ATTACHMENT N

AA SYDCOL, LLC
EQUIPMENT LEAKS
[40 CFR 270.14(a), 270.15(d)]

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1.0 APPLICABILITY

This section describes a program for controlling leaks from Facility equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight (OHW). This includes any pumps, valves, open-ended valves, and flanges associated with the transfer and consolidation of OHW within containers at the Facility.

2.0 FACILITY PERSONNEL AND EQUIPMENT

The Compliance Manager will be responsible for managing the equipment leak monitoring and repair program described in this Section. Hazardous Waste Technician II's will be responsible for performing the monitoring and repairs. The Facility Manager and all Supervisors and Hazardous Waste Technicians will receive training on RCRA air emissions standards. Supervisors and Hazardous Waste Technician II's will receive training for maintaining and repairing equipment subject to leak monitoring requirements described in this Attachment. The Training Manager will be responsible for ensuring that all personnel receive the proper training to perform equipment leak detection and repair obligations identified in this Attachment.

Sydcol may use third-party contractors to perform certain aspects of the equipment monitoring and leak repair program. All third-party contractors performing equipment monitoring or leak repairs will be required to demonstrate training in RCRA leak detection and repair.

Facility equipment is used consolidate hazardous waste materials from multiple containers into another container or transportation tank. These consolidation activities are conducted in batches overseen by Facility personnel. No continuous un-attended processing or automated processing of hazardous waste materials is conducted at the Facility. Facility equipment that is subject to the leak prevention program described herein may include pumps; control valves; open-ended valves, piping, and tubing; flanges and connectors. Equipment will not include any valves that are unsafe-to-monitor or difficult-to-monitor. All such Facility equipment shall be labelled "OHW" in easily identifiable red letters, and only equipment with the OHW label will be used in handling OHW.

Facility equipment that is in contact with OHW for less than 300 hours in a calendar year is exempt from equipment leak standards identified in this section. A log of equipment used to process OHW will be maintained to identify any process equipment with greater than 300 hours of use and is subject to OHW equipment leak monitoring. A copy of the equipment log is provided in Appendix A.

3.0 EQUIPMENT INSPECTIONS AND LEAK MONITORING

3.1 Pumps in Light Liquid Service

Some hazardous waste streams accepted at the Facility contains light liquids, defined as 20 percent or more of components with vapor pressures greater than 2.25 mm Hg at 68° F. When light liquids are processed at the Facility, the pump, valves, piping, flanges, connectors, and relief devices used will be visually inspected each calendar week in which batching operations occur for liquids dripping from the seals in the process line. Any pumps in light liquid service will be included in the list of equipment provided in Table 1. The results of visual inspections will be recorded in the equipment use log provided in Appendix A.

Each seal in pumps used for light liquids, including pumps used to transfer to or from tanks on transportation vehicles, will be monitored at least monthly for vapor leaks using a photoionization detector (PID) unless designated for no detectable emissions as described in this section. Monitoring will follow EPA Method 21 requirements for daily calibration, adjusting for the appropriate range and response, and using a response factor for the specific compounds being monitored. For an initial screen to determine if there are detectable emissions above 500 parts per million (PPM), Sydcol will use a RKI GX 6000 PID instrument (serial number 8Y3020239) with sensor calibration capability in the range of 0-6,000 ppm with a ±0.1 ppm resolution for the range 0-600 ppm and ±1.0 ppm resolution above 600 ppm. For monitoring equipment with leak indications above 600 ppm, a RAE MiniRAE 3000+ PID with a range of 1,000 to 15,000 ppm, with a resolution of ±1.0 ppm. PID instruments will each be kept in an individual case box and stored in the Facility laboratory. A copy of Method 21 is provided in Appendix E. Dual-sealed equipment that is operated with a barrier fluid system compliant with 40 CFR 264.1054(d) is exempt from monthly leak monitoring.

A leak is detected when liquids are observed to be dripping from a seal or when vapor monitoring indicates readings of 10,000 parts per million (ppm) above background levels. Monitoring for vapor leaks will be conducted at least once per month when processing of light liquids is conducted.

Any pump in light liquid service may be designated for no detectable emissions if the PID instrument reading is less than 500 ppm above background as determined using EPA Method 21. Pumps designated as having no detectable emissions is exempt from monthly monitoring for leaks requirements. Pumps designated as having no detectable emissions will be tested for compliance with this section initially upon designation, annually, and at other times as requested by ADEQ.

3.2 Open-Ended Valves or Lines

All open-ended valves in light liquid service to consolidate waste in containers or transfer light liquids to or from tanks on transportation vehicles will be included in the list of equipment provided in Table 1. Each open-ended valve or line handling OHW shall be equipped with a cap, blind flange, plug, or a second valve. The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed. Similarly the open-ended valve must be closed when opening any second valve handling OHW.

When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall be equipped with a cap, blind flange, plug, or second valve at all other times.

3.3 Valves in Light Liquid Service

Equipment used to transfer light liquids between containers or between containers and tanks on transportation vehicles may include second valves in addition to an open-ended valve. Any second valves will be recorded on the list of equipment provided in Table 1. Each valve in light liquid service shall be monitored monthly to detect leaks by EPA Method 21. A copy of Method 21 is provided in Appendix E. An instrument reading of 10,000 ppm or greater indicates detection of a leak.

Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for two successive months.

Valves designated as having no detectable emissions is exempt from the monthly monitoring requirements of this section if the valve:

- Has no external actuating mechanism in contact with the hazardous waste stream.
- Is operated with emissions less than 500 ppm above background as determined by EPA Method 21.
- Is tested for compliance with this section initially upon designation, annually, and at other times as requested by ADEQ.

3.4 Pumps and Valves in Heavy Liquid Service, Flanges, and Other Connectors.

Pumps and valves in heavy liquid service and flanges and other connectors shall be monitored within 5 days by EPA Method 21 if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. The evidence of a potential leak and any comments or notes will be documented on the Equipment Use Log provided in Appendix A. This applies to all pumps and connectors that handle OHW liquids but are not in light liquid service. A copy of Method 21 is provided in Appendix E. An instrument reading of 10,000 ppm or greater indicates detection of a leak.

3.5 Inspection and Monitoring Methodology

The Facility Manager, Supervisors, or Hazardous Waste Technicians having been trained in the equipment monitoring and leak repair program will conduct inspections and use PID instruments to perform monitoring for leaks of equipment handling OHW. When inspecting equipment handling OHW, Sydcol will visually inspect the exterior components of the equipment for evidence of any defect that could result in a leak. Defects of interest include visible cracks, holes, gaps, or other open spaces when the equipment is operating. Visible vapor or liquid leakage may indicate a leak is present. Any visible evidence of defects shall be noted in the equipment use log and immediately reported to a Supervisor or the Facility Manager.

Instrument monitoring for equipment leaks will be performed while the equipment is handling a light liquid. If the equipment does not handle a light liquid during a given monitoring month, the equipment should be monitored while handling an OHW.

When monitoring equipment for a leak, the instrument will first be calibrated the same day as the monitoring consistent with manufacturer's instructions for instrument calibration. The instrument will be checked during each day of use for calibration drift consistent with instrument operating manual instructions. Sydcol will maintain record of instrument calibration and drift using the log sheet provided in Appendix B.

Following calibration, determine the background concentration using the procedures described in EPA Method 21. With the calibrated instrument running, traverse the instrument probe tip around all potential leak interfaces as close to the interface as possible. All potential leak interfaces should be monitored by the instrument probe.

If the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level is less than 500 ppm, the equipment can be considered to have no detectable emissions and the result indicated on the Equipment Use Log. If the difference

between the maximum organic concentration indicated on the instrument and the background level is equal to or greater than 500 ppm, the leak will be noted on the Equipment Use Log and the arithmetic difference noted in the comments section. The monitoring results indicating a leak will be immediately reported to a Supervisor or the Facility Manager.

4.0 LEAK REPAIR

When a leak is detected in any equipment contacting OHW, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the following best practices where practicable:

- Tightening of bonnet bolts.
- Replacement of bonnet bolts.
- Tightening of packing gland nuts.
- Injection of lubricant into lubricated packing.

Any equipment that cannot be repaired in compliance with leak standards will be replaced. Sydcol will only place valves in light liquid service in operation if they are safe to monitor and do not require elevation of monitoring personnel more than 2 meters above a permanent support surface.

5.0 DELAY IN LEAK REPAIRS

Delay of repair of equipment for which leaks have been detected will be allowed beyond 15 days if the equipment is isolated from the hazardous waste management unit and that does not continue to contain or contact OHW pending repair. The delay in repair will be documented in the Equipment Leak Repair Log provided in Appendix C.

6.0 DOCUMENTATION

Should a leak on OHW process equipment be detected, it will be reported as an issue on the Equipment Use Log maintained in the Facility office. An inspection report will be completed that includes the following information:

- Date leak was found;
- Type of equipment and inventory number;
- Description of the leak;
- Processing activity and HWMU;
- Waste stream and Facility container numbers involved;
- Results of monitoring; and

- Any immediate action taken.

All attempts to repair the equipment will be reported and documented. These reports will include descriptions of the repairs made. The final repair will be recorded on the Equipment Repair Log provided in Appendix C.

7.0 QUALITY ASSURANCE AND QUALITY CONTROL

Hazardous Waste Technicians performing inspections and monitoring will review and sign data collected on a daily basis. Supervisors will review inspection and monitoring records for completeness on a monthly basis. The Compliance Manager will quarterly review the daily monitoring reports generated in conjunction with recordkeeping and reporting requirements and verify the number of components monitored per technician and the time between monitoring events to identify any abnormal data patterns. The Compliance Officer will note a quarterly review of records and sign and date the Equipment Use Logs on the line immediately beneath the last entry on the log reviewed in the quarterly review.

The Compliance Officer will annually review all records pertaining to equipment monitoring and leak repair to ensure that all required records, logs, and databases are being maintained and are up to date. The annual review will include an inventory of Facility equipment to ensure and document that equipment subject to monitoring and leak repair requirements is properly identified and being monitored. Any equipment identified will be inspected to verify that is physically tagged with the equipment identification number.

During the annual review the Compliance Officer will observe the calibration and monitoring of instruments used for equipment monitoring. The instrument review will verify that the entire equipment interface is checked and the probe is held at the interface, not away from the interface. Any areas of noncompliance that are discovered will be reviewed with the Facility Manager. The Facility Manager will prepare and initiate a corrective action plan to resolve and document those issues. The corrective action plan will require implementation, as soon as practicable, of steps necessary to correct causes of noncompliance, and prevent, to the extent practicable, a recurrence of the cause of the noncompliance.

The Annual Review will be documented on an Annual Review form provided in Appendix D.

Sydcol will retain a 3rd Party consultant to independently review the equipment monitoring and repair program at least once every four years and prepare an audit report describing compliance with 40 CFR 264 Subpart BB equipment monitoring requirements. Sydcol will retain the audit reports and maintain a written record of the corrective actions taken in response to any deficiencies identified.

TABLE

Table 1
Equipment Handling Organic Hazardous Waste

Item	Item Number	Location	Portable (Y/N)	Gas or Liquid	Equipment Type	percent organics	Method of Compliance (visual/sound/smell/other)	Evidence of Leaks

Notes:
Applies to all equipment handling hazardous wastes with greater than 10% organic hydrocarbons.

Any equipment with evidence of leaks shall be monitored within 5 days and recorded on the equipment leak/repair log. Valves shall be inspected and recorded using the valve inspection/monitoring log.

APPENDICES

APPENDIX A

ORGANIC LIQUID EQUIPMENT USE LOG

AA Sydcol, LLC

Organic Liquid Equipment Use Log

Item/Item Number	Equipment Type:					Date	Start Time	Stop Time	Total time	Monitoring/ Inspection performed (Y/N)	Monitoring/ Inspection method	Leak Detected (Y/N)	Comments
	Pump	Control valve	Open-ended valve	Piping/tubing	Flange/Connector								

APPENDIX B

INSTRUMENT CALIBRATION LOG

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Instrument Calibration Log

Equipment Identification	Equipment Type	Calibration Result - First Point	Calibration Result - Second Point	Notes	Technician Name	Technician Signature

APPENDIX C

EQUIPMENT LEAK REPAIR LOG

AA Sydcol, LLC
Equipment Leak Repair Log

Equipment ID	Leak Detection Date	Attempted Repair Date	Repair Method	Monitoring Results (ppm)	Instrument ID	Operator Name	Operator Initials	Comments

Notes:
1. Monitor reading after repair attempt must be < 10,000 ppm for the leak to be considered repaired.
2. First attempt to repair shall be made within 5 calendar days after leak detection, repaired within 15 calendar days of leak detection.
3. For repairs not completed within 15 calendar days of leak detection, complete a delay of repair log.

APPENDIX D

ANNUAL REVIEW DOCUMENTATION

AA Sydcol Facility
Annual Review Documentation

Review Item	Compliant (Y/N)	Comments
Accuracy of Equipment List		
Equipment Use Log		
Quarterly Monitoring Reviews		
Leak Monitoring		
Instrument Calibration and Calibration Drift Records		
Equpment Repair Program		
First Attempt Repair Records		
Delay in Repair Records		
Implementation of QA/QC Program		
Identification of persons implementing leak detection and repair program		
Tracking program for new valves and pumps		

Leak Detection and Repair Program Assessment:	Number	Frequency	
Number of pumps and valves identified			
Number of leaks detected			% of total pumps and valves
Number of first repair attempts beyond 5 days			% of total leaks.
Number of delayed repairs			% of total leaks.
Number of repairs beyond 30 days			% of total leaks.
Identification of chronic leaking equipment that is unrepaired			% of total pumps and valves

Annual Review Date: _____

Compliance Officer Name: _____

Compliance Officer Signature: _____

APPENDIX E

EPA METHOD 21: DETERMINATION OF VOLATILE ORGANIC COMPOUND LEAKS

While we have taken steps to ensure the accuracy of this Internet version of the document, it is not the official version. Please refer to the official version in the FR publication, which appears on the Government Printing Office's eCFR website:
(http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title40/40cfr60_main_02.tpl)

Method 21 - Determination of Volatile Organic Compound Leaks

1.0 Scope and Application

1.1 Analytes.

Analyte	CAS No.
Volatile Organic Compounds (VOC)	No CAS number assigned.

1.2 Scope. This method is applicable for the determination of VOC leaks from process equipment. These sources include, but are not limited to, valves, flanges and other connections, pumps and compressors, pressure relief devices, process drains, open-ended valves, pump and compressor seal system degassing vents, accumulator vessel vents, agitator seals, and access door seals.

1.3 Data Quality Objectives. Adherence to the requirements of this method will enhance the quality of the data obtained from air pollutant sampling methods.

2.0 Summary of Method

2.1 A portable instrument is used to detect VOC leaks from individual sources. The instrument detector type is not specified, but it must meet the specifications and performance criteria contained in Section 6.0. A leak definition concentration based on a reference compound is specified in each applicable regulation. This method is intended to locate and classify leaks only, and is not to be used as a direct measure of mass emission rate from individual sources.

3.0 Definitions

3.1 *Calibration gas* means the VOC compound used to adjust the instrument meter reading to a known value. The calibration gas is usually the reference compound at a known concentration approximately equal to the leak definition concentration.

3.2 *Calibration precision* means the degree of agreement between measurements of the same known value, expressed as the relative percentage of the average difference between the meter readings and the known concentration to the known concentration.

3.3 *Leak definition concentration* means the local VOC concentration at the surface of a leak source that indicates that a VOC emission (leak) is present. The leak definition is an instrument meter reading based on a reference compound.

3.4 *No detectable emission* means a local VOC concentration at the surface of a leak source, adjusted for local VOC ambient concentration, that is less than 2.5 percent of the specified leak definition concentration. that indicates that a VOC emission (leak) is not present.

3.5 *Reference compound* means the VOC species selected as the instrument calibration basis for specification of the leak definition concentration. (For example, if a leak definition concentration is 10,000 ppm as methane, then any source emission that results in a local concentration that yields a meter reading of 10,000 on an instrument meter calibrated with methane would be classified as a leak. In this example, the leak definition concentration is 10,000 ppm and the reference compound is methane.)

3.6 *Response factor* means the ratio of the known concentration of a VOC compound to the observed meter reading when measured using an instrument calibrated with the reference compound specified in the applicable regulation.

3.7 *Response time* means the time interval from a step change in VOC concentration at the input of the sampling system to the time at which 90 percent of the corresponding final value is reached as displayed on the instrument readout meter.

4.0 Interferences[Reserved]

5.0 Safety

5.1 Disclaimer. This method may involve hazardous materials, operations, and equipment. This test method may not address all of the safety problems associated with its use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to performing this test method.

5.2 Hazardous Pollutants. Several of the compounds, leaks of which may be determined by this method, may be irritating or corrosive to tissues (*e.g.*, heptane) or may be toxic (*e.g.*, benzene, methyl alcohol). Nearly all are fire hazards. Compounds in emissions should be determined through familiarity with the source. Appropriate precautions can be found in reference documents, such as reference No. 4 in Section 16.0.

6.0 Equipment and Supplies

A VOC monitoring instrument meeting the following specifications is required:

6.1 The VOC instrument detector shall respond to the compounds being processed. Detector types that may meet this requirement include, but are not limited to, catalytic oxidation, flame ionization, infrared absorption, and photoionization.

6.2 The instrument shall be capable of measuring the leak definition concentration specified in the regulation.

6.3 The scale of the instrument meter shall be readable to ±2.5 percent of the specified leak definition concentration.

6.4 The instrument shall be equipped with an electrically driven pump to ensure that a sample is provided to the detector at a constant flow rate. The nominal sample flow rate, as measured at the sample probe tip, shall be 0.10 to 3.0 l/min (0.004 to 0.1 ft^3 /min) when the probe is fitted with a glass wool plug or filter that may be used to prevent plugging of the instrument.

6.5 The instrument shall be equipped with a probe or probe extension or sampling not to exceed 6.4 mm (1/4in) in outside diameter, with a single end opening for admission of sample.

6.6 The instrument shall be intrinsically safe for operation in explosive atmospheres as defined by the National Electrical Code by the National Fire Prevention Association or other applicable regulatory code for operation in any explosive atmospheres that may be encountered in its use. The instrument shall, at a minimum, be intrinsically safe for Class 1, Division 1 conditions, and/or Class 2, Division 1 conditions, as appropriate, as defined by the example code. The instrument shall not be operated with any safety device, such as an exhaust flame arrestor, removed.

7.0 Reagents and Standards

7.1 Two gas mixtures are required for instrument calibration and performance evaluation:

7.1.1 Zero Gas. Air, less than 10 parts per million by volume (ppmv) VOC.

7.1.2 Calibration Gas. For each organic species that is to be measured during individual source surveys, obtain or prepare a known standard in air at a concentration approximately equal to the applicable leak definition specified in the regulation.

7.2 Cylinder Gases. If cylinder calibration gas mixtures are used, they must be analyzed and certified by the manufacturer to be within 2 percent accuracy, and a shelf life must be specified. Cylinder standards must be either reanalyzed or replaced at the end of the specified shelf life.

7.3 Prepared Gases. Calibration gases may be prepared by the user according to any accepted gaseous preparation procedure that will yield a mixture accurate to within 2 percent. Prepared standards must be replaced each day of use unless it is demonstrated that degradation does not occur during storage.

7.4 Mixtures with non-Reference Compound Gases. Calibrations may be performed using a compound other than the reference compound. In this case, a conversion factor must be determined for the alternative compound such that the resulting meter readings during source surveys can be converted to reference compound results.

8.0 Sample Collection, Preservation, Storage, and Transport

8.1 Instrument Performance Evaluation. Assemble and start up the instrument according to the manufacturer's instructions for recommended warm-up period and preliminary adjustments.

8.1.1 Response Factor. A response factor must be determined for each compound that is to be measured, either by testing or from reference sources. The response factor tests are required before placing the analyzer into service, but do not have to be repeated at subsequent intervals.

8.1.1.1 Calibrate the instrument with the reference compound as specified in the applicable regulation. Introduce the calibration gas mixture to the analyzer and record the observed meter reading. Introduce zero gas until a stable reading is obtained. Make a total of three measurements by alternating between the calibration gas and zero gas. Calculate the response factor for each repetition and the average response factor.

8.1.1.2 The instrument response factors for each of the individual VOC to be measured shall be less than 10 unless otherwise specified in the applicable regulation. When no instrument is available that meets this specification when calibrated with the reference VOC specified in the applicable regulation, the available instrument may be calibrated with one of the VOC to be measured, or any other VOC, so long as the instrument then has a response factor of less than 10 for each of the individual VOC to be measured.

8.1.1.3 Alternatively, if response factors have been published for the compounds of interest for the instrument or detector type, the response factor determination is not required, and existing results may be referenced. Examples of published response factors for flame ionization and catalytic oxidation detectors are included in References 1–3 of Section 17.0.

8.1.2 Calibration Precision. The calibration precision test must be completed prior to placing the analyzer into service and at subsequent 3-month intervals or at the next use, whichever is later.

8.1.2.1 Make a total of three measurements by alternately using zero gas and the specified calibration gas. Record the meter readings. Calculate the average algebraic difference between the meter readings and the known value. Divide this average difference by the known calibration value and multiply by 100 to express the resulting calibration precision as a percentage.

8.1.2.2 The calibration precision shall be equal to or less than 10 percent of the calibration gas value.

8.1.3 Response Time. The response time test is required before placing the instrument into service. If a modification to the sample pumping system or flow configuration is made that would change the response time, a new test is required before further use.

8.1.3.1 Introduce zero gas into the instrument sample probe. When the meter reading has stabilized, switch quickly to the specified calibration gas. After switching, measure the time required to attain 90 percent of the final stable reading. Perform this test sequence three times and record the results. Calculate the average response time.

8.1.3.2 The instrument response time shall be equal to or less than 30 seconds. The instrument pump, dilution probe (if any), sample probe, and probe filter that will be used during testing shall all be in place during the response time determination.

8.2 Instrument Calibration. Calibrate the VOC monitoring instrument according to Section 10.0.

8.3 Individual Source Surveys.

8.3.1 Type I—Leak Definition Based on Concentration. Place the probe inlet at the surface of the component interface where leakage could occur. Move the probe along the interface periphery while observing the instrument readout. If an increased meter reading is observed, slowly sample the interface where leakage is indicated until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately two times the instrument response time. If the maximum observed meter reading is greater than the leak definition in the applicable regulation, record and report the results as specified in the regulation reporting requirements. Examples of the application of this general technique to specific equipment types are:

8.3.1.1 Valves. The most common source of leaks from valves is the seal between the stem and housing. Place the probe at the interface where the stem exits the packing gland and sample the stem circumference. Also, place the probe at the interface of the packing gland take-up flange seat and sample

the periphery. In addition, survey valve housings of multipart assembly at the surface of all interfaces where a leak could occur.

8.3.1.2 Flanges and Other Connections. For welded flanges, place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. Sample other types of nonpermanent joints (such as threaded connections) with a similar traverse.

8.3.1.3 Pumps and Compressors. Conduct a circumferential traverse at the outer surface of the pump or compressor shaft and seal interface. If the source is a rotating shaft, position the probe inlet within 1 cm of the shaft-seal interface for the survey. If the housing configuration prevents a complete traverse of the shaft periphery, sample all accessible portions. Sample all other joints on the pump or compressor housing where leakage could occur.

8.3.1.4 Pressure Relief Devices. The configuration of most pressure relief devices prevents sampling at the sealing seat interface. For those devices equipped with an enclosed extension, or horn, place the probe inlet at approximately the center of the exhaust area to the atmosphere.

8.3.1.5 Process Drains. For open drains, place the probe inlet at approximately the center of the area open to the atmosphere. For covered drains, place the probe at the surface of the cover interface and conduct a peripheral traverse.

8.3.1.6 Open-ended Lines or Valves. Place the probe inlet at approximately the center of the opening to the atmosphere.

8.3.1.7 Seal System Degassing Vents and Accumulator Vents. Place the probe inlet at approximately the center of the opening to the atmosphere.

8.3.1.8 Access door seals. Place the probe inlet at the surface of the door seal interface and conduct a peripheral traverse.

8.3.2 Type II—"No Detectable Emission". Determine the local ambient VOC concentration around the source by moving the probe randomly upwind and downwind at a distance of one to two meters from the source. If an interference exists with this determination due to a nearby emission or leak, the local ambient concentration may be determined at distances closer to the source, but in no case shall the distance be less than 25 centimeters. Then move the probe inlet to the surface of the source and determine the concentration as outlined in Section 8.3.1. The difference between these concentrations determines whether there are no detectable emissions. Record and report the results as specified by the regulation. For those cases where the regulation requires a specific device installation, or that specified vents be ducted or piped to a control device, the existence of these conditions shall be visually confirmed. When the regulation also requires that no detectable emissions exist, visual observations and sampling surveys are required. Examples of this technique are:

8.3.2.1 Pump or Compressor Seals. If applicable, determine the type of shaft seal. Perform a survey of the local area ambient VOC concentration and determine if detectable emissions exist as described in Section 8.3.2.

8.3.2.2 Seal System Degassing Vents, Accumulator Vessel Vents, Pressure Relief Devices. If applicable, observe whether or not the applicable ducting or piping exists. Also, determine if any sources exist in the ducting or piping where emissions could occur upstream of the control device. If the required ducting or piping exists and there are no sources where the emissions could be vented to the atmosphere upstream of

the control device, then it is presumed that no detectable emissions are present. If there are sources in the ducting or piping where emissions could be vented or sources where leaks could occur, the sampling surveys described in Section 8.3.2 shall be used to determine if detectable emissions exist.

8.3.3 Alternative Screening Procedure.

8.3.3.1 A screening procedure based on the formation of bubbles in a soap solution that is sprayed on a potential leak source may be used for those sources that do not have continuously moving parts, that do not have surface temperatures greater than the boiling point or less than the freezing point of the soap solution, that do not have open areas to the atmosphere that the soap solution cannot bridge, or that do not exhibit evidence of liquid leakage. Sources that have these conditions present must be surveyed using the instrument technique of Section 8.3.1 or 8.3.2.

8.3.3.2 Spray a soap solution over all potential leak sources. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or squeeze bottle may be used to dispense the solution. Observe the potential leak sites to determine if any bubbles are formed. If no bubbles are observed, the source is presumed to have no detectable emissions or leaks as applicable. If any bubbles are observed, the instrument techniques of Section 8.3.1 or 8.3.2 shall be used to determine if a leak exists, or if the source has detectable emissions, as applicable.

9.0 Quality Control

Section	**Quality control measure**	**Effect**
8.1.2	Instrument calibration precision check	Ensure precision and accuracy, respectively, of instrument response to standard.
10.0	Instrument calibration	

10.0 Calibration and Standardization

10.1 Calibrate the VOC monitoring instrument as follows. After the appropriate warm-up period and zero internal calibration procedure, introduce the calibration gas into the instrument sample probe. Adjust the instrument meter readout to correspond to the calibration gas value.

Note: If the meter readout cannot be adjusted to the proper value, a malfunction of the analyzer is indicated and corrective actions are necessary before use.

11.0 Analytical Procedures[Reserved]

12.0 Data Analyses and Calculations[Reserved]

13.0 Method Performance[Reserved]

14.0 Pollution Prevention[Reserved]

15.0 Waste Management[Reserved]

16.0 References

1. Dubose, D.A., and G.E. Harris. Response Factors of VOC Analyzers at a Meter Reading of 10,000 ppmv for Selected Organic Compounds. U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2–81051. September 1981.

2. Brown, G.E., *et al.* Response Factors of VOC Analyzers Calibrated with Methane for Selected Organic Compounds. U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2–81–022. May 1981.

3. DuBose, D.A. *et al.* Response of Portable VOC Analyzers to Chemical Mixtures. U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2–81–110. September 1981.

4. Handbook of Hazardous Materials: Fire, Safety, Health. Alliance of American Insurers. Schaumberg, IL. 1983.

17.0 Tables, Diagrams, Flowcharts, and Validation Data[Reserved]