

Appendix E

June 24, 1999

Summary

Periodic Monitoring Recommendations For Generally Applicable Requirements in SIP

Note: General guidelines. May be case-specific deviations where alternative monitoring is more appropriate.^{1 2}

Requirement/Equipment	Recommended Periodic Monitoring	Notes
I. Opacity Limits (Assuming SIP limits of 20-40%)		
I.A.1. Gaseous-fueled combustion equipment (except flares).	A.2. None when unit is firing on gaseous fuel.	
I.B.1. Ground-level flares at landfills	<p>B.2.a Minimum Acceptable Monitoring: Continuous exhaust temperature limit/monitoring, either with continuous recorder or emergency shut off with alarm if combustion temperature falls out of specified range.</p> <p>B.2.b. Also acceptable: Automatic combustion air controller with alarm and automatic shutoff valve for the case of existing flare systems which already have this capability.</p>	Monitoring not required during start-up, to allow flare to come up to temperature. Start up to be defined in permit. Start up period is typically 15 minutes.
I.C.1. Ground-level flares at waste water treatment plants	C.2.a Minimum Acceptable Monitoring: Continuous exhaust temperature limit/monitoring with continuous recorder or emergency alarm if combustion temperature falls out of specified range. Alarm will trigger an immediate visible emissions inspection. If a visible emissions inspection documents opacity, a method 9	Monitoring not required during start-up, to allow flare to come up to temperature. Start up to be defined in permit. Start up period is typically 15 minutes.

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	evaluation shall be completed within 3 working days.	
I.D.1. Elevated Refinery Flares	<p>D.2. Minimum Acceptable Monitoring: either</p> <p>a) Visible emissions inspection via remote viewing system, supplemented by recordkeeping of instances in which unable to correct visible emissions problems. OR</p> <p>b) Visible emissions inspection as soon as any intentional or unintentional release of vent gas to a gas flare but no later than one hour from the flaring event, OR</p> <p>c) For clean service flares, monitoring will consist of monitoring of gas quality or other demonstration of gas quality.</p>	<p>AClean service≅ is a gas flare that is designed and configured by installation to combust only natural gas, hydrogen gas, and/or liquified petroleum gas.</p>
I.E.1. Elevated and Ground Level Oil Field Flares	<p>E.2.a. For high quality gas: If source submits data documenting that the quality of the gas over its range of variability would meet the definition of high quality gas, monitoring will consist of monitoring for gas quality or other demonstration of gas quality.</p> <p>E.2.b. For other gas: still under discussion Option: Monitoring similar to refinery flares. Alternative to the refinery flare monitoring may be proposed for remote locations (e.g., to reduce cost, monitoring could be conducted during times when flares are normally otherwise inspected/maintained by the facility.)</p>	<p>AHigh quality≅ means gas with high methane content and low heavy hydrocarbon content. More specific definition may be developed later based on District data.</p> <p>More work on oil field gas composition necessary (review data from San Joaquin and Ventura).</p>
I.F.1. Stack emissions from material handling	F.2.a. Minimum Acceptable Monitoring:	

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<p>units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment.</p> <p>Baghouses -- based on potential uncontrolled particulate matter emissions per baghouse</p>	<p>1. Visible emissions inspection to detect any visible emissions at following frequency (pressure drop monitoring may be substituted for visible emissions inspection.):</p> <table border="0" data-bbox="739 456 1392 639"> <tr> <td>Uncontrolled PTE</td> <td>Monitoring Frequency</td> </tr> <tr> <td>< 25 TPY</td> <td>Annual</td> </tr> <tr> <td>25 to 300 TPY</td> <td>Quarterly</td> </tr> <tr> <td>>300 to 1,300 TPY</td> <td>Monthly</td> </tr> <tr> <td>>1,300 TPY</td> <td>Weekly</td> </tr> </table> <p>Case by case consideration can be given to modifying the above monitoring frequencies to deal with special situations, or for multiple baghouses where a consistent frequency would provide for better overall monitoring, without loss of adequate compliance assurance. AND</p> <p>2. Baghouse to be completely inspected annually.</p> <p>F.2.b. Also acceptable: COMS or triboelectric monitoring.</p>	Uncontrolled PTE	Monitoring Frequency	< 25 TPY	Annual	25 to 300 TPY	Quarterly	>300 to 1,300 TPY	Monthly	>1,300 TPY	Weekly	
Uncontrolled PTE	Monitoring Frequency											
< 25 TPY	Annual											
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<p>I.G.1. Stack emissions from material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment.</p> <p>Vent Filters</p>	<p>G.2.a. Receiving Silos</p> <ol style="list-style-type: none"> 1. Perform visible emissions inspection and record results annually. If any VE are observed, corrective action is required prior to further loading. Corrective action means that VE is eliminated before next loading event. 2. Maintain all records of vent filter maintenance. <p>G.2.b. Process Silos (Silos continuously loaded during</p>	<p>Monitoring frequency may be linked to size consistent with frequencies in I.E.2.a.</p>										

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	process operation.) 1. Perform visible emissions inspection and record results on a quarterly basis. If any VE are observed, immediate corrective action (within 24 hours, or another specified time frame consistent with SIP-approved District rule) is required. Corrective action means that the VE is eliminated. 2. Inspect filter bags for scuffs, wear, holes, tears, etc. and all connection points, hatches etc. on an annual basis.	
I.H.1. Stack emissions from material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment. Scrubbers [Based on scrubber with exhaust flow of 7,500 cfm.]	H.2. Weekly records of pressure drop and scrubbing liquid flow rate, and weekly visual qualitative check to make sure settling pond is working adequately.	
I.I.1. Stack emissions from material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment. Cyclones	I.2. Case-by-case basis.	May be revisited at later date.
I.J.1. Fugitive emissions from process transfer points at material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment. Grain loading limits are not applicable to fugitive (non-stack	J.2. Annual inspection of enclosure.	

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<p>discharge) emissions, however, process weight rate limits are applicable to fugitive emissions.</p> <p>Totally enclosed systems</p>		
<p>I.K.1. Fugitive emissions from process transfer points at material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment. Grain loading limits are not applicable to fugitive (non-stack discharge) emissions, however, process weight rate limits are applicable to fugitive emissions.</p> <p>Fugitive emissions (no spraybars)</p>	<p>K.2. Annual visible emissions inspection under material and environmental conditions (e.g. dry and/or windy) where high emissions expected.</p>	<p>May still need to discuss what would be required as a follow-up action if visible emissions are documented during annual inspection.</p>
<p>I.L.1. Fugitive emissions from process transfer points at material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment. Grain loading limits are not applicable to fugitive (non-stack discharge) emissions, however, process weight rate limits are applicable to fugitive emissions.</p> <p>Fugitive emissions (controlled by spraybars)</p>	<p>L.2. Case-by-case basis</p>	
<p>I.M.1. Gas turbine [based on example turbine of 941 mmbtu/hr]</p>	<p>M.2. Annual visible emissions inspection if the unit is fired on diesel fuel for training/testing purposes; and A visible emissions inspection after every 400 cumulative hours of operation on diesel fuel or after</p>	<p>Monitoring frequency can be scaled similar to the scaling for monitoring frequency for boilers in I.O.2.</p>

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	<p>every 2 million gallons of diesel fuel combusted, to be counted cumulatively over a 5 year period. If a visible emissions inspection documents opacity, a method 9 evaluation shall be completed within 3 working days, or during the next scheduled training/testing period if the unit ceases firing on diesel fuel within the 3 working day time frame.</p>	<p>For sources keeping records of fuel use rather than hours of operation, monitoring frequency could be based on the cumulative amount of fuel combusted; Hours of operation could be converted to gallons fuel combusted based on the maximum gallons fuel combusted per hour by a specific emissions unit.</p>
<p>I.N.1. Reciprocating engines equal or greater than 1000 horsepower, firing on only diesel with no restrictions on operation</p>	<p>N.2. Quarterly Method 9 or a visible emissions inspection that triggers a Method 9 within 3 working days, or during the next scheduled training/testing period if the unit ceases firing on fuel oil within the 3 working day time frame.</p>	
<p>I.O.1. Diesel Standby and emergency reciprocating engines</p>	<p>O.2. No monitoring for opacity.</p>	<p>This monitoring applies to any CA sources firing on diesel fuel, based on consideration that sources in CA usually combust CA diesel or other low-sulfur, low aromatic diesel fuels.</p>
<p>I.P.1. Diesel/Distillate-Fueled Boilers</p>	<p>P.2. A visible emissions inspection after every 1 million gallons diesel combusted, to be counted cumulatively over a 5 year period. If a visible emissions inspection documents opacity, a method 9 evaluation shall be completed within 3 working days, or during the next scheduled operating period if the unit ceases firing on diesel fuel within the 3 working day time frame.</p>	<p>This monitoring applies to any CA sources firing on diesel fuel, based on consideration that sources in CA usually combust CA diesel or other low-sulfur, low aromatic diesel fuels.</p> <p>For sources keeping records of</p>

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		hours of operation rather than fuel use, monitoring frequency could be based on the cumulative hours of operation; Fuel use could be converted to hours of operation based on the maximum gallons fuel combusted per hour by a specific emissions unit.
II. Grain Loading [Assuming SIP limits 0.1 gr/dscf or higher] and Process Weight		
II.A.1. Stack emissions from material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment.	A.2. See monitoring for I.F. through I.I. above.	
II.B.1. Fugitive emissions from process transfer points at material handling units such as aggregate plants, asphalt batch plants, lime plants, kilns, Portland cement plants, and dry materials handling equipment. Grain loading limits are not applicable to fugitive (non-stack discharge) emissions, however, process weight rate limits are applicable to fugitive emissions.	B.2. See monitoring for I.J through I.L above.	
III. Sulfur Content of Fuels		
III.A.1. PUC quality natural gas / propane / butane / ARB quality reformulated gasoline / ARB (or EPA) certified diesel	A.2. None when unit is firing on one of fuels listed under III.A.1.	

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III.B.1. Landfill gas	<p>B.2.a. For limits ≥ 750 ppm as H₂S or 160 ppm as SO₂, test landfill gas quarterly using Draeger tubes. If source-specific historical data shows seasonal variation is minimal, then test landfill gas annually using Draeger tubes.</p> <p>B.2.b. If there is control equipment for purposes of meeting the limit, periodic monitoring of the control equipment.</p>	For new landfills, permit could provide for reducing quarterly monitoring frequency after data has been collected to show emissions variation is minimal.
III.C.1. Sewage Digester gas	C.2. For all limits, test weekly using Draeger tubes (or equivalent method) to measure sulfur content of gas. If source-specific historical data shows emissions are well below the applicable limit with minimal variation, then test (less frequently) using Draeger tubes.	If data is available to show emissions well below applicable limits, would consider different monitoring for this limit. Also, permit could provide for reducing monitoring frequency after data has been collected to show emissions variation is minimal.
III.D.1. Oil field gas	<p>D.2.a. Dependent on oil field sulfur, to be determined during permit preparation or through periodic monitoring:</p> <p>If sweet gas, annual monitoring, otherwise If pre-control S levels <50% of limit, annual monitoring 50-80% of limit, semi-annual monitoring 80-100% of limit, quarterly monitoring</p> <p>D.2.b. If pre-control S levels >100% of limit, periodic monitoring of the control equipment.</p>	Would like to include oil field test data from Districts as supporting information.

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III.E.1. Other gaseous or liquid fuels not addressed by III.A. through D above	E.2. Certification by fuel supplier for each fuel delivery. Certification may be provided once for each purchase lot, if records are also kept of the purchase lot number of each delivery.	Title IV (acid rain) monitoring requirements could also serve as adequate periodic monitoring
IV. Specific Contaminants (e.g. CO, SO ₂ , PM)		
IV.A.1. Emission limits for common pollutants, applicable to broad range of combustion equipment	A.2. For SO ₂ concentration, monitor fuel sulfur content as a surrogate. For limits covered by section III above, do monitoring as specified in that section. For other limits, set monitoring frequency on a case-by-case basis.	

1. Monitoring shall be the responsibility of the source. However, a visible emissions inspection or Method 9 conducted by a District inspector may be counted as meeting the requirement for the source to conduct same if the information and records generated by the inspector meets the requirements of the permit and a copy of the records are maintained by the source consistent with Title V recordkeeping requirements.

2. In addition to the monitoring identified in the specific monitoring recommendations, Title V permits will also include recordkeeping provisions associated with the monitoring requirements. Records will generally include information such as:

- ☐ identification of the stack or emission point being monitored;
- ☐ the operating conditions at the time of monitoring;
- ☐ records of any monitoring conducted, including records of emission or parameter values, and the date, place and time of sampling or measurement.
- ☐ where corrective action is triggered, description of the corrective action, and the date, time, and results of any corrective action.