5 and Attachments 1 and 3 to this permit.~~  
~~RESERVED.~~
- (r) The enhanced carbon injection system (ECIS) must be operating at all times waste is in the incineration system and will be monitored and recorded in accordance with Attachments 1 and 3 to this permit. The Permittee shall continue to feed activated carbon at the two injection points in the ECIS at,

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or above, the rates demonstrated during the Comprehensive Performance Test/Trial Burn conducted in September 2003 (Condition 1) and December 2003 (Condition 2). The feed rate for carbon to the ECIS is an average of the feed rate demonstrated by the two mentioned tests.

- (i) The Permittee shall utilize "NORIT PAC 20R" activated carbon, or equivalent, as determined by the Director. Equivalency will be determined by comparing Iodine No. (800 mg/g minimum); ash (15% maximum by weight); moisture (4% maximum by weight as packed); and screen size (65-80%, U.S. Sieve series through 325 mesh).
  - (ii) The activated carbon feed rates, used during the performance testing of the incineration system to demonstrate control of dioxins/furans, shall be maintained at all times waste is in the incineration system.
  - (iii) The activated carbon feed system must be calibrated monthly to ensure feed rates to the ECIS are maintained in accordance with the requirements of this permit at the two locations described in the June 25, 1993 submittal from WTI in paragraph two (Process Description) of the attachment entitled "Enhanced Carbon Injection System" and as illustrated in the associated drawing, number P-06-2-31001.
  - (iv) The results of the calibration shall be recorded in the facility's operating record.
- (s) ~~The following conditions apply to the Four Stage Wet Scrubber:~~  
RESERVED
- (i) ~~The pH of the scrubbant at the top of the second packed bed (third stage of the scrubber), monitored as specified in Permit Condition I(A).5. and Attachments 1 and 3 to this permit, shall be maintained at a minimum pH of 7.0.~~
  - (ii) ~~To ensure adequate particulate matter control, the pressure drop across the fourth stage ring jets of the Venturi scrubber, monitored as specified in Permit Condition I(A).5. and Attachments 1 and 3 to this permit, shall be maintained at no less than 13.4 inches water column (one minute average).~~

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- (iii) RESERVED
- (iv) ~~To ensure proper acid gas removal and the proper liquid to gas ratios, HCl shall be monitored at the stack in accordance with Attachments 1 and 3 to this permit.~~
- (v) ~~In the event of a malfunction of the HCl monitor in the stack and during daily calibration, a flow rate of 397 gpm (one minute average) in the third stage (second packed bed) shall be maintained and monitored as specified in Permit Condition I(A).5. and Attachments 1 and 3 to this permit.~~
- (t) ~~The total hydrocarbon (THC) concentration in the flue gas (measured as propane) at the stack and monitored and recorded as specified in permit condition I(A).5. and Attachments 1 and 3 to this permit, shall not exceed 100 ppm (one minute average).~~  
RESERVED.
- (u) ~~The maximum total volumetric flow rate through the incineration system, as monitored and recorded on a continuous basis at the induction fan (ID) or other flow monitoring equipment, shall not exceed 65,000 scfm. The volumetric flow rate shall be determined from the calibration chart of the ID fan or by means of other flow monitoring equipment as approved by the Director. This process flow will be monitored and recorded in accordance with Attachments 1 and 3 to this permit.~~  
RESERVED.
- (v) The reheat or plume suppression system must be operated continuously while waste is in the incineration system, except during maintenance. The unit may be shut down for up to 24 hours at a time not to exceed ten times in one calendar year. The system will be monitored and recorded in accordance with Attachments 1 and 3 to this permit.
- (i) Shut down of the plume suppression system for periods greater than 24 hours or more often than ten times during the calendar year while burning hazardous waste shall only be allowed upon written authorization from the Ohio EPA.
- (w) Start-Up and Shut-Down

The Permittee shall comply with the requirements of OAC Rule 3745-57-45(C). In addition, the incineration system will be inspected thoroughly prior to each start-up. This inspection will ensure that the system is in

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proper working condition before the start-up procedure is initiated. Burners in the PRIMARY COMBUSTION CHAMBER (PCC) PCC front wall will be used to heat up the combustion zone gradually. These burners will burn auxiliary fuel, as described in Permit Condition I.(A).2.(g), during the start-up and shutdown procedures. Once ~~the combustion zone reaches the proper temperatures, as listed in Attachment 3 to this permit,~~ and the incineration system is fully operational, waste may be introduced into the PCC.

Shutdown can be initiated automatically by the distributed control system (DCS) or manually by the operator. The shutdown procedure will begin with the termination of waste feed to the system. Except in the case of an emergency shutdown, the system will remain operational in order to complete the combustion of all waste in the incineration system. The burners in the front wall will be used to maintain temperatures in the combustion zone until incineration of the remaining waste is complete.

(x) Cessation of Operation

The Permittee shall comply with the requirements of OAC Rule 3745-57-45(F).

- (y) Requests for changes to the incineration system, associated heat recovery or flue gas cleaning equipment, or operation procedures as detailed in this permit or the approved Part B permit application, which would affect the achievement of the performance standards contained in Permit Condition I.(A).3, ~~OAC Rule 3745-57-43~~ or any other permit conditions, shall be submitted for evaluation to the Ohio EPA. No such changes shall be made at the facility unless the Permittee has received approval in accordance with the Ohio Hazardous Waste Rules.

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- (z) For purposes of permit enforcement, compliance with the operating requirements specified in this permit and in OAC Rule 3745-57-45 will be regarded as compliance with the required performance standards in this permit ~~and OAC Rule 3745-57-43~~. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, may justify modification, revocation, or reissuance of the permit pursuant to OAC Rule 3745-50-51, in accordance with OAC Rule 3745-57-43(D).

I(A).4. Inspection Requirements  
OAC Rule 3745-57-47

The Permittee shall conduct regular and timely inspections of the facility and its operations in accordance with the Inspection Schedule, found in Section F of the approved Part B permit application, ~~AND ALL applicable permit conditions, and OAC Rule 3745-57-47~~, and shall complete the following as part of these inspections. All inspection data shall be recorded and the records must be placed in the operating log in accordance with OAC Rule ~~3745-57-47(D)~~ 3745-54-73.

- (a) The Permittee shall thoroughly, visually inspect the incinerator and associated equipment (including pumps, valves, conveyors, pipes, etc.) for leaks, spills, corrosion and deterioration, fugitive emissions, and signs of tampering in accordance with Section F of the approved Part B permit application ~~and OAC Rule 3745-57-47(B)~~.

During start up procedures at the facility, the Permittee shall comply with the requirements of OAC Rule 3745-57-45(C). The incineration system will be inspected thoroughly prior to each start-up. This inspection will ensure that the system is in proper working condition before the start-up procedure is initiated.

- (b) The Permittee shall thoroughly, visually inspect the integrity of the secondary containment, roadways, the containment sumps in the storm water collection "B" and "C" areas (as described in Section B of the approved Part B permit application), and the facility's security fence at a frequency outlined in Section F of the approved PART B permit application.
- (c) The Permittee shall continuously monitor the distributed control

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system (DCS) including the analyzers, monitors, temperature probes, pH meters, scales, micro-motion meters, alarms, etc. for proper operation and recording of data.

- (d) ~~The Permittee shall test the emergency waste feed cut-off system and associated alarms weekly and as specified in Permit Condition I(A).5(a) in order to verify operability in accordance with OAC Rule 3745-57-47(C). The monitoring systems will be tested by simulating an upset condition of each monitoring parameter which will engage the waste feed cutoff system. RESERVED.~~
- (e) The Permittee shall test the emergency response equipment and communications in accordance with Section F of the approved PART B permit application.
- (f) The inspection records shall be placed in the operating log in accordance with OAC Rule ~~3745-57-47(D)~~ 3745-54-73.

I(A).5. Monitoring Requirements  
OAC Rule 3745-57-47

- (a) The Permittee shall maintain, calibrate, and operate monitoring equipment at all times while incinerating hazardous waste as specified in the approved PART B permit application, the terms and conditions of this permit, and Attachment 3 to this permit.
- (b) The Permittee shall record the monitoring equipment data while incinerating hazardous waste for all materials fed to the incineration system. The data shall be placed in the operating log in accordance with OAC Rule ~~3745-57-47(D)~~ 3745-54-73. This will include:
  - (i) ~~pumpable materials, including by-pass or auxiliary fuels, monitored and recorded on a continuous basis; METAL FEED RATES FOR TWELVE METALS LISTED IN ATTACHMENT 2 TO THIS PERMIT.~~
  - (ii) ~~nonpumpable materials, monitored continuously and logged on a regular basis not to exceed once per charging cycle or once every fifteen minutes, which ever is greater; RESERVED~~
  - (iii) ~~total chlorine content of all material fed to the incineration system, monitored and recorded on a continuous basis (three hour average); and~~

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(c) Upon request of the Ohio EPA, the Permittee shall perform sampling and analysis of the waste and exhaust emissions to verify that the operating requirements established in this permit are being met.

(d) Periodic Incineration System Testing

The Permittee shall test the incineration system as directed by the Ohio EPA, to verify that the operating requirements established in this permit result in compliance with Attachment 2 to this permit and all applicable sections of this permit and the approved Part B permit application. Testing may also be conducted to determine whether amendment of the performance standards contained in this permit, or additions thereto, is indicated as necessary.

At a minimum, the Permittee will conduct testing for the performance standards in this permit at a frequency required by the MACT Standards and listed in the Clean Air Act Title V permit.

(e) RESERVED

I(A).6. Waste Feed Cut-Off Requirements  
OAC Rule 3745-57-45

(a) The Permittee shall construct and maintain the systems specified in Section D of the approved Part B permit application and Permit Condition I(A).3. The Permittee shall not feed hazardous wastes

to the incinerator unless all monitoring systems listed in Permit Condition I(A).3 and Attachments 1 and 3 to this permit are on-line, properly operating, and monitoring according to conditions specified in Attachment 3 to this permit.

- (b) The incineration system shall be operated and maintained to automatically cut off the hazardous waste feed to the incinerator at the levels specified in Attachment 1 to this permit. Hazardous wastes shall be fed to the incinerator only when all instruments required by this condition are on line, operating properly and monitoring the specified parameters according to Attachment 1 and 3 to this permit.
- (c) In case of a malfunction of the automatic waste feed cut-off system, the Permittee shall perform manual shut downs in accordance with the procedures in the approved Part B permit application and the terms and conditions of this permit, such as I(A).3(w) AND (X). The Permittee shall not restart the incinerator until the problem causing the malfunction has been located and corrected. At that time, the Permittee shall conduct an inspection of all systems in accordance with Permit Condition I(A).4(a)

I(A).7. Closure  
OAC Rule 3745-57-51

The Permittee shall follow the procedures in the Closure Plan in Section I of the approved Part B permit application and the terms and conditions of this permit.

I(A).8. Record keeping

- (a) The Permittee shall record and maintain, in the operating record for the facility, all monitoring and inspection data compiled under the requirements of this permit and in accordance with OAC Rule 3745-57-47(D) 3745-54-73 and all applicable sections of the approved Part B permit application.
- (b) ~~The Permittee shall record in the operating record for the facility, the date and time of all automatic waste feed cut-offs RELATED TO THE PARAMETERS IN THIS PERMIT, including the triggering parameters, reason(s) for the cut-off, and corrective actions taken. The Permittee shall also record all failures of the automatic waste feed~~

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I(A).9. Re-generable Activated Carbon Adsorption Cleaning System

The Permittee shall maintain the re-generable activated carbon adsorption cleaning system to ensure a removal of, at a minimum, 95% of the total organic vapors from the exhaust gas prior to being discharged from the system to the atmosphere and in accordance with the terms and conditions of this permit and Section D of the approved Part B permit application.

- (a) The replacement of the carbon boxes, in accordance with Section D of the approved Part B permit application, shall be recorded in the facility's operating record.

I(A).10 Treatment Residual

Unless the Permittee can show otherwise, per OAC Rule 3745-51-03(D), residue from the incinerator is hazardous waste and the Permittee is considered the generator.

- (a) The Permittee shall sample and analyze the treatment residue generated from the incineration system and all ancillary systems in accordance with the procedures outlined in Section C of the approved Part B permit application.
- (b) The Permittee shall manage the treatment residue generated from the incineration system in accordance with procedures outlined in Section D of the approved Part B permit application and all applicable Ohio hazardous waste regulations.

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## **I(B). MIXED INFECTIOUS AND HAZARDOUS WASTE (MIHW)**

### **I(B).1. Module Highlights**

This module contains special requirements that apply, in addition to Module I(A), to the management of mixed infectious and hazardous waste (MIHW). Whenever MIHW is in the incinerator, the standards in Module I(A) must also be met.

MIHW is defined as infectious waste that is also hazardous waste. Hazardous waste is defined in Ohio Administrative Code (OAC) Rule 3745-51-03, and thus requires the application of one or more hazardous waste codes in order to be managed as hazardous waste.

Infectious waste must also be hazardous waste to be managed as MIHW. Waste that is solely infectious waste cannot be managed at the facility.

Under OAC Rule 3745-50-51(D)(4)(a)(v), the Director has the authority to include such additional permit conditions necessary to protect human health and the environment.

### **I(B).2. Management Criteria for MIHW**

Unless otherwise authorized, the Permittee may incinerate mixed infectious and hazardous waste (MIHW), as specified in this Permit and in the Part B permit application. The following criteria must be adhered to when determining the acceptability of MIHW for management at the facility.

- (a) The Permittee shall accept only MIHW with hazardous waste codes listed in the Part A permit application.
  - (i) The Permittee is prohibited from accepting MIHW containing prion waste or prion-contaminated debris, or prion-related waste or contaminated debris.

- (b) The Permittee shall manage MIHW in accordance with the requirements and time limitations stated in the facility's Part B permit application and Ohio Hazardous Waste Facility Installation and Operation Permit. On occasion, and with sufficient justification, Ohio EPA may allow additional time, up to a maximum of thirty (30) days, for managing MIHW at the facility.
- (i) MIHW will be managed as "high priority" waste. MIHW will be restricted in the packaging, concentration, size, quantity, type, and as scheduled by the Permittee to ensure safe handling and incineration at the facility. MIHW will also be restricted to specific processing, staging, and/or storage areas prior to incineration.
  - (ii) Containers of MIHW will not be opened for any reason, including sampling or splitting into smaller charge sizes. However, containers being processing to the incinerator through the direct tanker bays or the direct drum pump-out stations can be opened for that purpose.
  - (iii) Only the feed mechanisms specified in Sections C and D of the approved Part B permit application may be used to feed MIHW to the incineration system.
  - (iv) Untreated MIHW will not be placed into any tank system or into any miscellaneous unit. However, treatment residual (slag) from the incineration of MIHW that contains waste not combusted to ash or slag, except for metallic, glass, and ceramic items, may be placed in the Bulk Solid Waste Tanks for reprocessing.
  - (v) MIHW shall not be managed during periods of precipitation unless the waste and the waste management operations are protected from the elements of weather.
  - (vi) The Permittee shall follow standard operating procedures (SOPs) for the management of MIHW. All SOPs will be made available to Ohio EPA upon request, for review and inclusion of comments. If significant changes are made to SOPs regarding the management of MIHW, the Permittee will submit those SOPs to Ohio EPA for review and inclusion of comments.

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- (c) Waste Profile Sheets (WPS) for MIHW will be prepared, reviewed, and approved in accordance with the requirements in Section C, Waste Characteristics and Waste Analysis Plan, of the Part B permit application. Exceptions to the requirements in Section C and additional requirements are stated below.
- (i) Pre-acceptance and fingerprint samples for MIHW will not be analyzed at the facility. However, each container of MIHW must be monitored for radioactivity to ensure levels do not exceed background concentrations.
  - (ii) A signed certification from the generator/customer documenting the waste is MIHW must be included with the WPS. The WPS must provide sufficient information to properly characterize the waste and apply hazardous waste codes.
    - a) The WPS must include a calculation of the metals content present in the waste itself, if applicable, to justify the application of characteristic hazardous waste codes for metals by the generator/customer.
    - b) If applicable, the WPS must also include a concentration range for hazardous metals (for example, cadmium, chromium, and/or lead) that may be used as a pigmenting agent in bags or other containers of MIHW. This concentration range would be used to calculate the metals feed rate to the incineration system.
    - c) The metal concentration present as pigmenting agents in any bags or containers cannot be included in the calculation of metals to justify the application of characteristic waste codes to the actual waste.
  - (iii) The WPS and the individual waste labels must include specific designations to indicate the waste is MIHW, "high priority" waste, and that the MIHW is to be processed only through the feed mechanisms specified in the Part B permit application and permit.
  - (iv) MIHW may only be received as lab packs when a specific waste profile sheet is prepared for each lab pack waste stream.

- (d) Individual containers of MIHW to be fed intact into the incinerator shall not exceed a total volume of more than 55 gallons and are restricted to non-metal containers such as plastic or fiber (cardboard). For specific waste streams that are packaged in an appropriate container size and/or waste concentration, metal containers may be acceptable. Individual 55 gallon containers of MIHW may be over packed into a larger non-metal container, if necessary.
- (e) MIHW will be evaluated upon receipt at the facility for conformity to the WPS. Non-conforming waste will be managed in accordance with the Part B permit application.
- (f) A tracking system for MIHW must be developed and utilized by the Permittee in accordance with the Part B permit application. The tracking system will be provided to the Ohio EPA for review on a regular basis and upon request at any time.

I(B).3. Operational Performance Requirements

The minimum temperature for the incineration of MIHW shall be no less than the minimum temperature for incinerating either hazardous or infectious waste, whichever temperature is more protective.

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I(B).4. Process Capacity

MIHW must be scheduled for receipt only when the incinerator is operational. MIHW must be received at the facility in accordance with the requirements stated in the Part B permit application in Section C-2e(4).

- (a) The Permittee must consider potential scheduling conflicts, operational capacity, processing and/or operating conditions, and equipment availability when scheduling MIHW.
- (b) The Permittee must not schedule for receipt or receive more than 35,000 gallons (292,000 pounds) per day of MIHW at the facility and must not have onsite more than 100,000 gallons (834,000 pounds) total of MIHW in permitted container storage and waste staging areas. Shipments of MIHW must be re-scheduled if the existing accordance with facility guidelines and the requirements listed in the Part B permit application.
- (c) All efforts will be made to immediately re-schedule MIHW from arriving at the facility if an unplanned outage occurs. If shipments inadvertently arrive during an outage, the waste may be staged and/or stored in designated areas in accordance with Sections C and D of the Part B permit application.
- (d) Facility personnel who unload or process MIHW will be trained in accordance with Section H, Personnel Training Plan, of the Part B permit application, and any applicable standard operating procedures prior to managing MIHW.
- (e) If MIHW arrives as unscheduled waste, the generator/customer will be contacted immediately by facility personnel and additional training provided. If unscheduled waste arrives on a regular basis, Ohio EPA may take action to reduce the volume of MIHW which may be received by the Permittee.

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I(B).5. Processing, Staging, and/or Storage of MIHW

MIHW shall be processed, staged and/or stored only in designated areas at the facility, in accordance with Section C-2e(4) of the Part B permit application.

- (a) If unforeseen circumstances occur that would cause the Permittee to request that MIHW remain on-site longer than the time limitations stated in the Part B permit application, Ohio EPA may allow additional time, up to a maximum of thirty (30) days, for processing this waste, on occasion and with sufficient justification.
- (b) Each container of MIHW is considered to contain an amount of waste equal to its capacity, regardless of the actual quantity in the container.
- (c) If a container of MIHW is not in good condition (e.g. apparent structural defects) or if it begins to leak, the Permittee shall over pack in a second container that is in good condition or otherwise manage the waste in accordance with the terms and conditions of this permit or the Part B permit application.
- (d) Containers of MIHW shall be impervious to moisture, shall be kept in good repair, shall be clean on the outside, shall be leak resistant, shall have tight-fitting covers, and shall have sufficient strength to withstand handling during transport without compromising their integrity.
- (e) Containers of MIHW shall not be dropped, managed, or transferred in such manner as to cause damage to the container.
- (f) MIHW will be managed in a manner that maintains the waste in a non-putrescent state, in accordance with the Part B permit application. The Permittee and/or Ohio EPA may require certain MIHW to be packaged for transport in sufficient amounts of ice and/or to be shipped in refrigerated vehicles to ensure the waste is maintained in a non-putrescent state. Waste suspected of being putrescent will be processed immediately regardless of any staging and/or storage time frames.

- (g) All container storage and staging areas where MIHW may be located shall be visibly labeled with signs stating "high priority" and "mixed infectious and hazardous waste" at all points of access.
- (h) MIHW must be stored in a manner that affords protection from animals and does not provide a breeding place or a food source for insects or rodents.

I(B).6. Inspection Schedules and Procedures  
OAC Rules 3745-54-15 and 3745-54-73

Inspections shall be conducted in accordance with the Part B permit application. Inspections shall monitor the condition of containers and for the deterioration of the containment system caused by corrosion or other factors, at minimum. The Permittee shall document the results of these inspections on inspection forms, along with any remedial action taken in accordance with the procedures contained in Section F of the approved Part B permit application.

- (a) The Permittee shall inspect all containers of MIHW while the waste is being managed at the facility, in accordance with the requirements and inspection schedule contained in Sections C and F of the approved Part B permit application.
- (b) Visual inspection of treatment residual (slag) removed from the rotary kiln is required during periods of treatment of MIHW, in accordance with the Part B permit application.
  - (i) Inspections shall be conducted in accordance with Section F of the Part B permit application, and shall be documented on inspection forms.
  - (ii) Based upon inspection or other means, if MIHW is determined to be incompletely combusted, that waste must either be removed from the slag and placed in a collection container that is covered and labeled, or the entire roll-off box of treatment residual may be dumped into the Bulk Solid Waste Storage Tanks for reprocessing, in accordance with SOPs and the Part B permit application.

(iii) reserved

- (c) Inspection records associated with the management of MIHW will be maintained by the Permittee and provided to Ohio EPA on a routine basis and upon request.

I(B).7. Response to Leaks or Spills

Additional precautions are required for the management of MIHW at the facility. The Permittee shall respond to any releases of MIHW in accordance with SOPs and the Part B permit application.

- (a) Releases of MIHW shall be cleaned by utilizing either a U.S. EPA registered hospital disinfectant that is also tuberculocidal, for a contact time as specified by the manufacturer, or materials necessary to prepare a minimum 10% household bleach solution prepared immediately prior to use with a minimum thirty minutes of contact time with the waste.
- (b) Any wastewater or other materials resulting from a spill of MIHW or debris resulting from the cleanup of a spill of MIHW shall be managed as MIHW.
- (c) Spill kits will be stationed and maintained at designated locations and in areas where MIHW will be managed. Spill kits will be easily accessible when processing MIHW, in accordance with SOPs and the Part B permit application.

I(B).8. Record Keeping  
OAC Rule 3745-54-73

The Permittee shall record and maintain, in the operating record for the facility, all monitoring and inspection data compiled under the requirements of this permit and in accordance with OAC Rule 3745-54-73 and all applicable sections of the Part B permit application.

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#### I(B).9. Periodic Incineration System Testing

Incineration testing may be required by the Ohio EPA upon written notification. The test protocol and requirements will be in accordance with test procedures provided by Ohio EPA.

#### I(B).10. Closure

The Permittee must follow the procedures in the Closure Plan in Section I of the permit application, and the terms and conditions of this permit.

If the facility permanently ceases treating MIHW, the Permittee shall:

- (a) Provide written notification to the Ohio EPA DHWM within seven calendar days of the actual date that the facility ceased to treat MIHW;
- (b) Not later than fourteen days after the facility has ceased to treat MIHW, all untreated MIHW shall be removed from the facility to an authorized treatment facility that is in compliance with all applicable laws; and
- (c) Not later than thirty days after the facility has ceased to treat MIHW, all waste handling facilities, equipment, and areas on the premises where MIHW was managed shall be thoroughly cleaned as follows:
  - (i) All areas of the facility, including, but not limited to, all containers, equipment, machines, floors and facility surfaces that were in contact with untreated MIHW at any time during the operation of the facility shall be washed or otherwise subjected to procedures that substantially reduce or eliminate any remaining constituents or contaminants derived from contact with MIHW using the following approved disinfectants:
    - (a) a U.S. EPA registered hospital disinfectant that is also tuberculocidal, for a contact time as specified by the manufacturer, or

- (b) an unexpired dated stabilized bleach product that is also a U.S. EPA registered hospital disinfectant that is also tuberculocidal, for a contact time as specified by the manufacturer, or
- (c) a minimum ten percent household bleach solution prepared immediately prior to use with a minimum thirty minutes of contact time with the waste.
- (ii) Remove and properly dispose of any quench pit or liquid residues remaining at the facility.
- (d) Not later than thirty days after completing the requirements as specified, or before the closed facility may be converted to other uses, whichever occurs first, the Permittee shall submit to the appropriate Ohio EPA district office, written certification that the facility has been closed in accordance with these requirements.

I(B).11. Treatment Residuals

Unless the Permittee can show otherwise, per OAC Rule 3745-51-03(D), treatment residual from the incinerator is hazardous waste and the Permittee is considered the generator. The Permittee shall ensure the treatment residual does not contain any incompletely combusted MIHW, in accordance with the Part B permit application.

The Permittee shall manage the treatment residue generated from the incineration system and all ancilliary systems in accordance with the procedures outlined in Sections C and D of the permit application, SOPs, and all applicable Ohio hazardous waste regulations.

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**MODULE Z - INTEGRATED GROUND WATER MONITORING**  
**OAC Rule 3745-54-101**

**Z. INTEGRATED GROUND WATER MONITORING**

The Permittee maintains a network of ground water monitoring wells around the site for the purpose of detecting releases of hazardous constituents from the active incinerator operations and from the historic Charter Oil operations. The Permittee previously maintained two separate ground water programs. However, the two programs are now combined to form one Integrated Ground Water Monitoring Program (IGWMP). The IGWMP is specifically designed to coordinate the requirements of two programs: 1) on-going monitoring for the detection of new contaminant releases and 2) site-wide RCRA Corrective Action requirements. Specific RCRA Corrective Action requirements are found in Module E of this permit.

The Permittee must implement the Integrated Ground Water Monitoring Plan (IGWMP) for the facility to ensure that ground water contamination is not migrating off-site. The RCRA Facility Investigation (RFI) demonstrated that a Light Non-Aqueous Phase Liquid (LNAPL) free phase layer and dissolved phase ground water contamination still remain in the Area of Concern at the facility, also known as the Charter Oil Facility Release Area (COFRA). Ground water data collected during the RFI and as part of the Permittee's previous semi-annual ground water monitoring events has demonstrated that the ground water contamination plume is stable and not migrating off-site. Therefore, as part of the Corrective Action remedy, the Permittee will monitor the ground water on-site to address any potential migration of contamination to other areas of the property or off-site.

The IGWMP applies to the entire facility, including all regulated units listed in Modules C, D, F, and I and corrective action units listed in Module E. Under an integrated program and in accordance with OAC rule 3745-54-101, the well system, sampling scheme (including parameters monitored, appropriate sampling and analytical methods, and frequency of monitoring), evaluation procedures, record keeping, reporting and any necessary corrective action are coordinated across the site.

The ground water monitoring wells at the facility are screened in two separate zones: the silt, clay, and sand unit and the lower sand and gravel unit. Near the ground surface, the dense silt and sand to clayey-silt unit occurs and ranges in thickness from 1 to 35 feet. The unit thickens towards the Ohio River. Underlying the silt, clay and sand unit is a sand and gravel unit with a thickness ranging from 25 to 80 feet, which overlies the sandstone bedrock.

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The IGWMP will include the list and description of ground water monitoring wells which will be sampled, the frequency at which the wells will be sampled, the constituents which will be analyzed, the test methods to be used, the ground water remediation goals, the sampling and analysis procedures, the recordkeeping and reporting requirements, and the quality assurance/quality control procedures. The Permittee will prepare a new IGWMP to be provided to Ohio EPA for review and approval.

More specifically, the IGWMP will group the ground water monitoring wells into four different categories. Wells located within the ground water contamination area ("in-the-plume wells") will be sampled every two years unless LNAPL exists within the well which is considered to be more than a sheen in the well. These "in-the-plume wells" include PRW-01, PRW-02, PRW-03, PA-07, and WTI-06. The data from these wells indicates ground water contamination and, therefore, the level of constituents of concern in these wells will be monitored for changes in constituent concentration levels over time. While these wells have not been sampled regularly in the past, they have indicated the presence of LNAPL at various times during the monthly monitoring events. However, ground water samples will not be collected if LNAPL exists in the well at the time of sampling because the data will indicate the ground water saturation level since the LNAPL layer is present.

Ground water wells located outside the ground water contamination area will be monitored to ensure that the ground water contamination is not migrating. These wells, which will include PA-03, PA-04, PMW-01, and PA-08, will be called the "point-of-action wells" and they will be sampled once per year.

Wells that are located downgradient from the point-of-action wells will be monitored to ensure ground water contamination is not migrating off-site. These wells, which will include WTI-04, WTI-05, and PA-02, will be called "farther-downgradient wells" and they will be sampled once every two years or more frequently if it is determined that ground water contamination has been detected in the point-of-action wells.

Additionally, Heritage-WTI will also sample wells that are upgradient of the ground water contamination. These wells, which will include WTI-01 and WTI-02, will be sampled every two years. WTI-03, the sidegradient well, will be maintained as part of the IGWMP in order to obtain ground water elevations from the well to be used in developing the shallow contour ground water maps.

Ground water from each well in the four categories will be analyzed for volatile organic compounds, semi-volatile organic compounds, and inorganic compounds. More specifically, these constituents are:

- Volatile organic compounds: benzene, toluene, ethylbenzene, total xylenes, acetone, 2-Butanone (MEK), isopropylbenzene (cumene), methylcyclohexane,

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- methylene chloride, 4-methyl-2-pentanone (MIBK), trans-1,2-dichloroethylene, trichloroethylene (TCE), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene
- Semi-volatile organic compounds: m-dichlorobenzene, o-dichlorobenzene, p-dichlorobenzene, 2,4-dimethylphenol, 2-methylnaphthalene, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, naphthalene
- Inorganic compounds: arsenic, barium, chromium, lead, nickel.

The results from each ground water sampling event will be evaluated by the Permittee and then submitted to Ohio EPA. More specifically, the data from the in-the-plume wells will be evaluated for any trends in the data which may demonstrate that the concentrations of constituents of concern in the ground water are increasing or decreasing. The point-of-action wells will be compared to ground water remediation goals defined in Z.2 to ensure that the LNAPL plume is not migrating. The farther-downgradient wells will be evaluated for any detection of constituents of concern above the Practical Quantitation Limit (PQL) in the ground water while the upgradient wells will be used to monitor any possible constituents flowing onto the Permittee's facility. WTI-03, a sidegradient well, will be maintained and included in the list of wells from which to obtain ground water elevations.

Z.1. Applicability  
OAC Rule 3745-54-101

- (a) The Permittee must comply with the applicable requirements in OAC Rule 3745-54-101 and institute corrective action as necessary to protect human health and the environment for all releases of hazardous wastes or constituents from any waste management unit (WMU)/area at the facility, regardless of the time at which waste was placed in such unit/area for those listed in Module E.

The WMUs are operating units. The units were previously monitored under an approved detection ground water monitoring plan in accordance with the previous Permit Conditions. The AOC is a result of activities conducted under a previous owner, Charter Oil. The AOC, also known as the COFRA area, was investigated as part of RCRA Corrective Action. The IGWMP will create one ground water monitoring program for the entire facility.

- (b) Reserved.
- (c) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary, to protect human health and

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the environment, unless the owner or operator demonstrates to the satisfaction of the director that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.

Z.2. Ground Water Remediation Standard (GWRS)

The Permittee must ensure that the hazardous constituents or constituents detected in the ground water from a unit/area listed in Permit Condition E.3 do not exceed the following clean-up standards in the uppermost aquifer underlying the units/areas beyond the point of action during the permit period and to respond with any necessary corrective action to bring the ground water back into compliance with those standards. The GWRS has been established in this Permit due to hazardous constituents being detected in the ground water.

(a) List of Hazardous Constituents and Ground Water Clean-Up Standards

The Permittee must monitor the ground water to determine whether units/areas are in compliance with the GWRS. The hazardous constituents listed in the Appendix to OAC Rule 3745-54-98 detected in the ground water underlying a unit/area and reasonably expected to be contained in or derived from the waste contained in the unit/area to which the GWRS applies and their ground water clean-up standards are listed below:

Hazardous Constituents	Clean-Up Standards
benzene	0.005 mg/L
toluene	1 mg/L
ethylbenzene	0.7 mg/L
total xylenes	10 mg/L
acetone	To Be Determined (TBD)
2-butanone (MEK)	TBD

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isopropylbenzene (cumene)	TBD
methylcyclohexane	TBD
methylene chloride	TBD
4-methyl-2-pentanone (MIBK)	TBD
trans-1,2-dichloroethylene	0.1 mg/L
trichloroethylene (TCE)	0.005 mg/L
1,2,4-trimethylbenzene	TBD
1,3,5-trimethylbenzene	TBD
o-dichlorobenzene	0.6 mg/L
p-dichlorobenzene	0.075 mg/L
m-dichlorobenzene	TBD
2,4-dimethylphenol	TBD
2-methylnaphthalene	TBD
bis(2-ethylhexyl)phthalate	TBD
di-n-octylphthalate	TBD
naphthalene	TBD
arsenic	0.010 mg/L
barium	2 mg/L
chromium	0.1 mg/L
lead	0.015 mg/L
nickel	TBD

Within one year of the permit approval, the Permittee will provide to Ohio EPA for approval, background, maximum contaminant levels (MCLs) and/or risk-based GWRS for all compounds. The risk-based GWRS must

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be for unrestricted potable use and must take the additive effects of the compounds into consideration.

(b) Point of Action

The Permittee has integrated the ground water monitoring programs site-wide. The combined point of action (POA) at which the GWRS applies is indicated on a figure to be submitted by the Permittee as part of the Integrated Ground Water Monitoring Plan to be submitted by the Permittee and approved by Ohio EPA. The Permittee must monitor the wells listed in Permit Condition Z.3(b), with the exception of well WTI-03, for the constituents listed in Permit Condition Z.2(a). The Permittee must monitor the ground water passing the point of action, the ground water between the point of action and the downgradient property boundary to determine if the clean-up standard has been exceeded at any point between the point of action and the downgradient property boundary.

(c) Permit Period

The period, during which the GWRS applies, is the permit period, to be renewed as long as constituents are detected above the GWRS at any well facility wide. During the permit period the Permittee must establish and implement a monitoring program that will detect, respond, and report as necessary to protect human health and the environment from all releases of hazardous constituents above the cleanup standards at the point of action and between the point of action and the downgradient property boundary. The Permittee shall implement corrective action beyond the property boundary, where necessary, to protect human health

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and the environment pursuant to the requirements in Permit Condition Z.1(c).

Z.3. Well Location, Installation, Maintenance, and Removal

- (a) The Permittee's ground water monitoring system must consist of a sufficient number of wells, installed and screened at appropriate locations and depths to yield ground water samples from the silt, clay and sand zone and the sand and gravel zone. The samples must:
- (i) Represent the quality of background water that has not been affected by leakage from the units/areas;
  - (ii) Represent the quality of ground water passing the point of action, between the point of action and the downgradient property boundary, and beyond the property boundary, where necessary, to protect human health and the environment;
  - (iii) Allow for the detection and measurement of contamination for all potential release pathways to the uppermost aquifer from the waste management units/areas based on site-specific hydrogeologic characterization when hazardous constituents have migrated from the unit/area to the uppermost aquifer; and
  - (iv) Demonstrate the effectiveness of any corrective action program. The well system should be as effective in determining compliance with the GWRS and in determining the success of the corrective action program.
- (b) The Permittee will maintain the monitoring system, which consists of the ground water wells as specified on a figure to be submitted by the Permittee and approved by Ohio EPA as part of the integrated Ground Water Monitoring Plan and in conformance with the following list:

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Well Identifier	Upgradient/ Downgradient	Purpose
PA-03	Downgradient	Point of Action
PA-04	Downgradient	Point of Action
PMW-01	Downgradient	Point of Action
PA-08	Downgradient	Point of Action
WTI-04	Downgradient	Farther downgradient from Point of Action
WTI-05	Downgradient	Farther downgradient from Point of Action
PA-02	Downgradient	Farther downgradient from Point of Action
PRW-01	Within the plume	Record levels of contamination within the plume
PRW-02	Within the plume	Record levels of contamination within the plume
PRW-03	Within the plume	Record levels of contamination within the plume
PA-07	Within the plume	Record levels of contamination within the plume
WTI-06	Within the plume	Record levels of contamination within the plume
WTI-01	Upgradient	Record ground water quality entering facility
WTI-02	Upgradient	Record ground water quality entering facility
WTI-03	Sidegradient	Record ground water elevations

- (c) Wells identified in Permit Condition Z.3(b) must be cased in a manner that maintains the integrity of the monitoring well bore hole and complies with the detailed plans and specifications presented in the IGWMP to be submitted by the Permittee and approved by Ohio EPA. The casing must be screened and packed with gravel or sand, where necessary, to enable collection of ground water samples. The annular space above the sampling depth must be sealed to prevent contamination of samples and the ground water.

The IGWMP to be submitted by the Permittee and approved by Ohio EPA must contain ground water monitoring well construction diagrams which illustrate compliance with this Permit Condition.

- (d) The Permittee must remove or replace any monitoring well in Permit Condition Z.3(b) in accordance with the Appendix to OAC Rule 3745-50-51 permit modification process. Each change must be accompanied by a revised figure as specified in Permit Condition Z.3(b) and to be included in the Integrated Ground Water Monitoring Plan to be submitted by the Permittee and approved by Ohio EPA.

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- (e) Whenever any of the wells specified in Permit Condition Z.3(b) are replaced, the Permittee must demonstrate to Ohio EPA that the ground water quality at the replacement well meets the criteria in Permit Condition Z.3(a) within one year from the date of replacement using means appropriate to the reason for replacement.

Z.4. Sampling and Analysis Procedures

- (a) The Permittee must implement the IGWMP to be submitted by the Permittee and approved by Ohio EPA. This program must include consistent sampling and analysis procedures designed to ensure monitoring results that provide a reliable indication of ground water quality below the units/areas and in compliance with this Permit Condition.
- (b) The IGWMP to be submitted by the Permittee and approved by Ohio EPA must include sampling and analytical methods that are appropriate for ground water sampling and that accurately measure hazardous constituents in ground water samples.
- (c) Field and analytical data must be validated in accordance with the procedures specified in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (d) Ground water elevations must be measured using the techniques described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (e) Each well that is identified in Permit Condition Z.3(b) must be checked for the presence of immiscible layers using an interface probe as described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (f) Samples must be collected and handled (including well evacuation, sample withdrawal, preservation, containerization, filtration, and shipment using Chain of Custody procedures) to ensure representative samples are obtained using the techniques and equipment described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (g) The Permittee must collect samples from the wells least likely to exhibit ground water contamination prior to collecting samples from wells with known or suspected ground water contamination.

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- (h) Field analysis must be performed using instruments, procedures, and forms described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (i) Sampling equipment must be decontaminated using techniques described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (j) Purge water must be disposed in accordance with the procedures described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (k) Laboratory analytical methods, detection limits and sample holding time must be in accordance with techniques described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (l) Quality assurance, including field, laboratory, and equipment blanks, duplicate samples, and identification of potential interferences, must be in accordance with the methods described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (m) Field and analytical data must be validated in accordance with the procedures specified in the IGWMP to be submitted by the Permittee and approved by Ohio EPA and reported as specified in Permit Condition Z.8.
- (n) Chain of Custody procedures, including standardized field tracking reporting forms, and sample labels, must be in accordance with the IGWMP to be submitted by the Permittee and approved by Ohio EPA.

#### Z.5. Ground Water Surface Elevation

The Permittee must determine the ground water surface elevation at each well identified in the table in Permit Condition Z.3(b) each time ground water is sampled using the methods in the IGWMP to be submitted by the Permittee and approved by Ohio EPA. This information must be submitted in accordance with Permit Condition Z.8.

The Permittee must report, in writing to the Ohio EPA, Northeast District Office, the surveyed elevation of the tops of casings, the ground surface and/or aprons, and protective casing of any new or replacement monitoring wells within 30 days of the date of installation.

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Z.6. Sampling Frequency

Data on each hazardous constituent specified in Permit Condition Z.2(a) will be collected from all wells listed in Permit Condition Z.3(b), with the exception of well WTI-03. The sampling procedure and interval for each constituent must be described in the IGWMP to be submitted by the Permittee and approved by Ohio EPA and in accordance with the below table.

Well Identifier	Sampling Frequency
PA-03	Annual
PA-04	Annual
PMW-01	Annual
PA-08	Annual
WTI-04	Every two years
WTI-05	Every two years
PA-02	Every two years
PRW-01	Every two years, unless LNAPL present in well at time of sampling
PRW-02	Every two years, unless LNAPL present in well at time of sampling
PRW-03	Every two years, unless LNAPL present in well at time of sampling
PA-07	Every two years, unless LNAPL present in well at time of sampling

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WTI-06	Every two years, unless LNAPL present in well at time of sampling.
WTI-01	Every two years
WTI-02	Every two years

- (a) The number and kinds of samples collected to establish background must be appropriate for the form of statistical test employed, following generally accepted statistical principles.
- (b) The sample size must be as large as necessary to ensure with reasonable confidence that a contaminant release to ground water from a facility will be detected.
- (c) Background data must be updated as necessary in accordance with the IGWMP to be submitted by the Permittee and approved by Ohio EPA to provide an accurate representation of background ground water quality. New or revised background values must be established in the permit through the permit modification process in OAC Rule 3745-50-51.

Z.7. Statistical Procedures

The Permittee may evaluate the ground water monitoring results for each hazardous constituent in Permit Condition Z.2(a) by directly comparing the ground water monitoring analytical results from each sampling event to the GWRS as identified in Permit Condition Z.2(a) or the Permittee may use the following statistical procedures in evaluating ground water monitoring results for each hazardous constituent in Permit Condition Z.2(a) in each well in Permit Condition Z.3(b), except WTI-03, to identify statistically significant evidence of contamination, the exceedance of a clean-up standard, and/or the effectiveness of corrective action:

- (a) For those constituents for which background values have not been collected and established at the time of Permit Application, the Permittee must choose and submit to Ohio EPA the appropriate statistical method within 45 days after the receipt of the last background sampling event data through the permit modification process in OAC Rule 3745-50-51.

For those constituents for which background values have been collected, the Permittee must conduct statistical procedures as presented in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.

- (b) The Permittee's statistical procedures must be protective of human health and the environment, provide reasonable confidence that the migration of

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hazardous constituents from a unit/area into and through the aquifer will be indicated, and will determine whether such leakage of hazardous constituents into the ground water exceeds specified clean-up standards in Permit Condition Z.2(a). The statistical procedures must comply with the following performance standards:

- (i) The statistical evaluation of ground water monitoring data must be conducted separately for each hazardous constituent specified in Permit Condition Z.2(a) in each well.
- (ii) The statistical method must be appropriate for the distribution of the data used to establish background or clean-up standards. If the distribution for the constituents differ, then more than one statistical method may be needed. Methodology of updating background must be included in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
- (iii) The statistical method must provide a reasonable balance between the probability of falsely identifying a non-contaminating and/or exceeding unit/area and the probability of failing to identify a contaminating and/or exceeding unit/area.
- (iv) If a control chart approach is used, the specific type of control chart and its associated parameter values must be proposed by the Permittee and approved in the permit.
- (v) If a prediction interval procedure is used, the levels of confidence and the percentage of the population that the interval must contain, must be proposed by the Permittee and approved in the permit. These parameters must be determined after considering the number of samples in the background data base, the data distribution, and the range of concentration values for each constituent of concern.
- (vi) The statistical method must account for data below the limit of detection with one or more statistical procedures. Any practical quantitation limit (PQL) approved in the permit that is used in the statistical method must be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the Permittee.

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- (vii) If necessary, the statistical method must include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

Z.8. Operating Record and Reporting

OAC Rules 3745-54-73, 3745-54-75, and 3745-54-77

(a) Operating Record

The Permittee must enter all of the following information obtained in accordance with Permit Module Z in the operating record and submit a Final Data Report and Evaluation to Ohio EPA, in accordance with Permit Condition Z.8(b):

- (i) Ground water monitoring data collected in accordance with this permit including actual levels of constituents.
- (ii) The laboratory results from each of the well samples and their associated qualifiers including the laboratory sheets for every sampling event (including laboratory method numbers, method detection limits, laboratory practical quantitation limits (PQLs), and units of measurement);
- (iii) The date each well was sampled (tabulated);
- (iv) The date, time, and identification of all blanks and duplicates;
- (v) Any field log or laboratory report documentation of deviation from the procedures in the IGWMP to be submitted by the Permittee and approved by Ohio EPA, including documentation of parameter omissions during the sampling event;
- (vi) The date the Permittee received the results from the laboratory;
- (vii) The date the owner or operator completed their review of the analytical laboratory's verification of the accuracy and precision of the analytical data and determined its quality.

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- (viii) The results of the data validation review per Permit Condition Z.8(a)(vii) including: report completeness, chain of custody, sample receipt form, signed statement of validity, technical holding time review, data qualifiers including their definitions, dilutions, blank data, spikes, spike recovery percent, surrogate recovery, and an explanation of any rejected results;
  - (ix) Results of all blanks, duplicates (trip, field, equipment, and method), matrix spike analysis, and laboratory control samples;
  - (x) Results of the field parameters;
  - (xi) The statistical evaluation of the data (must include all computations, results of statistical tests, and date the statistical evaluation was completed);
  - (xii) Ground water surface elevations taken at the time of sampling each well;
  - (xiii) Data and results of the annual determination of the ground water flow rate and direction, including potentiometric surface map;
  - (xiv) The results of the last three years of all inspections required under OAC Rule 3745-54-15(D) related to ground water monitoring and equipment as required under OAC Rule 3745-54-73(B)(5).
  - (xv) Evaluation of the efficiency of any corrective actions performed to bring the ground water quality into compliance with the GWRS per Permit Condition Z.2.
  - (xvi) A report on the effectiveness of the IGWMP, performed by a qualified hydrogeologist.
- (b) Sampling and Annual Reporting

The Permittee must submit a Final Data Report and Evaluation for each sampling and analysis event, conducted in the spring (April, May, or June) of each year. The Report must contain, at a minimum, the information listed in Permit Condition Z.8(a). The Report must be submitted to Ohio EPA, Northeast District Office and entered into the operating record. The

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Permittee must maintain all documentation from the laboratories regarding analysis of ground water samples. Ohio EPA may require submittal of a copy of the full quality assurance/quality control (QA/QC) report for a particular event if circumstances warrant; but, in general, this will not be required.

The Permittee must submit an annual report to the Director by March 1<sup>st</sup> or the first business day thereafter if March 1<sup>st</sup> falls on a weekend or holiday. The annual reports must reference the titles and dates of any sampling reports required by the permit or any updates to those reports, but generally do not need to include duplicates of hard copies previously submitted.

The annual reports must include, at a minimum, the analytical results required by Permit Conditions Z.6 and Z.9, the ground water elevation data required by Permit Conditions Z.5 and Z.8(a)(xii) and (xiii), and the results of any statistical analyses required by Permit Conditions Z.7 and Z.9. In addition, a copy on disk of all ground water and blank data must be submitted electronically in the format for the Supplementary Annual Ground Water Monitoring Report supplied by the Director, a paper copy of well-specific information (location (latitude and longitude), depth, construction, etc.) for any new/replacement wells, and any other information specified in the instructions for the annual report not addressed in this Permit Condition must be submitted as required by OAC Rule 3745-54-75.

These two reports may be combined into one report to be submitted as soon as technically feasible after the sampling event or by March 1<sup>st</sup> of the following year at the latest. However, it is important to note that Permit Condition Z.9(c) must be followed when determining if the GWRs have a confirmed exceedance.

(c) Other Periodic Reporting

The Permittee must comply with any other reporting requirements that become necessary under Permit Condition Z.9 in accordance with the schedules covered by that permit condition and as required by OAC Rule 3745-54-77(C).

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Z.9. Integrated Ground Water Monitoring Program (IGWMP)  
OAC Rules 3745-54-101

- (a) The Permittee must establish and implement a ground water monitoring program to fully characterize the contaminated ground water as required by OAC Rule 3745-50-44(B)(8)(a) and to demonstrate the effectiveness of the corrective action program. Ground water monitoring must be effective in determining compliance with the GWRS in Permit Condition Z.2 and in determining the success of any corrective action program in this condition. The ground water monitoring program must include:
- (i) Installation and maintenance of a ground water monitoring system at the point of action as defined in Permit Condition Z.2(b), and, as necessary to protect human health and the environment, between the point of action and the downgradient property boundary and beyond the property boundary. The ground water monitoring system must comply with the requirements in Permit Condition Z.3.
  - (ii) Collection, preservation, and analysis of samples pursuant to Permit Conditions Z.4, Z.5, and Z.6. Statistical analysis must be conducted pursuant to Permit Condition Z.7
  - (iii) The Permittee must conduct a sampling program as described in Z.6 for each chemical parameter and hazardous constituent specified in Permit Condition Z.2(a) from each well (background and action) specified in Permit Condition Z.3(b) during the permit period and any extensions due to corrective action implementation.

Any additional sampling shall be taken at an interval (frequency) that assures, to the greatest extent feasible, that an independent sample is obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, hydraulic gradient, and the fate and transport characteristics of the potential contaminants.

- (iv) The Permittee shall determine the concentrations of the hazardous constituents specified in Permit Condition Z.2(a), throughout the permit period specified in Permit Condition Z.2(c), and report the concentrations, including all estimated values above the method detection limit and PQL, to Ohio EPA, per Permit Condition Z.8.

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The Permittee shall compare the concentration of each hazardous constituent measured at each well specified in Permit Condition Z.3(b), except well WTI-03, with its cleanup standard each time ground water quality is determined in accordance with the procedures specified in Permit Condition Z.7.

Wells beyond the property boundary shall be sampled where necessary to protect human health and the environment, unless the Permittee demonstrates to the Agency that, despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such action. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

- (v) The Permittee must maintain a record of ground water analytical data as measured and in a form necessary for the determination of statistical significance under Permit Conditions Z.7 and Z.8 for the permit period.
  - (vi) The Permittee must determine the ground water flow rate and direction in the uppermost aquifer at least annually using the procedures specified in the IGWMP to be submitted by the Permittee and approved by Ohio EPA.
  - (vii) Reserved.
- (b) The Permittee is required to establish and implement a ground water corrective action program under OAC Rule 3745-54-101 and must take corrective action, as necessary, to ensure that units/areas are in compliance with the GWRS as specified in Permit Condition Z.2.
- (i) The Permittee shall collect, preserve, and analyze samples in accordance with Permit Condition Z.4.
  - (ii) The Permittee shall determine the concentrations of the hazardous constituents specified in Permit Condition Z.2.a, throughout the permit period specified in Permit Condition Z.2.c, and report the concentrations, including all estimated values above the method detection limit and PQL, to Ohio EPA, per Permit Condition Z.8.

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- (iii) The Permittee shall determine the ground water flow rate and direction in the uppermost aquifer at least annually, as outlined in the IGWMP to be submitted by the Permittee and approved by Ohio EPA, and report the ground water flow rate and direction to Ohio EPA per Permit Condition Z.8.
  
- (c) Following any ground water sampling event, the Permittee must compare the analytical results from the in-the-plume wells, point-of-action wells, wells farther-downgradient from the point-of-action wells, and upgradient wells to the GWRS to determine if a confirmed exceedance occurred. The Permittee must implement, as necessary, a corrective action program that prevents hazardous constituents specified in Permit Condition Z.2(a) from exceeding their respective clean-up standards specified in Permit Condition Z.2(a) at the point of action specified in Permit Condition Z.3(b), between the point of action and the downgradient property boundary, and beyond the property boundary during the permit period specified in Permit Condition Z.2(c) by removing the hazardous constituents or by treating them in place.
  - (i) When the GWRS have a confirmed exceedance at the in-the-plume wells listed in Permit Condition Z.3(b), then the Permittee must evaluate the data for any trends in the data which may demonstrate that the constituents listed in Permit Condition Z.2(a) are increasing or decreasing and report that information to Ohio EPA in accordance with Permit Condition Z.8.
  - (ii) When the GWRS have a confirmed exceedance at the point-of-action wells or the farther-downgradient from the point-of-action wells listed in Permit Condition Z.3(b), the Permittee must:
    - (a) Notify the director in writing within seven days of this finding.
    - (b) Sample the farther-downgradient from the point-of-action wells listed in Permit Condition Z.3(b) within 30 days of this finding, if not sampled as part of the current ground water sampling event.
    - (c) Within 90 days of this finding, submit a permit modification to establish and implement a corrective action program that

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prevents constituents in the ground water from exceeding the GWRS at the point-of-action wells or farther-downgradient from the point-of-action wells by removing the hazardous constituents or by treating them in place. If corrective action pursuant to OAC rule 3745-54-101 and Permit Module E is already occurring, then any corrective action necessary in response will be coordinated with Permit Module E to the extent practical. The modification application will, at a minimum, include the following information:

- (i) A detailed description of the remedial actions that will remove or treat in place any hazardous constituents that exceed their respective GWRS, as defined in Permit Condition Z.2.a, between the point-of-action wells and the downgradient facility property boundary. To the extent practicable, this remedial action shall be integrated with corrective action activities under Module E of this permit.
- (ii) A plan for a ground water monitoring program that will demonstrate the effectiveness of the remedial action.
- (iii) When the GWRS have a confirmed exceedance at the upgradient wells listed in Permit Condition Z.3(b), the Permittee must:
  - (a) Notify the director in writing within seven days of this finding.
  - (b) The Permittee may make a demonstration that the ground water upgradient of the facility property may be impacting the monitoring wells located on the facility property.
- (iv) The Permittee may demonstrate that a source other than the facility caused a confirmed exceedance of the GWRS or that the exceedance is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. In making such a determination, the Permittee must:
  - (a) Notify the director in writing, within 7 days of determining that the facility has reached or exceeded the GWRS, of the intent to make a demonstration.

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- (b) Include in the Sampling Report in Permit Condition Z.8 a report which successfully demonstrates that a source other than the facility caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis or evaluation.
  - (c) Include in the Sampling Report in Permit Condition Z.8 an application for a permit modification to make any appropriate changes to the IGWMP at the facility.
  - (d) The Permittee may make this demonstration in addition to, or in lieu of, submitting a permit modification application to modify the IGWMP for corrective action. However, the same period of 90 days is required for both a successful "Other Source Demonstration" and the submittal of the permit modification application in accordance with Z.9. The Permittee is not relieved of the 90 day requirement for a permit modification unless the "Other Source Demonstration" is deemed successful by the Agency prior to the 90 day time limit.
  - (e) Continue to monitor in accordance with the IGWMP at the facility.
- (d) Reserved
- (e) Response Action
- (i) If, based on the results of the Permittee's ground water monitoring program, the GWRS detailed in Permit Condition Z.2(a) have not had a confirmed exceedance, with the exception of in-the-plume wells, then the Permittee shall continue under routine IGWMP monitoring.
  - (ii) If the Permittee determines the corrective action program established by this permit no longer satisfies the requirements of OAC Rule 3745-54-101, then the Permittee must, within ninety (90) days of that determination, submit an application for a permit modification per OAC Rule 3745-50-51 to make any appropriate changes to the program.

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- (iii) The ground water monitoring requirements may be reduced or eliminated in the event that the Permittee can successfully demonstrate with Ohio EPA approval that the level of contamination has been reduced to below the GWRS and is protective of human health and the environment.

**END OF PERMIT CONDITIONS**

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**ATTACHMENT 1 - WASTE FEED CUT-OFFS**

<b>AUTOMATIC WASTE FEED CUT-OFFS</b>	
<b>PARAMETER</b>	<b>OPERATING LIMIT - TESTED WEEKLY</b>
FRONT WALL LANCES	ATOMIZATION PRESSURE AT LANCES MUST BE > 45 PSIG
SPRAY DRYER OUTLET TEMPERATURE	MUST BE ABOVE 250°F AND BELOW 450°F

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<b>MANUAL WASTE FEED CUT-OFFS</b>	
<b>PARAMETER</b>	<b>OPERATING LIMIT - TESTED WEEKLY</b>
ECIS	ACTIVATED CARBON FEED RATE AND LOCATION ACCORDING TO PERMIT
PLUME SUPPRESSION REHEAT FAN	MUST BE OPERATING ACCORDING TO PERMIT APPLICATION
FEED RESTRICTION MAXIMUM TOTAL WASTE	29,651 LBS/HR AT ANY TIME; OR 28,565 LBS/HR (FOUR HOUR ROLLING AVERAGE)
FEED RESTRICTION: MAXIMUM SOLIDS FEED RATE; CONTAINERS AND BULK	16,576 LBS/HR AT ANY TIME; OR 15,265 LBS/HR (FOUR HOUR ROLLING AVERAGE)
FEED RESTRICTION: MAXIMUM COMBINED SLUDGE AND SLURRY LANCE FEED RATES	20,099 LBS/HR AT ANY TIME; OR 19,602 LBS/HR (FOUR HOUR ROLLING AVERAGE)
<b>FEED RESTRICTION: CHLORINE FEED</b>	< 2700 LBS/HR (THREE HOUR AVERAGE)
FEED RESTRICTIONS: METALS FEEDS	HOURLY AND ANNUAL FEED RATES FOR TWELVE METALS, SEE ATTACHMENT 2 TO THIS PERMIT
OPACITY AT STACK	<20% (SIX MINUTE AVERAGE)
MONITORING EQUIPMENT FOR SELECT OPERATING PARAMETERS	SELECT MONITORING EQUIPMENT LISTED IN PERMIT CONDITION I(A).6 OPERATING PROPERLY
FACILITY POWER	GENERAL POWER FAILURE
AUXILIARY FUEL	MUST BE AVAILABLE AT ALL TIMES WASTE IS BEING FED TO THE INCINERATOR

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 OHIO EPA NEDO

**ATTACHMENT 2 - PERMIT CONDITIONS REGARDING THE EMISSIONS OF METALS, INCINERATOR FEED RATE OF METALS, AND THE CONTINUOUS MONITORING OF METALS IN THE FLUE GAS:**

A) Metals Emissions and Feed Rates

- 1) The Permittee shall comply with the ~~hourly and~~ annual metals emission rate limitations listed below in Condition A.5. of this Attachment. Until such time as an appropriate method is approved by the Ohio EPA for the continuous or semi-continuous monitoring of metals emissions in the incinerator flue gas, the Permittee shall establish compliance with these limits by tracking the amount of metals contained in the wastes fed into the incinerator. The appropriate metals feed rates are given in Condition A.5. of this Attachment. Compliance shall be tracked and demonstrated on the basis of 60-minute rolling averages, defined as the arithmetic mean of the 60 most recent 1-minute average values, unless an equivalent method is approved by the Director. For the purposes of this Condition, the "amount of metals contained in the waste" includes measured, estimated, and/or default maximum values in accordance with the Permittee's existing waste characterization program.
- 2) If and when the Ohio EPA approves the use of continuous or semi-continuous flue gas metals emission monitoring for demonstrating compliance with the metals emission limits in Condition A.5. of this Attachment, the Permittee shall track and demonstrate compliance with the ~~hourly and~~ annual emission limits shown in Condition A.5. of this Attachment. At such times as the Permittee is demonstrating compliance with the emission limits in this manner, the metals feed limits will not apply. During periods of malfunction of the continuous monitoring system, the Permittee shall use the feed limits to demonstrate compliance, as described in Conditions A.1. and A.4. of this Attachment.
- 3) When demonstrating compliance via the multiple metals continuous emission monitor system, compliance shall be tracked and demonstrated on the basis of hourly rolling averages, based on samples being taken and analyzed once every 2 minutes or less, where each rolling average is calculated as the arithmetic mean of all sample concentration values recorded over the previous 60 minutes, unless otherwise directed by the Director. After sufficient operating data is collected to demonstrate that an alternate time-averaging technique is equivalent, the Permittee may petition the Director to use an equivalent averaging technique.

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- 4) During periods of malfunction of the continuous monitoring system (for the purposes of this permit, "malfunction" includes any period of time when valid emission data cannot be collected), the Permittee shall demonstrate compliance as follows:
- a) For data interruptions of 12 minutes or less, metals emissions will be considered to be equivalent to the value recorded immediately prior to the interruption;
  - b) For interruptions longer than 12 minutes, compliance with the metals emission limits will revert to feed tracking, as described in Condition A.1. of this Attachment, with the first 60-minute rolling average being generated at the 60th minute after the monitor became inoperative.
- 5) The following metals feed or emission limits shall apply, as described in Conditions A.1. and A.2. of this Attachment:

Metal	Annual Emission Limit	Annual Feed Rate Limit
Ba	682 lbs/yr	2.96 E+5 lbs/yr
Hg	355 lbs/yr	<del>355</del> 443 lbs/yr
Ag	954 lbs/yr	2.27 E+5 lbs/yr
Tl	6.6 lbs/yr	2870 lbs/yr
Ni	4170 lbs/yr	1.36 E+6 lbs/yr
Se	102 lbs/yr	3.4 E+4 lbs/yr
Sb	11.1 lbs/yr	82,300 lbs/yr
As	43.8 lbs/yr	3.3 E+4 lbs/yr
Be	2.50 lbs/yr	2630 lbs/yr
Cd	107 lbs/yr	1.0 E+5 lbs/yr
Cr	15.8 lbs/yr	1.56 E+6 lbs/yr
Pb	254 lbs/yr	8.7 E+5 lbs/yr

- 6) Compliance with the annual metals feed limits or the annual emission limits, as described in Conditions A.1. through

A.4. of this Attachment, will be regarded as compliance with the metals requirements of Permit Condition I(A).3.(i) of this permit.

- 7) If the Director determines that any of the 12 metals listed in Condition A.5. of this Attachment are significantly less toxic or carcinogenic than was assumed in the May 1997 U.S. EPA risk assessment for Von Roll America, Inc., also known as Waste Technologies Industries (WTI), the Permittee may petition the Director to relax the relevant metals emission and feed limits.

B) Test Plan for Establishing the Acceptability of the Multiple Metals Continuous Emission Monitor:

- 1) The Permittee shall submit to Ohio EPA for approval a detailed plan describing a proposed sampling and analysis program, including quality assurance elements, to be used to establish the acceptability of performance of the proposed multiple metals continuous emissions monitor. Performance should be related to the requirements of proposed Performance Specification 10 (FR Vol 61, No.77, pp17499- 17502, April 19, 1996) or equivalent, as approved by the Director. The test plan should include a detailed description of the proposed relative accuracy testing, including calculated target spiking rates, expected detection limits, target incineration system operating conditions, planned daily sampling schedule, and a detailed quality assurance plan. The plan will, at a minimum, include the testing of each of the 12 regulated metals listed in Condition A.5. of this Attachment at a concentration detectable by both the reference method and the continuous emission monitor system, and the testing of one metal (not necessarily one of the 12) at multiple concentrations. The plan must also address calibration of the various components of the continuous monitoring system.
- 2) The Permittee shall submit to Ohio EPA detailed drawings of such details as the sampling probe, sample location, and sample interface.
- 3) The Permittee shall submit to Ohio EPA a copy of the operating manual for the multiple metals continuous emissions monitoring system. Such manual must specifically address calibration of the system.
- 4) At such time as Ohio EPA finds the test plan and other submittals required under Conditions B.2. and B.3. of this Attachment acceptable, Ohio EPA will publish a public notice of intent to approve the test plan and

a copy will be made available in the local library. This Condition does not require that a public comment period be held.

C) Acceptability Testing of the Multiple Metals Continuous Emission Monitor.

- 1) Upon Ohio EPA approval of the Permittee's Test Plan, the Permittee shall schedule dates and times for testing, notify Ohio EPA and other interested agencies of the test schedule, and perform the tests. The Permittee may elect to conduct more than one set of tests.
- 2) The Permittee shall submit copies of the results of the acceptability tests to Ohio EPA and other interested agencies, and to the local library. The Permittee shall certify the results in accordance with Ohio Administrative Code Rule 3745-50-42. The Permittee shall notify the public of the availability of the test report at the library.
- 3) Ohio EPA will analyze the results of the acceptability tests and, within 30-60 days, either approve or disapprove the initial use of the multiple metals continuous emissions monitor for establishing compliance with the applicable metals emission limits.
- 4) If, based on the results of the tests and/or other relevant information, Ohio EPA disapproves the use of the continuous emission monitor for establishing compliance, Ohio EPA will provide the Permittee with the reasons for disapproval and a list of all issues which must be resolved before Ohio EPA will again consider approving the monitor for establishing compliance.

D) Initial Use of Multiple Metals Continuous Emissions Monitor for Establishing Compliance:

- 1) If Ohio EPA approves the use of the multiple metals continuous emissions monitor for establishing compliance with the metals emission limits, as described in Condition C.3., above, the Permittee may begin using the monitor for this purpose at any time after such approval. Such approval will not be regarded as a requirement to use the monitor for compliance purposes.
- 2) During this period, the monitor shall be re-calibrated at least once every 24 hours, and zero drift and calibration drift tests shall be conducted at least every 24 hours.

- 3) Within a reasonable period of time, the Permittee shall make metals compliance data from the monitoring system available on the facility's electronic bulletin board system. Such data shall include values calculated in units of mass per time similar to the emission limits listed above in Condition A.5. of this Attachment.
- 4) During this period of time, whenever the continuous emission monitor becomes inoperable, is suspected by the Permittee of producing erroneous data, or is taken out of operation for any other reason, metals compliance determinations shall revert to feed monitoring, as described in Condition A.4. of this Attachment.
- 5) During this period of time, the Permittee will also collect data regarding monitor downtime, calibration error, zero drift, calibration drift, and other information useful in evaluating the long-term viability of the continuous emission monitor system.
- 6) During this period of time, the Permittee shall also conduct at least one additional acceptability test, according to the plan approved under Condition C.3 of this Attachment, and submit the results to Ohio EPA. If the Permittee wishes to continue to use the continuous emission monitor for establishing compliance with the metals limits, relative accuracy tests shall be performed at least once per calendar year unless otherwise directed by the Director.
- 7) During this period of time, if information becomes available which, in the judgement of the Director, indicates that tracking metals compliance via the continuous emission monitor system is not as protective as tracking metals compliance via the feed tracking method of Condition A.1 of this Attachment, the Director reserves the right to withdraw the approval described in Condition D.1 of this Attachment.

E) Final Approval to Use Continuous Emissions Monitor for Establishing Compliance:

- 1) After a minimum of six months of operation of the continuous emission monitor system, and after a minimum of three months following the approval described in Condition D.1 of this Attachment, the Permittee may petition the Director for final approval to permanently use the device to establish compliance with the applicable metals emission limits.

- 2) As part of the petition, the Permittee may also request consideration of the use of a minimum data availability requirement in lieu of the specific monitor downtime requirements of Condition A.4. of this Attachment. In evaluating such request, the Director may consider information gathered during the operation of the monitor system, including recorded monitor downtime and other operational records of the monitor system, results of acceptability tests, and data comparing actual recorded metals emission rates to the relevant metals emission limits.
- 3) The Director will either approve or disapprove such petition. If the Director approves such petition, the Ohio EPA will specify any additional permit conditions for the continuous emission monitor system shown to be necessary over the trial period.

**ATTACHMENT 3 - INCINERATION SYSTEM OPERATION PARAMETERS**

System Parameter	Instrument (DCS Tag#) and Monitoring System	Operating Limit and Monitoring Frequency	Calibration Frequency	Back-up System
Front Wall Lances	FI-3110, 3120, 3130, 3140, 3150, 3160 Pressure switches	Atomizing steam, air or oxygen pressure > 45 psi Monitored continuously	annually or as needed	WFCO
Slag Quench Tank	LI-4610, Level indicator	water level in tank monitored continuously	annually or as needed	none

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System Parameter	Instrument (DCS Tag#) and Monitoring System	Operating Limit and Monitoring Frequency	Calibration Frequency	Back-up System
Spray Dryer Outlet Temperature/ ESP Inlet Temperature	TI - 6002, Redundant thermocouples	Must be above 250 F; and Must be below 450 F Recorded continuously	every 5 weeks	WFCO
Scrubber Liquid-Flows	FI-7001 FI-7204 FI-7304 FI-7404; Flow meter	1 <sup>st</sup> stage, quench flow 2 <sup>nd</sup> stage, 1 <sup>st</sup> packed-bed flow 3 <sup>rd</sup> stage, 2 <sup>nd</sup> packed-bed flow* 4 <sup>th</sup> stage, ring-jet flow Monitored continuously	annually or as needed	Pump pressure transmitter and WFCO (see Attachment 1, flow to 3 <sup>rd</sup> stage)
pH of Scrubber at 3 <sup>rd</sup> Stage	AI - 7307; pH-probe	> 7-pH Monitored continuously	as-needed	WFCO
Ring Jet Pressure Drop, 4 <sup>th</sup> Stage Scrubber	PDI-7405; Pressure transmitter	Must be > 13.4 inwc Recorded continuously	monthly	WFCO
THC at Stack	AI - 7850; THC-analyzer	< 100 ppm (one minute average) Recorded continuously	daily annual RATA	WFCO
HCl at Stack	AI - 7820; HCl-analyzer	Must be < 4 lbs/hr Recorded continuously	daily annual RATA	*Flow rate to the 3 <sup>rd</sup> stage of the scrubber
Opacity at Stack	AI - 7815; Opacity-analyzer	< 20% (six minute average) Recorded continuously	daily annual RATA	None
Process Flow	FI - 7805; Flow meter	< 65,000 scfm Recorded continuously	daily	WFCO
Incineration Process Heat Release (system-load)	HI-7610-AVG2; Distributed control system (DCS)	Must be below 97.8 MMBTU/HR on a 3-hour rolling average; Recorded continuously	yearly	WFCO
ID-Fan	HS - 7610, Distributed control system (DCS)	Must be operating Monitored continuously	NA	WFCO
ECIS	HS-5740 HS-7140 Manual check	Activated carbon feed rate Recorded regularly	monthly	WFCO

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System Parameter	Instrument (DCS Tag#) and Monitoring System	Operating Limit and Monitoring Frequency	Calibration Frequency	Back-up System
Feed Restriction	Micro-motion meters; positive displacement pumps, and scales	Total feed rate, 29,651 lbs/hr (one hour average) or 28,565 lbs/hr (four hour average) Monitored and recorded continuously	Monthly and/or according to manufacturer's recommendation	WFGO
Feed Restriction	Scales	Solid waste feed rate, 16,576 lbs/hr (one hour average) or 15,265 lbs/hr (four hour average) Monitored and recorded continuously	According to manufacturer's recommendation	WFGO
Feed Restriction	Real Time Monitor	Chlorine feed rate 2700 lbs/hr (three hour average) Monitored and recorded continuously	NA	WFGO
Feed Restriction	Real Time Monitor	Metal feed rates as listed in Attachment 2 Monitored and recorded continuously	NA	WFCO
Plume Suppression (Reheat Fan)	HS - 7710, DCS	Plume suppression must be operated continuously except during maintenance	NA	Manual reset
By-Pass or Auxiliary Fuel	Front wall gas burners, HS-3520; auxiliary fuel, HS-3120	Must be available at all times waste is being fed to the incinerator	According to manufacturer's recommendation	WFCO

\* FLOW TO SCRUBBER 2ND PACKED BED BECOMES A PERMIT LIMIT DURING TIMES WHEN THE HCl ANALYZER IS BEING CALIBRATED OR IS MALFUNCTIONING.

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#### ATTACHMENT 4 - WASTE MANAGEMENT UNITS

- A) WMU 1: Incinerator System - The incinerator system treats organic hazardous waste by thermal oxidation. This unit consists of the following elements: (1) rotary kiln incinerator, (2) secondary combustion chamber, (3) heat recovery boiler, (4) spray dryer, (5) electrostatic precipitator, (6) four stage wet scrubber, (7) induced-draft fan, (8) reheat system, and (9) stack. The incineration system thermally oxidizes bulk liquid, bulk solid, and containerized wastes received from off site generators and waste generated on-site through processing activities. Wastes generated on site include used brick from annual relining of the incineration system, contaminated debris and PPE, laboratory wastes, and wastewater. Incinerator slag and ash, which constitutes treatment residual, is collected at generation points within the incinerator system for disposition off site. Slag from the incineration system is conveyed to roll off or end dump trailers and incinerator ash from the boiler, electrostatic precipitator, and spray dryer is conveyed to pneumatic tank truck. Generated waste is either treated through the incineration system or sent off site for disposition at permitted facilities. Wastes to be sent off-site are covered, labeled and stored in < 90 storage areas on-site.

The incinerator system is located on concrete within the facility's "C" water containment system as described in Sections B and C of the approved Part B permit application. Curbs, contoured surfaces, and containment sumps for this area are designed to contain up to 176,000 gallons. Air emissions from the system are continuously monitored according to permit requirements. The induced-draft fan maintains a negative pressure within the incineration system; therefore, if leakage occurs at any seals or openings, air leaks into the incinerator rather than the combustion products leaking to the atmosphere. The facility also has installed a shroud at both ends of the primary combustion chamber to further reduce the potential for fugitive emissions. The potential for release to ground water, surface water, on-site soils, and air is low.

- B) WMU 2 : Organic Waste Tank Farm - The Organic Tank Farm manages pumpable organic wastes unloaded from tank trucks and/ or portable tanks prior to thermal treatment at WMU 1. The tanks in this unit are within a 52 foot by 162 foot building with a concrete floor and containment dikes and sumps. The following 18 closed-top vertical, waste management tanks are located in this WMU: six 20,000 gallon carbon steel organic liquid storage tanks: one 7,000 gallon carbon steel organic liquid storage tank, two 20,000 gallon carbon steel sludge tanks; one 7,000 gallon carbon steel sludge storage tank, two 20,000 gallon epoxy-phenolic lined carbon steel aqueous liquid storage tanks, two 20,000 gallon epoxy-phenolic lined carbon steel blending tanks, one 10,000

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gallon epoxy-phenolic lined carbon steel blending tank, two 2,000 gallon carbon steel overflow tanks, and one 20,000 gallon carbon steel fuel oil storage tank. The unit is divided into two containment areas by a raised concrete aisle running east to west lengthwise down the center of the building, separating the unit into two tank groups, nine in each group.

The floor of this unit is constructed of reinforced concrete that has been treated to resist chemicals that are managed in this unit. The entire combined containment area is surrounded by an exterior concrete dike wall. Each separate containment area, including sumps, has a containment capacity of about 21,500 gallons. Organic vapors from this unit are vented to a vapor recovery system which is described in Section D of the approved Part B permit application. This unit manages bulk liquid wastes generated off-site and liquid wastes generated on-site before transfer to the incinerator system for treatment. There has been one release from this unit on December 29, 1999. The Contingency Plan was activated and the area was remediated. Approximately 50 gallons of a mixture of waste solvent and water was released to the gravel/soil area adjacent to, and on the west side of, the Organic Waste Tank Farm. A total of 87,061 pounds of gravel and clay were excavated and removed. The potential for release to ground water, surface water, on-site soils, and air is low.

- C) WMU 3: Organic Tanker Unload Station – This unit is a 60 foot by 75 foot building used to unload bulk liquid waste from tank trucks after the waste shipment has been approved. The unit is also used for transferring specific approved gaseous waste streams directly to the incineration system as described in Sections C and D of the approved Part B permit application. It is adjacent to, and north of, the Organic Waste Tank Farm (WMU 2). The unit is divided into three stations separated by fire walls. The east station is used to direct feed liquid waste and specific approved gaseous waste streams to the incineration system. The floor of this unit is constructed of reinforced concrete that has been treated to resist chemicals. A combination of 7.5 inch speed bumps, and 8 inch curbs surrounds each unloading station. The paved surface in each station is sloped toward a reinforced concrete sump. Each separate containment area, including sumps, curbs, contoured surfaces, and speed bumps, has a containment capacity of about 10,000 gallons. Each station is facilitated to collect vapors that may be emitted during off loading procedures. These fugitive emissions are transferred to the facility's vapor recovery system. This unit manages tank trucks containing bulk liquid wastes and

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specific approved gaseous waste streams generated off-site. Wastes are unloaded from tank trucks at this WMU into the Organic Waste Tank Farm (WMU 2) or directly to the kiln (WMU 1). Tankers may be staged in this unit in accordance with Section D of the approved Part B permit application and this permit. Designated processing of waste is also permitted in this unit in accordance with the approved Part B permit application. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

- D) WMU 4: Truck Holding and Sampling Area - This unit is a 60 foot by 96 foot open-sided, roofed area used to hold and sample incoming trucks containing bulk liquid or solid waste. This unit is also permitted for storage of containerized waste in trailers and bulk solid waste. The permitted storage capacity is 46,000 gallons. The unit is divided into six stations. The floor of this unit is constructed of reinforced concrete that has been treated to resist chemicals that are managed in this unit. A combination of 6 inch speed bumps and 6 inch curbs surround the unit. The paved surface of the unit is sloped toward a reinforced concrete sump. This unit has a containment capacity of approximately 22,000 gallons. A canopied loading/unloading dock and ramp, approximately 23 feet by 78 feet, is located east of bays 3, 4, and 5. The dock and ramp are used to off-load containerized shipments and build/load containerized shipments destined for alternate facilities. Trucks are held at this unit until sample analyses are completed and the shipment has been approved or rejected. Tankers may also be staged in this unit in accordance with Section D of the approved Part B permit application and this permit. Other activities conducted in this unit include decontaminating equipment, dewatering bulk solid waste containers, storing commercial products and raw materials, and repairing damaged containers. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- E) WMU 5: Building B (External Truck Wash) – This unit is a 25 foot by 70 foot building that is used for storage and processing of wastes. This enclosed unit has a reinforced concrete floor that has been treated to resist chemicals that are managed and stored in this unit. Containers, including tankers and roll-offs, may be staged in this unit in accordance with Section D of the approved Part B permit application and this permit. Designated processing of waste is also permitted in this unit in accordance with Section D of the approved Part B permit application.

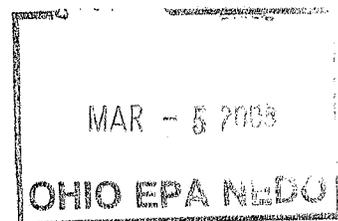
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Four inch speed bumps are located at the entrance and exit of the building. The paved surface inside the unit is sloped toward a reinforced concrete sump and trench. The contoured floor surface, sump, and trench have a containment capacity of about 7,000 gallons. The building is facilitated to collect vapors that may be released during processing activities. These fugitive emissions are transferred to the facility's vapor recovery system. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

- F) WMU 6: Wastewater Treatment – This unit, which consists of a sand and carbon filter and a back wash settling tank, is used to treat liquids from clean-up activities and/or spills, or storm water collected from “C” and rejected “B” containment systems. The storm water collection systems, “A”, “B” and “C” are described in Section B of the approved Part B permit application. Liquids from the “C” containment areas at the facility are transferred to Tank W-5 in the Storm Water Storage Tank Farm (WMU 7). From Tank W-5, the water is transferred to Tank W-4 where it may be incinerated at WMU 1 or used as make-up water for, but not limited to, the scrubber or in the DeNox System. Non-hazardous wastewater generated off-site may be received and accumulated in Tank W-5 for use as process water in designated units at the facility. If analytical of this water indicates it is in need of treatment prior to use, it is piped through the sand filter (W-9) followed by the carbon filter (W-10) prior to transfer to Tank W-4. The filter system is occasionally back washed to a tank within the Process Water Tanks (WMU 8). The Wastewater Treatment System is located in an indoor 25 foot by 60.33 foot concrete containment area with a 3.66 foot high berm, a concrete sump and a reinforced concrete floor that has been treated to resist chemicals that are managed in this unit. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- G) WMU 7: Storm Water Storage Tank Farm – This unit is a 46.5 foot by 202 foot



concrete tank farm used to store storm water from "C" and "B" containment areas. The storm water collection systems, "A", "B" and "C" are described in Section B of the approved Part B permit application. This water, with the exception of "A" areas, has the potential for contamination as it is collected from active storage and process areas and roadways where waste is transported. TANKS W-4 AND W-5, DESCRIBED IN SECTION D OF THE APPROVED PART B PERMIT APPLICATION, ARE ALSO USED TO STORE PROCESS WATER FROM THE FACILITY AND NON-HAZARDOUS WASTEWATER GENERATED OFF-SITE TO BE USED AS PROCESS WATER IN DESIGNATED UNITS AT THE FACILITY. The water is stored in five open top vertical tanks: three 200,000 gallon carbon steel tanks storing "B" water, one 250,000 gallon carbon steel tank storing "C" water, Tank W-5; and one 250,000 gallon carbon steel tank for storing the treated "C" water, Tank W-4. The area under the tanks is paved with reinforced concrete treated to resist chemicals that are managed in this unit, and it is surrounded by a 6.67 foot high reinforced concrete dike. An intermediate reinforced concrete wall 3 inches lower than the surrounding dike separates the "B" and "C" collection water tanks. ~~There have been no documented releases from this unit.~~ The potential for release to ground water, surface water, on-site soils, and air is low.

ON JANUARY 15, 1992, VRA DISCHARGED ABOUT 176,000 GALLONS OF WATER FROM A STORM WATER HOLDING TANK IN THE WASTEWATER STORAGE TANK FARM TO THE OHIO RIVER. THE STORM WATER DISCHARGED HAD A PH OF 9.5, EXCEEDING THE MAXIMUM ALLOWABLE PH OF 9.0 CITY WATER AND FRESH CONCRETE WERE SUSPECTED OF CONTRIBUTING TO THE HIGH PH VALUE.

ON SEPTEMBER 17, 2002, VRA DISCHARGED ABOUT 300 GALLONS OF 1% ACID SOLUTION FROM A "B" STORM WATER HOLDING TANK TO THE OHIO RIVER. THE MEASURED PH AT OUTFALL 601 WAS DISCOVERED TO BE 1.5, WHICH EXCEEDED THE MAXIMUM ALLOWABLE PH. THE DISCHARGE TO THE RIVER WAS A RESULT OF A LEAK IN THE TANK DISCHARGE VALVE. SEVERAL CORRECTIVE ACTIONS WERE IMPLEMENTED TO ENSURE A REOCCURRENCE OF THIS INCIDENT WOULD BE PREVENTED.

- H) WMU 8- Process Water Tanks- This unit is an approximately 50 foot by 25 foot concrete tank farm used to store scrubber water and filter system backwash water from the Wastewater Treatment System (WMU 6). The tank farm contains two 30,000 gallon fiberglass-reinforced plastic tanks (W-6 and W-7) for storing scrubber water and one approximately 6,000 gallon carbon-steel tank (W-8) for backwash water from WMU 6. The area under the tanks is paved with reinforced concrete treated to resist chemicals that are managed at this unit, and it is surrounded by a 3.67 foot high reinforced concrete dike with a containment capacity of 38,000 gallons. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

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- I) WMU 9- Laboratory Waste Storage Tank- This unit is a 1,000 gallon fiberglass-reinforced horizontal plastic tank located in a covered concrete containment vault. The vault has been treated to resist chemicals that are managed in this unit and is covered with a steel top. The facility's laboratory wastes are piped directly from the laboratory to this tank before being transferred to the Organic Waste Tank Farm (WMU 2) via vacuum truck and ultimately incinerated at SMU 1. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- J) WMU 10-Container Processing Building- This unit is a 100 foot by 237 foot area in a building located between the Organic Waste Tank Farm (WMU 2) and the incineration system (WMU 1). WMU 10 is designed to receive containerized waste from off site and prepare it for incineration at WMU 1. The unit is located

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on the south side of an enclosed building with operations on three levels. Level one is the ground floor of the unit and slopes to area sumps. Level two is the intermediate conveyor floor and slopes to area floor drains that discharge to sumps on level one. Level three is the conveyor gallery with a curbed floor to contain spills. The floors are constructed of reinforced concrete treated to resist chemicals that are managed in this unit. This unit is surrounded by a six inch high reinforced concrete curb with 1.5 inch speed bumps located at interior doors and at the unloading platform. The floor area is sloped towards three reinforced concrete sumps. The contained areas and sumps for this unit have a capacity of about 50,000 gallons. Organic vapors from specific process areas in this unit are vented to a vapor recovery system.

Activities within WMU 10 include off-loading, weighing, sampling, labeling, and palletizing containers; container pump-out stations; a station for splitting of materials into smaller charges; consolidation of wastes into superpacks; filling bucket hoist hoppers and heating of waste in drums. Containers may be transferred from this unit to: (1) the incineration system; (2) any of the container storage areas; (3) direct drum feed unit in the Incinerator Feed Building; (4) Building B (External Truck Wash) for processing; (5) Building C (Lab Pack Building) for processing; (6) the extruder; (7) directly to the bucket hoist feed mechanism. Within WMU 10, containers of waste are moved by means of a conveyor system or fork lift. Containerized wastes generated on-site such as contaminated debris and PPE are also managed in this unit. There have been no documented releases from WMU 10. The potential for release to ground water, surface water, on-site soils, and air is low.

- K) WMU 11 – Building A Storage Area (Drum Warehouse of the Container Processing Building) – This unit constitutes the north side of the Container Processing Building (WMU 10). WMU 10 and WMU 11 are separated by a concrete fire wall and doors. The dimensions are 100 foot by 210 foot. Building A is designed to store containerized waste from on-site and off-site sources before incineration at WMU 1. Containers are placed on pallets and stored on racks or staged in accordance with Section D of the approved Part B permit application. The unit has the capacity to store approximately six thousand 55-gallon drums or the equivalent of any combination of different sized containers. The storage area has been designed to have separate concrete containment curbs for each set of racks and waste is segregated according to compatibilities. The entire combined containment area is surrounded on three sides by exterior concrete walls. The fourth side consists of a fire wall with three doors that have 1.5 inch high speed bumps. The floor is constructed of reinforced concrete treated to resist chemicals that are managed in this unit. The floor in each area is sloped toward

a reinforced concrete sump. The total containment capacity is 79,497 gallons (see Section D of the approved Part B permit application, Attachment D.14 for the calculation of the secondary containment). Forced air ventilation prevents the accumulation of vapors and fumes. Containers are inspected for integrity prior to storage and on a daily basis during facility inspections. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

- L) WMU 12- PT Tank Farm- This unit is an approximately 16 foot by 55 foot building which houses a tank farm used to store liquid wastes pumped from containers in the Container Processing Building (WMU 10) and from the Extruder Unit (WMU 13). It is located adjacent to, and southwest of, the Container Processing Building. Waste from the Organic Waste Tank Farm (WMU 2) can also be pumped to this unit. WMU 12 contains: three 2,500 gallon carbon steel tanks for liquid waste, PT-1, PT-2, and PT-3; one 7,000 gallon carbon steel tank, PT-4 which can receive waste from PT-1 through PT-3, from the Organic Waste Tank Farm, or from the pumpout tank (PT-6) associated with the Extruder; and one 300 gallon carbon steel overflow tank, PT-5. The area under the tanks is paved with reinforced concrete that has been treated to resist chemicals that are managed in this unit. The area is also surrounded by a 1.5 foot high reinforced concrete dike and enclosed by walls and roof. The paved area within the concrete dike is sloped toward a reinforced concrete sump. This unit has a containment capacity of 11,200 gallons. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- M) WMU 13- Extruder- This unit is located adjacent to, and southwest of, the Container Processing Building (WMU 10). It is enclosed and houses the facility's drum extruder, which is used to remove and blend the contents of drums that cannot be charged directly into the incineration system (WMU 1) or processed through the PT tank stations. The unit also includes a pump out tank, one 500 gallon above-ground carbon steel tank, PT-6, which blends the waste and then transfers it to PT-4 in the PT Tank Farm (WMU 12) or directly to the incinerator (WMU 1). The area is paved with reinforced concrete treated to resist chemicals that are managed in the unit and is surrounded by a six inch high curb. The paved area within the curb is sloped toward a concrete sump. The containment capacity of the curbed area and concrete sump is about 9,000 gallons. Organic vapors are vented to a vapor recovery system. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

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- N) WMU 14 - Container Receiving Area (unloading docks) - This unit consists of two covered truck unloading docks that abut the northeast side of the Container Processing Building (WMU 10). The unloading docks are paved with reinforced concrete treated to resist chemicals that are managed in this unit. A reinforced concrete containment wall and speed bump border the north and east edges of the unit along the two sides not bordered by the Container Processing Building (WMU 10). A reinforced concrete containment trench is located along the south side of each unloading station. The paved surface of each dock is sloped toward these trenches. This unit manages containerized wastes generated off-site. Tankers may also be staged in this unit in accordance with Section D of the approved Part B permit application and this permit. The wastes are subsequently unloaded to the Container Processing Building (WMU 10). There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- O) WMU 15 - Container Holding Building (Slag Canopy)- This unit is a 50 foot by 50 foot structure used to store containers of a wide range of waste types. Staging and processing activities are also conducted, in accordance with Section D of the approved Part B permit application and this permit. WMU 15 is located just north of the incineration system (WMU 1). The unit is fully enclosed and equipped with adequate health and safety equipment such as automatic fire detection and suppression, safety showers, and vapor recovery. The floor of this unit is constructed of reinforced concrete treated to resist chemicals managed in the unit. A combination of six inch high speed bumps and curbs surround the unit and are integral to the containment system and minimizing the accumulation of storm water. The floor is sloped towards a concrete sump, part of the 10, 520 gallon capacity containment system. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- P) WMU 16 - North Storage Area (formerly known as North Less Than 90 Day Area) - This unit is located west of Wastewater Treatment (WMU 6). On-site generated waste such as incineration treatment residuals (slag, ash), used brick and debris, spent activated carbon, and process water may be stored in this area. Off-site generated wastes that do not contain free liquids may be stored in containers within enclosed vehicles or within bulk containers. Specific processing activities may also be conducted. The Permittee must follow the requirements in Sections D and F of the approved Part B permit application in regards to storage and processing activities. The area is open, uncovered, and located over reinforced concrete in constructed containment areas. Curbing, sumps, and sloped berms control run-on and are part of the containment system. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

- Q) WMU 17- Bulk Solid Waste Storage Tanks- This unit consists of two reinforced concrete tanks located inside the Incinerator Feed Building. The units are open topped tanks separated by a center wall to prevent the co-mingling of waste. The total capacity of the two existing tanks is approximately 1,200 cubic yards. Bulk solid waste is unloaded from trucks or roll-offs into the tanks through doors located on the east side of the tanks. The waste is blended and transferred via an overhead crane from the tanks to the incineration system (SWMU 1) for treatment. Vapors released from the waste are collected by vapor recovery vents in the tank area and conveyed to the vapor recovery system. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- R) WMU 18 - Building C (Lab Pack Building)- Building C is located east of the Container Processing Building (WMU 10). The building is fully enclosed with exterior containment curbing. The base of the interior of the building is sloped to a sump located in the northwest corner. The containment capacity of this building is 11,200 gallons. Containers of waste stored in this building are placed on pallets (or equivalent) and /or in heavy duty storage racks to prevent contact with the building floor. This area has two-level racks with the ability to store an equivalent of 240 fifty five gallon drums or 13,200 gallons. The primary use for this unit is for auditing lab packs but other processing activities and the storage of lab packs are also permitted. The unit is connected to the vapor recovery system and is used during auditing lab packs or other waste processing activities when there is a potential for the release of vapors or fugitive emissions. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- S) WMU 19 - Satellite Accumulation Areas – Satellite Accumulation Areas (SAAs) are areas where hazardous waste is accumulated at or near the point of generation which is under the control of an operator of the process generating the waste. The containers located at the SAAs are typically 55-gallon drums. SAA containers are typically designated by a sign located nearby and a yellow outline painted on the floor to indicate the container location. Wastes managed in the SAAs include, but are not limited to, lab wastes, cleanup debris, personal protection equipment, absorbent pads, and/or waste liquids from compatibility testing, sampling, and flushing lines. SAA containers are kept closed at all times unless waste is being added to or removed from the container.

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SAA's are located in multiple areas throughout the facility. Most SAA's are located within other WMU's as listed and described in Attachment 4. WMU 19 includes those SAA's that are not contained within a specific WMU listed in Attachment 4. These include the SAA within the laboratory and the SAA within the Maintenance Building. There have been no documented releases from this unit and the potential for release to ground water, surface water, on-site soils, and air is low.

- T) WMU 20 and 21 - Incinerator Feed Building - In addition to containing the Bulk Solid Waste Storage Tanks (WMU 17) and the feed mechanisms to the Incinerator System (WMU 1), this unit also includes two direct feed units. These two direct feed units are the Direct Organic Tanker South and the Direct Drum Pump-out.

The Direct Organic Tanker South is located in a bay south of and adjacent to the Bulk Solid Waste Storage Tanks. The unit includes an unloading system to transfer liquid waste from tanker trucks directly to WMU1 by pressurizing the tanker truck with nitrogen thus displacing the contents. The feed rate is determined using the scale located in the Bay. The unit has an automated fire detection and suppression system. The Direct Organic Tanker South is equipped with vapor recovery and all doors are kept closed during off-loading to ensure a negative pressure thus controlling possible fugitive emissions and the release of odors during unloading activities. Direct Organic Tanker South is isolated from the rest of the incinerator feed building by walls to the north, south, and west, with a roll-up door located on the east side for tanker entry. The floor is curbed to contain 10,000 gallons and includes a small sump to contain minor spills or leaks. The bay is paved with reinforced concrete treated to resist chemicals that are managed in the unit. When not feeding waste to WMU 1, bulk waste containers may be staged in this bay in accordance with the approved Part B permit application. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

The Direct Drum Pump-out unit is located west of and adjacent to the Direct Organic Tanker South and is enclosed and isolated from the rest of the Incineration Feed Building. The unit has two stations for feeding containerized liquids to WMU 1 via lances. Waste feed rates are measured using a scale. The unit has an automated fire detection and suppression system capable of extinguishing Class 1A flammable liquids. The types of waste processed in this

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unit include odorous waste, water-reactive waste, Class 1A flammable liquids, and highly reactive waste streams. Direct Drum Pump-out is isolated from the rest of the Incinerator Feed Building by walls to the north, east, and west, with a roll-up door located on the south side for transfer of containers into the unit. The doors are kept closed during processing to control fugitive emissions and to maximize the efforts of the vapor recovery system in the form of snorkels over each station. The unit has secondary containment with a capacity of 1,125 gallons that includes a sump. The floor is paved with reinforced concrete treated to resist chemicals that are managed in the unit. Hoses and lines used to feed the waste are flushed between transfer of each waste stream using a compatible material. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

- U) WMU 22 - Decontamination Building - The Decontamination Building is a 14 foot by 12 foot completely enclosed structure attached to the eastern side of the External Truck Wash (WMU 5). A 6 inch deep metal catch basin collects the rinseate generated from decontamination activities and a grating is used to support equipment or containers being cleaned. Rinseate in the catch basin is drained to the sump located in the External Truck Wash after each decontamination activity has been completed. Decontamination activities may be conducted as described in Section D of the approved Part B permit application. Equipment can be cleaned in the Decontamination Building, and it may also be used for cleaning out containers that once held hazardous waste. The Permittee will not decontaminate containers that previously held odorous or low odor threshold waste in the Decontamination Building. To prevent accumulation of vapors, the Decontamination Building is equipped with a roof vent. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.
- V) WMU 23 - East Storage Area (formerly known as East Less Than 90 Day Area) - The East Storage Area is located south of the North Storage Area (WMU 16). On-site generated waste such as incineration treatment residuals (slag, ash), used brick and debris, spent activated carbon, and process water may be stored in this area. Off-site generated wastes that do not contain free liquids may be stored in containers within enclosed vehicles or within bulk containers. Specific processing activities may also be conducted. The Permittee must follow the requirements as described in Sections D and F of the approved Part B permit application in regards to storage and processing activities. The area is open, uncovered, and located over reinforced concrete in constructed containment areas. Curbing, sumps, and sloped berms control run-on and are part of the containment system. There have been no documented releases from this unit. The potential for release to ground water, surface water, on-site soils, and air is low.

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Heritage - WTI, Inc.  
Class 2 Modification received 03/21/2011  
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### **Area Of Concern (AOC) - Former Charter Oil Facility Release Area**

The property where the Permittee is located was formerly occupied by Charter Oil. The Charter Oil facility included approximately 7.2 acres of property which consisted of a building, the barge off-loading pier which extended into the Ohio River and a petrochemical terminal. The petrochemical terminal, approximately two acres, consisted of ten large-capacity, above ground, storage tanks surrounded by an earthen dike; a metal transfer pipeline ten inches in diameter; and a tanker truck terminal. The transfer pipeline connected the storage tanks to a barge terminal in the Ohio River, and also to a truck load-out area north of the storage tank area. The petrochemical terminal and tanks have since been removed.

Additional information regarding Charter Oil can be found in Section E of this permit.

A spill history at the Charter Oil facility included large releases of hazardous materials. In the Spring of 1983, approximately 19,000 gallons of xylene released into the environment when a crack developed in the side of a storage tank located within the storage tank farm. In April of 1985, a site investigation report was prepared by Weston-Sper, a consultant for U.S. EPA. The report identified a suspected release into the environment of 33,000 gallons mineral spirits from the Charter Oil facility in early 1984. This release allegedly occurred through a storage tank leak. An alleged third release of an unidentified material of approximately 200,000 gallons into the environment was reported to have occurred at the Charter Oil facility in June of 1984. A federal investigation was conducted in response to an alleged theft of solvents from Charter Oil facility. Such investigations revealed that the pipelines leading from the storage tanks to the truck loading area were severely corroded, thus indicating the possibility of numerous releases. This alleged release was never confirmed.

Area of Concern (AOC) - Former charter Oil Facility Release Area

As a result of past documented releases at the facility FROM THE CHARTER OIL COMPANY, ground water and soil contamination exists at the facility. According to March 1990 analytical data, the facility has ground water contamination of benzene, toluene, ethylbenzene, xylene, acetone, trimethylbenzenes, trichloroethene, and total petroleum hydrocarbons WAS PRESENT IN THE AREA UNDERLYING THE VRA FACILITY. ON-GOING GROUNDWATER MONITORING IN ACCORDANCE WITH THE VRA PERMIT, IN THE AREA DELINEATING THE CONTAMINANT PLUME, HAS DETERMINED GROUNDWATER CONTAMINATION FROM THE AREA OF CONCERN STILL EXISTS. THE HISTORIC CONTAMINATION LINKED TO THE AOC IS BEING ADDRESSED THROUGH CONDITION E OF THE PERMIT RENEWAL. Remedial actions related to contamination at the Former Charter Oil Facility Release Area are ongoing pursuant to Interim Orders with Ohio EPA.

**ATTACHMENT 5 - RCRA CORRECTIVE ACTION PLAN**

**ATTACHMENT 6 - RESERVED**

Refer to most recent version and/or updates to the Integrated Ground Water Monitoring Plan (IGWMP), which is a separate document.

*Historic ref*  
jnyers\2004 December\FINAL Permit.wpd  
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**Ohio EPA DMWM**

**AUG 10 2011**

**Attachment 7** - Modification to Process Compressed Gas  
and Gas Mixtures at the East Liverpool, WTI  
Facility

Heritage-WTI, Inc.  
Ohio Hazardous Waste Facility Installation and Operation Permit

Class 3B Permit Modification, PITS# OHD 980613541-020625-3B-1  
Approved August 23, 2005

Class 1A Permit Modification, PITS# OHD 980613541-100316-1A-1  
Approved March 29, 2010

Terms and Conditions

**Attachment 7**  
**Heritage – WTI, Inc.**  
**Ohio Hazardous Waste Facility Installation and Operation Permit**

**Additional Terms and Conditions**  
**Class 3B Permit Modification to process compressed gas**

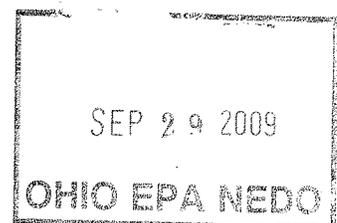
- A. Approved compressed gas/gas mixtures, may only be fed to the incineration system via an approved direct organic tanker unloading station, such as East Bay in the Organic Tanker Unloading unit (bay #1) or South Bay in the Incinerator Feed Building. When appropriate, all modifications to waste management units or processing equipment used to manage compressed gaseous waste will be made following NFPA Standards for handling compressed gas/gas mixtures. For these modifications, the Permittee will submit a certification from the East Liverpool Fire Department, or another approved, authorized agency. The certification, submitted ten days prior to utilization of the modified unit, equipment, and/or SOP, will be used by Ohio EPA to ensure the correct standards were applied and/or implemented.
- B. The Permittee will require the generator of the approved specific gas/gas mixtures to properly characterize the waste stream prior to approval for receipt at the facility. This may be in the form of analytical data or material safety data sheets (MSDS).
- C. The Permittee is not authorized for storage of compressed gas/gas mixtures at the facility. The Permittee will schedule shipments of the waste such that only one tanker of compressed gas/gas mixture will be on-site at any time unless exceptional situations arise and the Ohio EPA is notified
- D. Gaseous waste treated in the incinerator must be included in the Permittee's total feed treatment limits.
- E. The Permittee is permitted to accept and treat specific non-hazardous, non-flammable, and non-reactive compressed gas waste streams. The approved compressed gas list is found in Section C, Waste Characteristics and Waste Analysis Plan (WAP) of their Part B permit application.
- F. If the Permittee desires to add additional compressed gas/gas mixture(s) to their permit, actions described in Section C, Waste Characteristics and Waste Analysis Plan (WAP) of their Part B permit application should be followed. The procedure includes criteria to be used to evaluate a new gas/gas mixture and a decision tree for proper modification classification determination.

**Attachment 8** - Utilization of Off-Site Generated Non-Hazardous  
Waste Water for Facility Process Water

Heritage-WTI, Inc.  
Installation and Operation Hazardous Waste Permit

Class 2 Permit Modification, PITS # 041209-2-1  
Approved June 22, 2005

Terms and Conditions



**Attachment 8**  
**Von Roll America, Inc., a/k/a WTI**  
**Ohio Hazardous Waste Facility Installation and Operation Permit**

***Additional Terms and Conditions***

**Class 2 Permit Modification for  
Utilization of Non-hazardous Wastewater for Process Water**

1. The Permittee shall conduct a six month demonstration period to evaluate use of off-site generated non-hazardous wastewater in designated units and processes at the facility. Stack testing will be conducted during the demonstration period to determine the effect of non-hazardous wastewater use on mercury, particulate and dioxin/furan emissions. The Permittee shall notify the Ohio EPA at least 15 days prior to the beginning of the demonstration period.
2. At the completion of the demonstration period and if the Permittee decides to proceed with the use of non-hazardous wastewater as process water at the facility, the Permittee shall install a tank cover for the Process Water Holding Tank (W-5) and vent the tank to the existing vapor recovery system.
3. All SOPs associated with this modification should be submitted for Ohio EPA review and comment prior to beginning the demonstration period.
4. Within forty-five (45) days after completion of the demonstration period, the Permittee shall submit to the Ohio EPA a written report which includes all results of the demonstration period. The report shall include an introduction/demonstration period description, the purpose of the demonstration period, the elements of the demonstration period (this includes the parameters of interest, monitoring frequency, analytical frequency, stack testing), results and conclusions. The Permittee must retain on-site the original data collected during the demonstration period for a period of three years and make available for Ohio EPA review, upon request.
5. During the demonstration period, the Permittee will monitor and record parameters of interest in the non-hazardous wastewater received from off-site. Analysis for these parameters should be conducted on all pre-acceptance samples of non-hazardous wastewater received from off-site, on samples drawn from W-5 prior to transfer to W-4 or the existing General Wastewater Treatment System, and in accordance with all SOPs associated with this modification. This information shall be included in the report to be submitted.

The parameters to be monitored and recorded include, at a minimum, (1) total organic carbon (TOC), (2) volatile organic carbon (VOC), (3) total suspended solids (TSS), (4) brominated compounds, (5) iodine, and (6) mercury.

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6. During the demonstration period, the Permittee will monitor and record the volume and proportion of non-hazardous wastewater, on-site generated wastewater (e.g., water pumped from sumps), and municipal water accumulated in W-4 and W-5 and used throughout the facility as process water. The Permittee shall monitor and record any process water from W-4 that may be sent off-site and the reason for the transfer. The Permittee shall include this information in the written report required by Condition 4 above, as well as how much municipal water is used, where it is used, and why.
7. During the demonstration period, the Permittee will record the TOC in the slag quench tank daily and evaluate whether the use of non-hazardous wastewater has any effect on the TOC in the slag quench tank water. This information shall be included in the report to be submitted.
8. During the demonstration period, the Permittee shall increase the sampling frequency of the treatment residue (ash) to daily. At the end of the demonstration period, the Permittee shall include in the report to be submitted, data demonstrating a limit is not necessary, or if data indicates a limit for TOC in the non-hazardous wastewater is necessary, the Permittee will submit the value and data to support it. If a limit is required, the Permittee shall submit a permit modification to include a TOC limit to applicable sections of the approved Part B permit application within forty-five (45) days after the report has been submitted.
9. The Permittee shall conduct a stack test approximately sixty (60) days after the initiation of the demonstration period. A test plan shall be submitted for approval to the Ohio EPA at least 45 days prior to the stack testing event.
  - a) At a minimum the stack test plan will include testing for dioxins/furans, mercury, and particulate matter. The stack test will be used to demonstrate that non-hazardous wastewater (containing organics) will not impact the collection of dioxins/furans from the flue gas by the enhanced carbon injection system, and to determine the effect, if any, of mercury in the non-hazardous wastewater on stack emissions.
  - b) Stack testing will be conducted in order to (1) ensure the proposed VOC limit for non-hazardous wastewater used as process/make-up water is adequate, (2) set limits for TOC if necessary, (3) determine a pre-set limit for the stack total hydrocarbon continuous emission monitor for switching from utilization of non-hazardous wastewater to municipal water, and (4) determine if limits are necessary for TSS.
  - c) Results of the stack testing shall be submitted to the Ohio EPA within 90 days of completion of the testing.

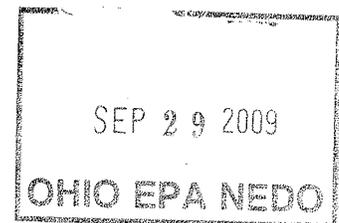
- d) If at the completion of the stack testing, or at the first indication that utilization of non-hazardous wastewater is producing unanticipated and unacceptable conditions at the facility, e.g. emissions in excess of regulatory requirements, the Permittee will immediately suspend the demonstration period and the utilization of non-hazardous wastewater. The Permittee will immediately inform the Ohio EPA of the suspension and all information available regarding the suspension and compile a report of the situation to be submitted within 15 days. Upon review of the report/data, Ohio EPA may determine the Permittee can continue utilizing the non-hazardous wastewater and complete the demonstration period. Any changes that may be necessary, shall be submitted to the Ohio EPA in the form of a permit modification within 45 days to incorporate the new information.
10. The Permittee shall submit a permit modification to Ohio EPA to revise all affected permit application pages within 45 days of submitting the written report required by Condition 4 above.

**Attachment 9** - Add Storage Operations to the Permitted Activities in the Truck Holding and Sampling Unit and Increase Facility Storage Capacity, Not More Than 25% of the Already Permitted Capacity

Heritage-WTI, Inc.  
Installation and Operation Hazardous Waste Permit

Class 2 Permit Modification, PITS# 070129-2-1  
Approved May 29, 2007

Terms and Conditions – The terms and conditions associated with modification PITS # 070129-2-1 were met and fulfilled and consequently vacated in permit modification received 08/10/09



Conditions described below have been fulfilled. Attachment 9 was vacated in permit modification, PITS # 090810-1-1, received 08/10/09.

## **Attachment 9 - Vacated**

**Class 2 Permit Modification, PITS # 070129 -2-1  
Approved May 29, 2007**

### **Convert Existing Structure for Storage And Increase Storage Capacity Not More Than 25%**

#### **Terms and Conditions**

1. Prior to storage of waste in the Truck Holding and Sampling Building, VRA will update their irrevocable standby letter of credit (number S574689) to accommodate any changes in the cost estimate for Section I, Closure Plan, of the Part B permit application and update Attachment I.12, Financial Assurance in Section I.
2. Prior to storage of waste in the Truck Holding and Sampling Building, VRA will submit all standard operating procedures for activities associated with this modification to the Ohio EPA for review and evaluation.

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**Attachment 10** - Temporary Management and Operating  
Conditions during 2009 Outage to Replace the Kiln

Heritage-WTI, Inc.  
Installation and Operation Hazardous Waste Permit

Class 1 Permit Modification

Vacate Attachment 10

PITS # 100311-1-1

Acknowledged April 8, 2010

APR 8 2010