**TNRCC ID#**_____ **Inspection Date**_____ ***

**RCRA SUBPART BB CHECKLIST**
**AIR EMISSIONS STANDARDS FOR EQUIPMENT LEAKS**

**Section A–Exclusions and Exemptions**

A YES answer to any question in this section means that the equipment is not subjected to subpart BB requirements. (Note: General exemptions found in 265.1 apply)

1. Is equipment in vacuum service and identified as such in the operating record? N/A___YES___NO

   [1050(d)]

2. Does equipment contain or contact HW with an organic concentration ≥10% by weight for less than 300 hours per calendar year and is identified as such in the operating record?[1050(e)] N/A___YES___NO

**Section B - - Applicability**

A Yes answer indicates that the facility has equipment subjected to subpart BB.

1. Does the equipment come in contact or contain HW with an organic concentration ≥10% by weight and is managed in one of the following:[1050(b)]
   (A). A unit that is subjected to one of the permitting standards? N/A___YES___NO

   (B). A unit that is not exempt from permitting under 40 CFR 262.34(a) (including recycling units) and is located at a facility otherwise subjected to permitting requirements? N/A___YES___NO
   (C). A unit that is exempt from permitting under 40 CFR 262.34(a) and is not a recycling unit under 40 CFR 261.6? N/A___YES___NO

**Section C– Standards, Pumps in Light Liquid Service** **N/A**

Light liquid service: For a hazardous waste to be in light liquid service, the vapor pressure of one or more of the organic constituents in the material must greater than 0.3 Kilopascals at 20 C° and the total concentration of pure organic constituents having a vapor pressure greater than 0.3 Kilopascals at 20 C° is equal to or greater than 20
percent by weight.

1. Is the pump equipped with a closed vent system routed to a control device(meeting the standards of 1060)?[1052(f)] YES___NO
   If Yes, the rest of this section is not applicable. N/A
   If No, complete the rest of this section.

2. Are the pumps designated for no detectable emissions?[1052(e)] YES___NO
   If Yes, skip to question 4.

   If No, answer question 3.

3. Is the pump equipped with a dual mechanical seal system

that includes a barrier fluid system?[1052(d)] YES___NO

If Yes, then(check which applies)
(A) Is the mechanical seal system operated with the barrier fluid
at a pressure always greater than the pump stuffing box pressure, YES
OR

Equipped with a barrier fluid degassing reservoir that is connected
by a closed vent system to a control device meeting §265.1060 requirements, YES___
OR
Equipped with a system that purges the barrier fluid into a hazardous waste stream
with no detectable emissions to the atmosphere. YES

(B) Is the barrier fluid hazardous waste with organic concentration ≥10% by weight? NO
YES

(C) Is each barrier fluid system equipped with a sensor that will detect failure of the
seal system, the fluid system or both?[1052(d)3] YES___NO

If Yes, Is each sensor checked daily or equipped with an audible alarm?[1052(d)5] N/A___YES
_NO
If equipped with an audible alarm is it checked monthly?[1052(d)5] N/A___YES
_NO

(D) Is each pump visually checked each calendar week for leaks?[1052(d)4] YES
_NO
(E) Has the O/O established the criterion that indicates the failure of the seal
system, barrier system or both?[1052(d)5(ii)] N/A___YES
_NO
If Yes, is the criteria based on design and operating experience?[1052(d)5(ii)]N/A___YES___NO

(F) If a leak is detected is the first attempt to repair within 5 calendar days of detection? N/A___YES
_NO
(G) Was the repair made within 15 days of discovery unless technically infeasible
without a hazardous waste management unit shutdown? [1052(d)6(ii)] N/A___YES
_NO
(H) If the repair was delayed was it completed by the end of the next
management unit shutdown?[1059a] N/A___YES___NO

(I) If the repair required the use of a dual mechanical seal system that includes a
barrier fluid system was the repair completed no later than 6 months
from detection?[1059(d)] N/A___YES___NO

4. For pumps designated as no detectable emissions was the pump monitored by
instrument to be <500 ppm above background? N/A___YES
_NO
(A) Does the pump have an externally actuated shaft penetrating the pump housing? N/A___NO

(B) Was method 21 used in determining no detectable emissions?[1052(e)2] N/A___YES _NO

(C) Is the pump(s) monitored annually after the initial designation?[1052(e)3] N/A___YES _NO

**Section D --- Standards, Compressors** **N/A___**

1. Is the compressor equipped with a closed vent system routed to a control device?[1053h] N/A___YES___NO
   If Yes, rest of this section in not applicable.
   If No, complete the rest of this section.

2. Has the compressor been designated for no detectable emissions?[1053(i)] YES___NO
   If yes, complete rest of question 2 and skip the rest of this section.
   If No, go to question 3.

   (A) For compressors designated as no detectable emissions was it monitored by instrument to be <500 ppm above background?[1053(i)] N/A___YES _NO

   (B) Was method 21 used in determining no detectable emissions?[1053(i)1] N/A___YES _NO

   (C) Is the compressor monitored annually after the initial designation?[1053(i)2] N/A___YES _NO

3. Is each compressor equipped with a seal system including a barrier fluid system that prevents leakage of emissions to the atmosphere?[1053(a)] N/A___

4. Is each seal system equipped with at least one of the following:
   Operated with the barrier fluid at a pressure > the compressor stuffing box pressure;[1053(b)1] YES___NO
   OR
   Equipped with a barrier fluid system that is connected by a closed vent system routed to a control device(meeting the standards of 1060); YES___NO
   OR
   Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions;[1053(b)3] YES___NO
   If No to all three explain in comments.

5. Is the barrier fluid a hazardous waste with an organic concentration ≥10%?[1053(c)] N/A___NO _YES

6. Is each barrier fluid system equipped with a sensor that will detect a failure of the seal system, barrier fluid system or both?[1053(d)] N/A___YES _NO

(A) Is each sensor checked daily or equipped with a audible alarm that is checked monthly; N/A___YES___NO

OR

Is the compressor located within the boundary of an unmanned plant site in which the sensor is checked daily. [1053(e)1] N/A___YES___NO

7. Has the O/O established the criterion that indicates the failure of the seal system, the barrier fluid system or both? N/A___YES___NO

If Yes, is the criteria based on design and operating experience?[1053(e)2] N/A___YES___NO

8. If a leak is detected is the first attempt to repair within 5 calendar days of detection? N/A___YES___NO

9. Was the repair made within 15 days of discovery unless technically infeasible without a hazardous waste management unit shutdown? [1053(g)1]

10. If the repair was delayed was it completed by the end of the next management unit shutdown?[1059a] N/A___YES___NO

**Section E - - Standards: Pressure relief devices in gas/vapor service N/A**

1. Is the pressure relief device equipped with a closed vent routed to a control device? YES___NO

If Yes, the rest of this section is not applicable. [1054(c)] N/A
If No, complete the rest of this section.

2. Are pressure relief devices operated with no detectable emissions except during pressure releases?[1054(a)] N/A___YES___NO

If Yes, was method 21 used(indicating <500 ppm above background)? N/A___YES _NO

3. After a pressure relief event was the device returned to no detectable emission status as indicated by instrument reading within 5 calendar days unless technically infeasible without a hazardous waste management unit shutdown?[1054(b)1] N/A___YES _NO

**Section F - - Standards: Sampling connection systems. N/A___**

1. Is the sampling system *in-situ* or without purges?[1055(c)] N/A___YES___NO

If Yes, then the rest of this section is not applicable.
If No, complete the rest of this section.

2. Is each sampling connection system equipped with a closed-purge,

closed-loop, or closed-vent system?[1055(a)] N/A___YES__NO

3. Does the system identified in question 1 return the sample purge to the process or route to an appropriate treatment system?[1055(a)] N/A___YES__NO

4. Does each closed-purge, closed-loop or closed vent system:
Return the purge process fluid directly to the process line; YES___NO
OR
Collect and recycle the purged process fluid; YES___NO
OR
Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with subpart CC? YES___NO

If No to all three explain in comments.

**Section G - - Standards: Open-ended valves or lines** **N/A**

1. Each open-ended valve or line equipped with a cap, blind flange, plug or a second valve?[1056(a)] N/A___YES___NO

2. Does each cap, blind flange, plug or a second valve seal the open end at all times except when operations require hazardous waste flow?[1056(a)2] N/A___YES__NO

3. For those equipped with a second valve is the valve on the hazardous waste stream end always closed first before the second valve is closed?[1056(b)] N/A___YES___NO

4. If a double block and bleed system is used is the line sealed with a cap, blind flange, plug or a second valve at all times except when operations require venting the line between the block valves?[1056(c)] N/A___YES___NO

**Section H - -Standards Valves in gas/vapor service or light liquid service** **N/A**

1. Has O/O elected to comply with the alternate standard which allows no greater than 2% of the valves to leak? YES___NO

If Yes, this section is N/A. Go to Section H. **N/A**
If No, continue.

2. Is each valve monitored monthly or quarterly by method 21 to detect leaks unless designated no detectable emissions, unsafe to monitor, difficult to monitor or alternate standard?[1057(a)] N/A___YES___NO

**If No, Answer Section J.**

If designated no detectable emissions go to question #7
If designated as unsafe to monitor go to question #8.
If designated as difficult to monitor go to question #9.

3. If monitored quarterly(first month of each quarter) was leak detection negative (<10,000 ppm) for the 2 proceeding months prior to going to quarterly monitoring?[1057(c)1] N/A___YES _NO

4. If a leak was detected(>10,000 ppm) during quarterly monitoring was monitoring returned to a monthly frequency until 2 successive months of no detection was achieved?[1057(c)2] N/A___YES___NO

5. If a leak is detected is the first attempt to repair within 5 calendar days of detection?[1057(d)2] N/A___YES___NO

6. Was the repair made within 15 days of discovery unless technically infeasible without a hazardous waste management unit shutdown? [1057(d)1] N/A___YES _NO

7. If delayed was the repair completed by the end of the next management unit shutdown?[1059a] N/A___YES___NO

8. For valves designated as no detectable emissions was it monitored by instrument to be <500 ppm above background?[1057(f)] N/A___YES _NO

(A) Was method 21 used in determining no detectable emissions?[1057(f)2] N/A___YES _NO

(B) Are the valves monitored annually after the initial designation?[1057(f)3] N/A___YES _NO

(C) Is the valve absent of an external actuating mechanism in contact with the hazardous waste?[1057(f)1] N/A___YES___NO

9. If any valves have been determined to be unsafe to monitor has a written plan been developed for monitoring during safe to monitor times?[1057(g)2] N/A___YES _NO

10. If any valves have been designated as difficult to monitor has the O/O met the following:[1057(h)]
(A) Determined that the valve cannot be monitored without elevation of personnel more than 2 meters above a support surface? N/A___YES___NO

(B) The unit within which the valve is located was in operation before June 21, 1990? N/A___YES

__NO

(C) Developed a written plan that requires monitoring of the valve at least once per calendar year? N/A___YES___NO

**Section I - - Alternate Standards for Valves in Gas/Vapor Service or in Light Liquid Service**

1. Are no greater than 2% of the valves in **A** hazardous waste management unit(HWMU) allowed to leak?[1061(a)] N/A___YES___NO

2. Has the O/O notified the Regional Administrator that they have elected to comply with the alternate standard?[1061(b)1] N/A___YES___NO

3. Has the O/O completed a performance test?[1061(b)2] N/A___YES___NO

4. If a performance test was completed, were all valves subjected to regulation monitored by method 21 within one week?[1061(c)1] N/A___YES___NO

5. Were any readings ≥10,000 ppm, indicating a leak, noted? YES___NO

6. Was the percentage of leaking valves determined by dividing the number of valves subject to the requirements that are leaking by the total number of valves subject to the requirements in the HWMU? [1061(c)3] N/A___YES___NO

(Note: If the O/O decides to no longer comply with the alternate standards the O/O must re-notify)

**Section J- - Skip period Leak Detection and Repair for Valves in Gas/Vapor Service or in Light liquid Service.**

If the answer to question 2 in Section G is yes then this section is not applicable. N/A

1. Has the O/O elected to comply with one of the following alternative work practices:
   (A). Skip one of the quarterly leak detection periods?[1062(b)2]
   (i.e., monitor for leaks once every six months) YES___NO
   If Yes, skip question 3.
   OR
   (B). Skip three of the quarterly leak detection periods?[1062(b)3]
   (i.e., monitor for leaks once every year) YES___NO
   If Yes, skip question 2.

2. Were 2 consecutive quarterly leak detection periods with ≤2% of valves leaking conducted? N/A___YES___NO

3. Were 5 consecutive quarterly leak detection periods with ≤2% of valves leaking conducted? N/A___YES___NO

**4.** During any leak detection period did the number of leaking valves exceed 2%? YES___NO

If Yes, did the O/O return to monthly monitoring?[1062(b)4] N/A___YES___NO

5. Did the O/O notify the Regional Administrator before implementing the alternate work practice?[1062(a)2] N/A___YES___NO

**Section K- -Standards: Pumps and valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, Flanges and other connectors** . **N/A**

1. Are any connectors inaccessible, ceramic or ceramic-lined, porcelain, glass or glass-lined? YES NO
   If Yes, the rest of this section is not applicable.[1058(e)]
   If No, continue.

2. If evidence of a leak is found by visual, audible, olfactory, or any other detection method was the equipment, as described in the title of this section, monitored within 5 days by method 21?[1058(a)] N/A___YES _NO

3. If a leak is detected by a reading of ≥10,000 ppm by the instrument was the repair made within 15 calendar days of detection unless technically infeasible without a hazardous waste management unit shutdown?[1058(c)1] N/A___YES___NO

4. Was the first attempt at repair made within 5 calendar days of leak detection?[1058(c)2] N/A___YES _NO

**Section L - -Standards: Delay of Repair** **N/A**

1. If a repair for which a leak was detected was delayed because it was technically infeasible without a hazardous waste management unit shutdown, was the repair completed before the end of the next unit shutdown?[1059(a)] N/A___YES _NO

2. For a detected leak from a valve was the repair delayed?[1059(c)] N/A___YES___NO
   If Yes,
   (A) Did the O/O determine that emissions of purged material result in from immediate repair are greater than the emissions likely to result from delay of repairs?[1059(c)1]N/A___YES _NO
   (B) When the delayed repair was initiated was purged material collected and destroyed or recovered in a control device meeting §265.1060 standards? [1059(c)2] N/A___YES _NO
   (C) Was the repair delayed beyond the hazardous waste management unit shut down? N/A___YES _NO
   If Yes,
   (1) Was the next unit shutdown scheduled sooner than 6 months

after the first shutdown?[1059(e)] YES _NO

(2) Was valve assembly replacement necessary in order to effect the repair? YES _NO

If Yes,
Were valve assembly supplies depleted during the shutdown? NO___YES

If Yes,
Were valve assembly supplies sufficiently stocked prior to the depletion? YES _NO

3. For a detected leak from a pump was the repair delayed?[1059(d)] N/A___YES___NO
If Yes,
(A) Did the repair require the use of a dual mechanical seal system that includes a barrier fluid system?[1059(d)1] N/A___YES _NO

(B) Was repair completed as soon as practicable, but not later than 6 months after the leak was detected?[1059(d)2] N/A___YES___NO

**Section M - - CLOSED VENT SYSTEMS and Control Devices**

If closed vent systems are not being used then this section is not applicable. **N/A____**

1. Does the closed vent system route gases, vapors and/or fumes to a control device?[1088(b)1] N/A___YES___NO

2. If the system is equipped with bypasses that may route vapors to the atmosphere, is the bypass equipped with either a flow indicator, seal or locking device? ( excluded from this question are low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring loaded pressure relief valves and other safety fittings)[1088(b)3] N/A___YES___NO

(a). If a flow indicator is used, is it installed at the inlet of the bypass at a point upstream of the control device inlet? N/A___YES___NO

(b). If a seal or locking device is used is it placed on the mechanism by which the bypass position is controlled? N/A___YES___NO

(c). If a seal or locking device is used, is it inspected at least once a month to verify the mechanism is maintained in the closed position. N/A___YES___NO

3. Is the closed vent system designed to operate with no detectable emissions as determined by Method 21? (<500ppmv above background) [1033(j)1] YES___NO

OR

Is the system designed to operate below atmospheric pressure? YES___NO

If operated with no detectable emissions indicate questions 9-11as N/A and continue.
If operated below atmospheric pressure indicate questions 4-8 as N/A and go to question #9

4. Was an initial leak detection of the closed vent system and connections conducted on or before the system was first subjected to regulation using Method 21? [1060(a)]ref[1033k] N/A___YES___NO

5. Are joints, seams or other connections that are permanently or semi-permanently sealed visually inspected annually(after initial monitoring) for defects that could result in emissions?[1033(k)1(ii)A] N/A___YES___NO

6. Are other components/connections of the closed vent system not listed in #5 monitored annually by Method 21, unless designated as unsafe to monitor? N/A___YES___NO

7. If repairs were conducted on the system, components replaced or connections unsealed, was the system reinspected under Method 21 to demonstrate that the system operates with no detectable emissions?[1033k(1)ii(A)]

8. If any components are designated as unsafe to monitor, are the components identified and an explanation as to why it is unsafe to monitor and a plan for monitoring the component as frequently as practicable during safe-to-monitor times?[1033(n)] N/A___YES___NO
N/A___YES___NO

9. If the system is designed to operate below atmospheric pressure is it equipped with a pressure measurement device that is readily accessible?[1033(j)] N/A___YES___NO

10. If operating below atmospheric pressure is negative pressure maintained in the system while the control device is in operation?[1033(j)2] N/A___YES___NO

11. If operating below atmospheric pressure was the closed vent system visually inspected by the O/O, initially and annually thereafter, to check for defects that could result in emissions?[1033(k)2(i)] N/A___YES___NO

12. Were first attempts to repair defects found during inspections or monitoring made within 5 calendar days of detection and completed within 15 calendar days after detection unless a process unit shut down is warranted or emissions caused by immediate repair would be greater than fugitive emissions released from the defect?[1033(k)3] N/A___YES___NO

13. If a delay in repairing a defect is warranted, was the repair conducted at the next process unit shut down after the defect was detected?[1033(k)3(iii)] N/A___YES___NO

14. Does the O/O maintain inspection and monitoring records?[1033(k)1(iv)&2(iv)] N/A___YES___NO

**Section N- - Control Devices, Equipment Standards**

If control devices are not used this section is not applicable. N/A

Check which one of the following control devices are being utilized:

1. Enclosed Combustion Device[1060(a)]ref[1033(c)] YES___NO
(ie. vapor incinerator, boiler or process heater)
(a). Is 95% by weight reduction in organic emission achieved by either:[1033(c)]
    1. Total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 % oxygen, YES___NO___

OR

    2. Providing a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C. YES___NO___

(b). If a boiler or process heater is used as the control device, is the vent stream introduced into the flame combustion zone? N/A___YES___NO

2. Flare [1060(a)]ref[1033(d)] YES___NO
[A flare use to comply with this section shall be steam-assisted, air-assisted or non-assisted]

(a). Is the flare designed and operated with no visible emissions as determined by Method 22 in 40 CFR part 60, except for period not to exceed a total of 5 minutes during any consecutive 2 hour period? [1033(d)] YES___NO
(b). Is the flare operated with a flame present at all times as determined by a heat sensing monitoring device equipped with a continuous recorder?[1033(f)2(iii)] YES___NO
(c). Does the recorder indicate the continuous ignition of the pilot flame? YES___NO
(d). Is the equipment referenced in question (b) installed, calibrated, maintained and operated according to the manufacturer's specifications? [1033(f)2] N/A___YES___NO
(e). Is the flare steam or air assisted? YES___NO
If Yes, then
    1. Is the net heating value, of the vent stream, routed to the flare ≥11.2 MJ/scm (300 Btu/scf)? N/A___YES___NO
(f). Is the flare nonassisted? YES___NO
If Yes, then
    1. Is the net heating value, of the vent stream, routed to the flare ≥7.45 MJ/scm (200Btu/scf)? N/A___YES___NO
(g.) Is the net heating value of the vent stream determined by the equation contained in 40 CFR 265.1033(e)(2)? YES___NO
(h). Is the steam assisted and/or nonassisted flares, referenced in (e) and (f) above, designed and operated with an exit velocity of less than 18.3 m/s (60 ft/s)? N/A___YES___NO
If Yes, then
    1. Is the exit velocity determined by Method 2, 2A,2C, or 2D found in 40 CFR part 60? N/A___YES___NO
(i). Does the facility have steam assisted or nonassisted flares being operated with exit velocity ≥18.3 m/s but < 122 m/s? YES___NO
If Yes, then

1. Is the heating value of the vent stream > 37.3 MJ/scm (1000 Btu/scf)? N/A___YES___NO

(j). If the measured exit velocity (Method 2, 2A, 2C, or 2D) is < $V_{max}$ (calculated by method in [1033(e)4]) and < 122 m/s: [1033(d)4(iii)]

1. For steam assisted flares is the heat value of the vent stream ≥300 Btu? N/A___YES___NO
2. For nonassisted flares is the heat value of the vent stream ≥200 Btu? N/A___YES___NO

(k). Is the air assisted flare design and operated so that the measured exit velocity is < $V_{max}$ ? ($V_{max}$ is calculated by method listed in [1033(e)5] N/A___YES___NO

3. For a thermal vapor incinerator:[1060(a)]ref[1033(f)2(i)]

(a). Is a temperature monitoring device equipped with a continuous recorder installed in the combustion chamber downstream of the combustion zone? N/A___YES___NO

(b). Is the accuracy of the temperature monitoring device ± 1% °C or ± 0.5 °C (which ever is greater)? N/A___YES___NO

(c). Is the equipment referenced in question (a) installed, calibrated, maintained and operated according to the manufacturer's specifications?[1033(f)2] N/A___YES___NO

4. For a catalytic vapor incinerator:[1060(a)]ref[1033(f)2(ii)]

(a). Is a temperature monitoring device equipped with a continuous recorder capable of monitoring temperature at two locations installed? N/A___YES___NO

(b). Is one temperature sensor installed in the vent stream at the nearest feasible point to the catalyst bed inlet? N/A___YES___NO

(c). Is the other temperature sensor installed in the vent stream at the nearest feasible point to the catalyst bed outlet? N/A___YES___NO

(d). Is the accuracy of the temperature monitoring device ± 1% °C or ± 0.5 °C (which ever is greater)? N/A___YES___NO

(e). Is the equipment referenced in question (a-c) installed, calibrated, maintained and operated according to the manufacturer's specifications?[1033(f)2(ii)] N/A___YES___NO

5. For a boiler or process heater having a design heat input capacity <44 MW:

(a). Is a temperature monitoring device equipped with a continuous recorder installed at a location in the furnace downstream of the combustion zone? N/A___YES___NO

(b). Is the accuracy of the temperature monitoring device ± 1% °C or ± 0.5 °C (which ever is greater)? N/A___YES___NO

(c). Is the equipment referenced in question (a) installed, calibrated, maintained and operated according to the manufacturer's specifications?[1033(f)2(iv)] N/A___YES___NO

6. For a boiler or process heater having a design heat input capacity ≥44MW:

(a). Is the control device equipped with a monitoring device, equipped with a continuous recorder, to measure a parameter(s) that indicates good combustion operating practices are being used? N/A___YES___NO

(b). Is the equipment referenced in question (a) installed, calibrated, maintained and operated according to the manufacturer's specifications?[1033(f)2(v)] N/A___YES___NO

7. Is the vapor recovery (e.g. condenser or adsorber) equipped with either:

(a). A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent

stream from the condenser, [1033(f)2(vi)A] N/A___YES___NO

OR

(b). A temperature monitoring device with the following:[1033(f)2(vi)B]

1. Equipped with a continuous recorder,
2. Accuracy of ± 1% °C or ± 0.5 °C (which ever is greater),
3. Installed at a location in the exhaust vent stream from the condenser exit. N/A___YES___NO

[If (a) and (b) are both no explain in comments]

(c). Is the equipment referenced in question (a&b) installed, calibrated, maintained and operated according to the manufacturer's specifications?[1033(f)1] N/A___YES___NO

(d). Is the unit designed and operated to recover vapors vented to it with an efficiency of ≥95% by weight unless the total organic emission limits of §265.1032(a)(1) for all affected process vents can be attained at an efficiency < 95% by weight?

8. Carbon Adsorber-Regenerative[1088(c)3(i)]ref[1033(g)] YES___NO

If Yes,

(A). Is the carbon replaced at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of 1035(b)4(iii)F? YES___NO

(B). Is carbon removed from the control device, that is HW, managed in one or more of the following procedures:[1033(m)]

1. Regenerated or reactivated in a thermal treatment unit that is either permitted or equipped with air emission controls in accordance with subparts AA or CC or 40 CFR part 61 or 63, YES___NO
2. Incinerated in a hazardous waste incinerator that is either permitted or has interim status, YES___NO
3. Burned in a boiler or industrial furnace which is either permitted or has interim status. YES___NO

(C). Is the system equipped with either:[1033(f)2(vii)]

1. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed, YES___NO

OR

2. A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle. YES___NO

(D). Is the equipment referenced in question (C) installed, calibrated, maintained and operated according to the manufacturer's specifications?[1033(f)2(vii)] N/A___YES___NO

(E). Are records maintained for the management of the carbon removed from the system? [1090(e)1(vii)] N/A___YES___NO

(F). Was a design analysis completed to demonstrate performance? YES___NO

If yes, did the analysis:

1. Consider vent stream composition, constituent concentration, flow rate, relative humidity, and temperature? N/A___YES___NO
2. Establish the design exhaust vent stream organic compound concentration level? N/A___YES___NO
3. Establish the number and capacity of carbon beds? N/A___YES___NO

4. Establish the type and working capacity of the activated carbon used? N/A___YES___NO
5. Establish the design total steam flow over the period of each complete carbon bed regeneration cycle? N/A___YES___NO
6. Establish the duration of the carbon bed steaming and cooling/drying cycles?N/A__YES NO
7. Establish the design carbon bed temperature after regeneration? N/A___YES___NO
8. Establish the design regeneration time? N/A___YES___NO
9. Establish the carbon service life? N/A___YES___NO

9. Carbon Adsorber-Non-Regenerative YES___NO

If Yes,

(a). Is the control device designed and operated to remove at least 95% by weight total organic content?[1088(c)1(i)] YES___NO

(b). Is the performance standard in question (1.a) based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal?[1088(c)5(v)] YES___NO

(c). Is the carbon replaced by:

1. Monitoring the concentration level of the organic compounds in the exhaust vent on a regular schedule and replacing the carbon immediately when breakthrough is indicated, YES___NO

OR

2. Replace with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval. YES___NO

(If #1 & #2 are both no explain in comments)

(d). If the exhaust vent is being monitored for breakthrough, is the monitoring frequency either daily or no greater than 20 % of the time required to consume the total carbon working capacity? [1033(h)1] N/A___YES___NO

(f). Was a design analysis completed to demonstrate performance? YES___NO

If yes, did the analysis:[1035(b)4(iii)G]

1. Consider vent stream composition, constituent concentration, flow rate, relative humidity, and temperature? N/A___YES___NO
2. Establish the design outlet organic concentration level? N/A___YES___NO
3. Establish the capacity of carbon beds? N/A___YES___NO
4. Establish the type and working capacity of the activated carbon used? N/A___YES___NO
5. Establish the design carbon replacement interval based on the total carbon working capacity and source operating schedule? N/A___YES___NO

(g). Is the system equipped with either:[1060(a)]ref[1033(f)2(vii)]

1. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed, YES___NO

OR

2. A monitoring device equipped with a continuous recorder

to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle. YES___NO

(h). Is the equipment referenced in question (g) installed, calibrated, maintained and operated according to the manufacturer's specifications? [1060(a)]ref[1033(f)2] N/A___YES___NO

10.

(c). Is a description and location diagram of the monitoring device recorded and kept up to date in the operating record?[1090(e)1(iv)] N/A___YES___NO

(d). Have operating parameters been identified and documented?[1090(e)1(iv)] N/A___YES___NO

11.

(d). Is a description and location diagram of the monitoring device recorded and kept up to date in the operating record?[1090(e)1(iv)] N/A___YES___NO

(e). Have operating parameters been identified and documented?[1090(e)1(iv)] N/A___YES___NO

(f). If a design analysis was completed to demonstrate performance did it include the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature?[1035(b)4(iii)E] N/A___YES___NO

(g). Did the design analysis establish the design outlet organic compound concentration level, design average temperature of the exhaust vent stream, and design average temperatures of the coolant fluid at the condenser inlet and outlet?[1035(b)4(iii)E] N/A___YES___NO

12. Other YES___NO

(Control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system)

(a). Does the facility maintain documentation that describes the control device operation and identifies the process parameter(s) that indicate proper operation and maintenance?[1088(c)4]ref[1033(i)] YES___NO

(b). If the control device is other than an e nclosed combustion device or a flare is it designed and operated to reduce the total organic content by at least 95% by weight?[1088(c)1] YES___NO

**Section O- - Control Devices, General Standards**

1. Did periods of planned routine maintenance of the control device which caused the control device not to meet the standards exceed 240 hours per year?[1088(c)2(i)] N/A___NO___YES

2. Are gases, vapors and/or fumes vented to the control device during periods of planned maintenance or during periods of control device system malfunction except when it is necessary to prevent unsafe conditions?[1088(c)2(vi)] N/A___NO___YES

3. Are control device system malfunctions corrected as soon as practicable after their occurrence?[1088(c)2(v)] N/A___YES___NO

4. Is the closed vent system not actively vented to the control device during

periods of planned maintenance or system malfunction except to avoid an unsafe condition or implementation of corrective action? [1088(c)2vi] N/A___YES___NO

5. Except for the following control devices did the O/O demonstrate, using either a performance test or a design analysis, the performance of each control device?[1088(c)5(i)] N/A___YES___NO
   A. Flare
   B. Boiler or process heater with a design heat input capacity ≥ 44 megawatts,
   C. Boiler or process heater with the vent stream introduced with the primary fuel,
   D. Permitted or interim status BIF and operates in accordance with 40 CFR part 266,

6. If a performance test was utilized in question #5, did it follow:
   (a). Method 2 in 40 CFR part 60 for velocity and volumetric flow rate?[1034(c)1(i)] N/A___YES___NO
   (b). Method 18 in 40 CFR part 60 for organic content?[1034(c)1(ii)] N/A___YES___NO
   (c). 3 separate runs at least 1 hour long under the conditions when the HW management unit is operating at its highest capacity level? N/A___YES___NO
   (d). Averaging the results of all runs for the purpose of determining total organic compound concentration and mass flow rates, and computing the average on a time weighted basis? N/A___YES___NO
   (e). The equation in §265.1034(c)1(iv) for the calculation of the mass flow rate? N/A___YES___NO
   (f). The equation in §265.1034(c)1(v) for the calculation of the annual total organic emission rate? N/A___YES___NO
   (g). Calculate the total organic emissions from all affected vents by summing the hourly total organic mass flow rate and by summing the annual total organic emission rate? N/A___YES___NO
   (h). Excluding periods of startup, shutdown, and malfunction from the test? N/A___YES___NO

7. If a performance test was performed did the O/O provide the following:
   (a). Sampling ports adequate for the test methods? N/A___YES___NO
   (b). Safe sampling platform(s)? N/A___YES___NO
   (c). Safe access to the platform(s)? N/A___YES___NO
   (d). Utilities for sampling and testing equipment? N/A___YES___NO

8.

9. Has the facility incorporated the scheduling of inspections for the air emission control equipment required under subpart CC in their written inspection plan? YES___NO

10. Are the readings from the monitoring device(s) inspected each operating day to ensure proper operation of the control device(s)? YES___NO

11. If corrective measures are warranted to correct any deficiencies found during the inspections are they implemented immediately? N/A___YES___NO

**Section P - - Test Methods and Procedures**

1. Is leak detection monitoring conducted in accordance with Method 21 of 40 CFR part 60?N/A___YES___NO

2. Does the detection instrument meet the performance criteria of Method 21?[1063(b)2]N/A___YES___NO

3. Is the instrument calibrated before use on each day of its use in accordance with Method 21?[1063(b)3] N/A___YES___NO

4. Are calibration gases used zero air(<10 ppm hydrocarbon) and either a mixture of methane or n-hexane and air at a concentration approximately but <10,000 ppm? N/A___YES___NO

5. When conducting leak detection monitoring is the instrument probe traversed around all potential leak interfaces as close as possible?[1063(b)5] N/A___YES___NO

6. If equipment is tested for compliance with no detectable emissions are the following steps followed:
   (A). Is monitoring conducted in accordance with Method 21 of 40 CFR part 60? N/A___YES___NO
   (B). Does the detection instrument meet the performance criteria of Method 21?[1063(c)1] N/A___YES___NO
   (C). Is the instrument calibrated before use on each day of its use in accordance with Method 21?[1063(c)1] N/A___YES___NO
   (D). Are calibration gases used zero air(<10 ppm hydrocarbon) and either a mixture of methane or n-hexane and air at a concentration approximately but <10,000 ppm?N/A___YES___NO
   (E). When conducting leak detection monitoring is the instrument probe traversed around all potential leak interfaces as close as possible?[1063(c)3] N/A___YES___NO
   (F). Background level determined as set forth in Method 21? N/A___YES___NO
   (G). The arithmetic difference between the maximum concentration detected and the background level is compared with 500 ppm for determining compliance?[1063(c)4]N/A___YES___NO

7. In determining if the waste contained ≥10% by weight check what was used:
   Sampling_____

   Knowledge_____

   (A). If Sampling was used, did the facility use one of the following methods:[1063(d)1]N/A___YES___NO
   ASTM methods D2267-88___, E169-87___, E168-88___, E260-85___

   SW-846 methods 9060___, 8260___

   (B). If sampling was used, were the samples representative of the highest total organic content expected to be contained in or contact the equipment?[1063(g)] N/A___YES___NO
   (C). If knowledge was used, is it documented?[1063(d)3] N/A___YES___NO

8. If revisions were made to the waste determination was it done by sampling?[1063(e)]N/A___YES___NO

9. To determine if pumps or valves are in light liquid service did the O/O obtain vapor pressures of constituents from standard reference texts_____ or by ASTM D-2879-86_____?(Check the method used)[1063(h)] N/A___YES___NO

10. Were performance tests used to determine if a control device achieves 95% by weight reduction in organic emissions? N/A___YES___NO

If Yes, continue:

(A). Did the test use Method 2 in 40 CFR part 60 for velocity and volumetric flow rate?N/A___YES___NO
(B). Did the test use method 18 in 40 CFR part 60 for organic content?[1034(c)1] N/A___YES___NO
(C). Did the test consist of 3 separate runs?[1034(c)1] N/A___YES___NO
(Note: less than 3 runs can be accepted upon approval see 1034(c)4)
(D). Was each run conducted for at least 1 hour under conditions of highest load or capacity level?[1034(c)1] N/A___YES___NO
(E). For the purpose of determining total organic compound concentration and mass flow rates was the average of all runs utilized?[1034(c)1] N/A___YES___NO
(F). Was the average computed on a time weighted basis?[1034(c)1] N/A___YES___NO
(G). Was the hourly total organic mass flow rates determined by the equation found in 40 CFR 265.1034(c)1(iv)? N/A___YES___NO

(H). Was the annual total organic emission rate determined by the equation found in 40 CFR 265.1034(c)1(v)? N/A___YES___NO
(I). Was the total organic emissions from all affected process vents determined by summing the hourly total organic mass emission rates and by summing the annual total organic mass emission rates?[1034(c)1(vi)] N/A___YES___NO
(J). Did the O/O record process information as may be necessary to determine the conditions of the performance test?(Note: operations during periods of startup, shutdown, and malfunction are not representative)[1034(c)2] N/A___YES___NO
(K). Are sampling ports, safe sampling platforms and safe access to the platforms available for use?[1034(c)3] N/A___YES___NO

**Section Q - - Record Keeping**

(Note: If more than one hazardous waste management unit is subjected to these requirements one record keeping system may be utilized, however each record must be identified by each management unit.)

1. Are the following records maintained for the service life of the device:
(a). Air emission control equipment design ? YES___NO

2. Is the following information recorded and kept in the operating record:[1064(b)1and (g)]
(A). Equipment identification number and HWMU identification? N/A___YES___NO
(B). The approximate location of the equipment(maybe on a map)? N/A___YES___NO
(C). Type of equipment(e.g., pump, valve)? N/A___YES___NO
(D). Percent by weight total organics in the hazardous waste stream at the equipment?N/A___YES___NO
(E). Hazardous waste state(e.g., gas/vapor, or liquid)? N/A___YES___NO
(F). Method of compliance with the standard(e.g., monthly leak detection)? N/A___YES___NO
(G). A list of equipment identification numbers designated for no detectable emissions?
(Note: No detectable emissions is indicated by an instrument reading of <500ppm above background) N/A___YES___NO
(H). Signature sign off on the no detectable emissions designation by the O/O?[1064g]N/A___YES___NO
(I). For equipment designated with no detectable emissions is the following information retained:[1064(g)4]
1. Dates of compliance testing(initially and annually)? N/A___YES___NO
2. Background measurement? N/A___YES___NO

3. Maximum instrument reading measured during each compliance test? N/A___YES___NO

(J). A list of equipment that contains or contacts HW with an organic concentration of at least 10% by weight for less than 300 hours per calendar year?[1064(g)6] N/A___YES___NO

3. If performance test was used to demonstrate the efficiency of the control device is a performance test plan maintained along with all test results? [1064(b)3]ref[1035(b)3] N/A___YES___NO

If Yes, does the plan include:

1. A description of the determination of how the test will be conducted when the waste management unit is operating at the highest capacity level? N/A___YES___NO
2. A description of the estimated or design flow rate and organic content of each vent stream? N/A___YES___NO
3. Acceptable operating ranges of key process and control device parameters during the test program? N/A___YES___NO
4. A detailed engineering description of the closed-vent system and control device? N/A___YES___NO
5. Type of control device?
6. Manufacturer's name and model number?
7. Dimensions, capacity, and construction material of the control device?
8. A detailed description of sampling and monitoring procedures N/A___YES___NO

Including:

A. Sampling locations and frequency? YES___NO
B. Monitoring locations and frequency? YES___NO
C. Equipment to be used? YES___NO
D. Analytical procedures for sample analysis? YES___NO

4. If a design analysis was used to demonstrate compliance for the closed vent system is the following documentation maintained: [1064(b)4]ref[1035(b)4]

1. A list of all information references and sources used. N/A___YES___NO
2. Records of compliance testing including dates (no detectable emissions or negative pressure). N/A___YES___NO
3. If engineering calculations are used in the design analysis of a control device are the specifications, drawings, schematics, piping, and instrumentation diagrams along with design documentation provided by the manufacturer or vendor maintained? N/A___YES___NO
4. A certification by the O/O that the operating parameters used in the design analysis represent the conditions that exist when the unit is operating at the highest capacity level? [1035(b)4(iv)]
5. A certification by the O/O that the control device is designed to operate at ≥ 95% efficiency unless the total organic concentration limit or total organic emission limit of §265.1032(a) is achieved at an efficiency<95 weight percent? (Note: The control device used to obtain emission limits must involve vapor recovery) N/A___YES___NO

OR

A certification by the control device manufacture or vendor that the device meets the design specifications. N/A___YES___NO

5. If performance tests are used to demonstrate compliance, are all test results maintained? [1064(b)4]ref [1035(b)4(vi)] N/A___YES___NO

6. When each leak is detected for which repairs are warranted is the following achieved:
   (A). Equipment marked (weatherproof and readily visible)with the identification number, date of potential leak discovered, and the date the leak was detected, N/A___YES___NO
   (B). The identification on the equipment(except valve) may be removed upon the successful completion of the repair, N/A___YES___NO
   (C). The identification on a valve may be removed after it has been monitored for 2 successive months with no leaks detected. N/A___YES___NO

7. If a leak was detected for which repairs are warranted is the following information maintained in the inspection log?[1064(d)] N/A___YES___NO
   (A). The equipment, instrument and operator identification numbers? N/A___YES___NO
   (B). If a potential leak is detected by visual, audible or olfactory is the date noted? N/A___YES___NO
   (C). The date of leak detection and date(s) of repair attempts? N/A___YES___NO
   (D). Repair methods applied in each attempt? N/A___YES___NO
   (E). If the maximum reading by instrument for Method 21 is 10,000 is "above 10,000" noted in the log for readings $\geq$10,000? N/A___YES___NO
   (F). If a leak is not repaired within 15 days after discovery is "repair delayed" noted in the log and reason for the repair delay? N/A___YES___NO
   (G). Is documentation supporting the repair delay noted in the log? N/A___YES___NO
   (H). Signature of the person making the decision that the repair could not be effected without a HWMU shutdown? N/A___YES___NO
   (I). The expected date of repair if the leak is not repaired within 15 days of discovery?N/A___YES___NO
   (J). The date of successful repair of the leak? N/A___YES___NO
   (K). Are records maintained for three(3) years?[1064(l)} N/A___YES___NO

8. Is design documentation and monitoring, operating, and inspection information for each closed vent system and control device recorded in the operating record and kept up-to-date?[1064(e)]ref[1035(c)] N/A___YES___NO
   Does the information include:

   (A). Is a description and date of any modification made to the closed vent system and control device maintained? [1035(c)1] N/A___YES___NO

   (B). Have operating parameters, description of monitoring device, and diagram of monitoring sensor location (or locations) been identified for the closed vent system and control device and recorded in the operating record? [1035(c)2] N/A___YES___NO

   (C). Monitoring, operating and inspection information? N/A___YES___NO
   (D). Date, time and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis including as specified:
      1. When a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C combustion temperature is below 760 °C? N/A___YES___NO

2. When a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of ≥95% the combustion zone temperature is more than 28°C below the design average combustion zone temperature? N/A___YES___NO
3. For a catalytic vapor incinerator the period when temperature of the vent stream at the catalyst bed inlet is more than 28°C below the average temperature of the established inlet vent stream? N/A___YES___NO
4. For a catalytic vapor incinerator when the temperature difference across the catalyst bed is less than 80% of the design average temperature difference? N/A___YES___NO
5. Period when the flame zone temperature is more than 28°C below the established design average flame zone temperature for a boiler or process heater? (1035(c)4(iv)A)
   (note: average flame zone is established per [1035(b)4(iii)C]) N/A___YES___NO
6. Position changes where the vent stream is introduced to the combustion zone from the established location for a boiler or process heater? [1035(c)4(iv)B] (note: location established per [1035(b)4(iii)C]) N/A___YES___NO
7. Period when the pilot flame is not ignited for a flare?[1035(c)4(v)] N/A___YES___NO
8. For a condenser monitored by a device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream, period when the organic compound concentration level or readings of organic compounds in the exhaust vent are > 20% the established design outlet organic compound concentration level?[1035(c)4(vi)]
   (Note: design outlet organic comp. conc. level est. per [1035(b) 4(iii)E]) N/A___YES___NO
9. For a condenser equipped with a temperature monitoring device and continuous recorder capable of monitoring temperature with an accuracy of ±1% or ±5°C of the temperature which ever is greater, periods when the temperature of the exhaust vent stream from the condenser is more than 6 °C above the design average exhaust vent stream temperature.
   (Note: Exhaust vent stream temperature established per 1035(b)4(iii)E) N/A___YES___NO
10. For a condenser equipped with a temperature monitoring device and continuous recorder capable of monitoring temperature with an accuracy of ±1% or ±5°C of the temperature which ever is greater, periods when the coolant fluid exiting the condenser is more than 6°C above the design average coolant fluid temperature at the condenser outlet. [Note: condenser outlet temperature established per 1035(b)4(iii)E] N/A___YES___NO
11. For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device and is equipped with a monitoring device with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream are more than 20% greater than the design. [note: design established per 1035(b)4(iii)F] N/A___YES___NO
12. For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device and is equipped with a monitoring device with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular predetermined time cycle, period when the vent stream continues to flow through the control device beyond the predetermined regeneration time. [Note; regeneration time established per

1035(b)4(iii)F] N/A___YES___NO

(E). Explanation for each period identified in D1-12 above of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation. [1035(c)5] N/A___YES___NO

(F). For carbon adsorption systems date when existing carbon is replace with fresh carbon. [1035(c)6] N/A___YES___NO

(G). For a carbon adsorption system that is not regenerated on-site(such as a canister) is a log containing the following maintained: date and time when control device is monitored for carbon breakthrough and the monitoring device reading; date when existing carbon is replaced? [1035(c)7] N/A___YES___NO

(H). Date of each control device startup and shutdown?[1035(c)8] N/A___YES___NO

(I). Any components designated as unsafe to monitor their identification number and explanation as to why it is unsafe to monitor and the plan for monitoring? [1035(c)9] N/A___YES___NO

(J). When a leak is detected the date of detection, the date of first attempt at repair, the date of successful repair, the instrument identification number used, the equipment identification number, maximum instrument reading measured by method 21 after it is successfully repaired or determined to be nonrepairable and operator identification(name, initials or ID number)?[1035(c)10] N/A___YES___NO

(K). If the repair is delayed(not completed in 15 days) the reason for the delay. (Note: the O/O may have a written procedures that identifies the conditions that justify a delay of repair. In such cases, reasons for delay may be documented by citing the relevant sections of the procedure.)[1035(c)10(v)] N/A___YES___NO

(L). If the delay of repair was due to depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion?[1035(c)10(v)B] N/A___YES___NO

(M). Are records under question 8 maintained for three(3) years?[1064(l)] N/A___YES___NO

9. For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system is monitoring and inspection information indicating proper operation and maintenance of the control device recorded in the operating record?[1064(f) N/A___YES___NO

10. For valves designated as unsafe or difficult to monitor is the following information recorded:
(A). Identification numbers? N/A___YES___NO
(B). Explanation why each valve is unsafe or difficult to monitor? N/A___YES___NO
(C). A monitoring plan for each valve? N/A___YES___NO

11. For valves in gas/vapor service or in light liquid service operating under alternative standards(skip period leak detection and repair) is the following recorded:
(A). A schedule for monitoring? N/A___YES___NO
(B). The percent of valves found leaking during each monitoring period? N/A___YES___NO

12. For Pumps in light liquid service and compressors is the criterion, developed by the O/O, recorded which will indicate the failure of the seal system, the barrier fluid system or both( including changes)?[1064(j)] N/A___YES___NO