

May 2, 2006

Contact – Mike Adhanom

Workgroup Recommendations and Other Potential Control Measures
Stationary Combustion Sources Workgroup

SCS008 – Asphalt Production Plants

<p>Control Measure Summary: Revise Subchapters 9 and 16. Change Subchapter 9 to require all Zones meet 0.05% sulfur in fuel; and amend Subchapter 16 to require new plants install drum mix.</p>	<p align="center">Emissions (tons/year) in State of New Jersey</p>																															
<p>2002 existing measure: Operations meet existing New Jersey RACT levels with out controls. There are 70 batch and drum mix burners operating in the state. Data are available for 57 burners. 13 are low NOx burners (Low), 22 are total air supplied by burner (Total), 17 are induced draft 30% air supplied by burner (Induced), and 5 are refractory stabilized flame burners. The average annual fuel was 60,600 MMBTU per plant.</p> <p>VOC (Sub 16): Batch and drum mix asphalt shall not exceed 250 ppmvd at 7% O2.</p> <p>NOx (Sub 19): Batch and drum mix asphalt shall not exceed 200 ppmvd at 7% O2.</p> <p>SOx (Sub 9): Maximum sulfur in fuel for Zone 3, 4 & 6 is 0.2% and for Zone 1, 2, & 5 is 0.3%.</p> <p>Implementation Area: Statewide</p>	<p>VOC in 2002</p>	<p align="center">110</p>																														
	<p>NOx in 2002</p>	<p align="center">320</p>																														
	<p>SO2 in 2002</p>	<p align="center">452</p>																														
<p>Candidate Measure 1: VOC: VOC emissions from batch plants are approximately 1 TPY greater than for drum plants. Approximately 50% of the plants in New Jersey are batch so there is potentially 35 TPY of VOC reduction possible by changing batch plant fugitive systems to drum type.</p>	<p align="center">VOC 2002 Base (2009 projected): 2009 Reduction: 2009 Remaining:</p>	<p align="center">147 - 47 100</p>																														
<p>Candidate Measure 2: NOx: Can be reduced by 35% with low NOx burners (LNB) for the induced and other burners. Only 15% of plants with induced burn #2 fuel oil. If all 15% (10 plants) converted to LNB you could project a 14 ton reduction.</p> <p>Average Tons per year NOx</p> <table border="1"> <thead> <tr> <th>BRNER</th> <th>NG</th> <th>Propane</th> <th>#2FO</th> <th>#4FO</th> <th>Waste oil</th> </tr> </thead> <tbody> <tr> <td>Low</td> <td>3.493</td> <td>5.664</td> <td>5.132</td> <td>0.000</td> <td>6.659</td> </tr> <tr> <td>Total</td> <td>4.001</td> <td>0.000</td> <td>5.768</td> <td>0.000</td> <td>6.400</td> </tr> <tr> <td>Induced</td> <td>3.384</td> <td>0.000</td> <td>7.162</td> <td>0.000</td> <td>7.488</td> </tr> <tr> <td>Other</td> <td>3.579</td> <td>0.000</td> <td>6.953</td> <td>9.638</td> <td>0.000</td> </tr> </tbody> </table>	BRNER	NG	Propane	#2FO	#4FO	Waste oil	Low	3.493	5.664	5.132	0.000	6.659	Total	4.001	0.000	5.768	0.000	6.400	Induced	3.384	0.000	7.162	0.000	7.488	Other	3.579	0.000	6.953	9.638	0.000	<p align="center">NOx 2002 Base (2009 projected): 2009 Reduction: 2009 Remaining:</p>	<p align="center">427 - 19 108</p>
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Disclaimer – The recommendations contained within this white paper do not constitute official state decisions nor reflect any pending regulatory or nonregulatory actions. The NJDEP welcomes public feedback on this (or any other) white paper.

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<p>Candidate Measure 3: SOx: Fuel use averaged 25% natural gas, 50% fuel oil and 25% recycled oil for the 57 burners. Based on that breakdown of fuels, a 178 TPY reduction in SO2 emissions can be expected if fuel sulfur content is limited to 0.05%. **This reduction may be a subset of candidate reduction measure, HR001, for regional lower sulfur fuel oil control.</p>	<p style="text-align: right;">SOx 2002 Base (2009 projected): 2009 Reduction: 2009 Remaining:</p>	<p style="text-align: right;">603 <u>- 237**</u> 330</p>
<p>Policy Recommendation of State/Workgroup Lead: VOC: Require new plants to install drum mix. NOx: The reduction appears to be limited to fuel oil and does not extend to natural gas or waste oil. There is little benefit in replacing a total air burner with Low NOx Burner for any fuel. The data indicates that there would be very little additional reduction in NOx if every burner were replaced. SOx: Sub 9 should be changed to require all Zones to meet 0.05% sulfur in fuel.</p>		