

**Region 3 Plan Summary
West Virginia Sulfur Dioxide (SO₂) Maintenance Plan
for the New Manchester-Grant Magisterial District**

Title: West Virginia State Implementation Plan to Achieve and Maintain the National Ambient Air Quality Standards for Sulfur Dioxide in the New Manchester- Grant Magisterial District

Federal Register Dates: June 8, 2005, 70 FR 33408 (proposed rule) and 70 FR 33364 (final rule).

EPA Effective date: August 8, 2005.

State Submittal Date: July 27, 2004.

Affected Areas: New Manchester-Grant Magisterial District in Hancock County.

Summary of the Plan: On July 27, 2004, the State of West Virginia submitted a sulfur dioxide (SO₂) redesignation request and associated maintenance plan for the New Manchester-Grant Magisterial District. The maintenance plan shows that the national ambient air quality standards (NAAQS) for SO₂ will be maintained for at least 10 years after redesignation. Eight years after the original redesignation request is approved, the State is required to provide for maintenance of the NAAQS for an additional 10 years following the first 10-year period. West Virginia has submitted and EPA has approved all of the required enforceable measures applicable to this area. The primary sources of SO₂ in the New Manchester-Grant Magisterial District nonattainment area were the steel manufacturing and petroleum processing facilities and power generating stations located in or adjacent to the area. The improvement in air quality in the New Manchester-Grant Magisterial District area is due to permanent and enforceable emission reductions.

Monitoring Requirements: The SO₂ monitoring network in the New Manchester-Grant District area consists of four monitors: Chester, Lawrenceville, New Manchester, and New Cumberland. These monitors meet all applicable EPA siting requirements, and are representative of the highest ambient concentrations. The maintenance plan submittal included quality-assured ambient air quality data from 1992 through 2003. This data has been quality assured and recorded in the AQS and indicates that no violations of the annual, 24-hour, and 3-hour SO₂ standards have been recorded during this time period. With regard to 2004, data indicates that no exceedances have been recorded to date.

Emission Inventory: The attainment inventory is the modeled attainment inventory. This inventory reflects allowable emission rates for the Quaker State Refinery and the Weirton Steel Corporation, as well as other significant sources located in West Virginia, Ohio, and Pennsylvania, which are enforceable via permits, regulations, and consent orders. Any future increases in emissions or significant changes to the stack configuration/parameters from those modeled in the attainment demonstration due to new or modifying stationary sources would be

subject to applicable new source review (NSR) requirements, including a demonstration that the NAAQS is protected. Recent transportation studies have also shown that manufacturing is predicted to decrease by 12.60 percent while commercial is predicted to increase by 20.60 percent from the year 1994 through the year 2025. These studies project a 3.69% decrease in population for the years 1990-2025, along with a 1.89% decrease in occupied households for the years 1994-2025 in the local metropolitan area. Therefore, no new growth is anticipated to impact emissions in the area. The continual decline in population and number of occupied households is likely to result in a similar decline in emissions caused by household heating along with personal motor vehicle emission sources.

Control Measures/Regulations Included As Part of the Plan: The applicable control measures consist primarily of consent orders entered into by and between the State of West Virginia and the Quaker State Refinery in Congo, West Virginia and the Weirton Steel Corporation in Weirton, West Virginia. The consent orders establish SO₂ emission limits for numerous emission points at both facilities. The submittal contains an air quality dispersion modeling demonstration that indicates that the allowable emission limits will provide for the attainment of the NAAQS for SO₂ in the New Manchester-Grant area. The consent orders stipulate the following emission limitations for the Quaker State Corporation refinery and the Weirton Steel Corporation facility:

QUAKER STATE CORPORATION, CONGO REFINERY SO₂ Emission Limits approved by EPA on November 27, 1996 (61 FR 60191).

SO₂ emission unit	SO₂ emission limit
Coal-fired, Fluidized-bed Boiler No. 1	1.2 lbs-SO ₂ /MMBtu of heat input, at any time.
Coal-fired, Fluidized-bed Boiler No. 2	1.2 lbs-SO ₂ /MMBtu of heat input, at any time.
Oil-fired Package Boiler A	1.2 lbs-SO ₂ /MMBtu of heat input, at any time.
Oil-fired Package Boiler B	1.2 lbs-SO ₂ /MMBtu of heat input, at any time.
Simultaneous operation of Coal-fired, Fluidized-bed Boilers Nos.1 and 2...	192 lbs-SO ₂ /hour, each boiler.
Simultaneous operation of Oil-fired Package Boilers A and B	264 lbs-SO ₂ /hour, combined.
Simultaneous operation of one Coal-fired, Fluidized-bed Boiler and one Oil-fired Package Boiler.....	264 lbs-SO ₂ /hour, combined.
Process Heaters H-101 and H-102	1.1 lbs-SO ₂ /MMBtu.
Process Heaters H-501/6 and H-601/4	0.8 lbs-SO ₂ /MMBtu.
Vacuum Fractionator Heater H-701	Shall burn natural gas and/or treated refinery gas that contains ≤10 grains of hydrogen sulfide per 100 dry standard cubic feet of gas, and 0.8 lbs-SO ₂ /MMBtu.
Process Heater H-201	Shall burn fuel oil, desulfurized fuel gas and/or natural gas, and 1.1 lbs-SO ₂ /MMBtu.
Hydrogen Unit Heater H-605	Shall burn natural gas only.

The consent order (CO) approved by EPA on May 5, 2004 (69 FR 24986) stipulates the following emission limitations for the Weirton Steel Corporation facility:

Weirton Steel Corporation, Weirton Facility SO₂ Emission Limits	
SO₂ Emissions Unit	SO₂ Emission Limit
Sinter Plant	Shall not be operated by the Company
High Pressure Boilers 1 and 2	Shall not be operated by the Company.
Low Pressure Boilers LP1, LP2, LP3, LP4, and LP15	Shall not be operated by the Company.
Coal	Shall not be fired at any boiler operated by the Company.
SO ₂ emissions from High Pressure Boilers 3, 4 and 5	Shall be limited by restricting the firing of fuel oil to a rate dependent upon the sulfur content of the fuel oil fired as described in Appendix A to the CO. The allowable fuel oil firing rate shall be the 3-hour block average derived from Appendix A expressed in total gallons of fuel oil fired at High Pressure Boilers 3, 4, and 5 over a 3-hour period.
The percentage of sulfur contained in the fuel oil purchased to be fired at the company's high pressure boilers	Shall not exceed 3%.
Total fuel oil and sulfur content fired at boilers 3, 4 and 5	Shall be limited to the product of (gpm) x (%S) being less than or equal to the emission factor of 91.7 as per the curve in Appendix A of the CO.
The BOP Waste Heat Boiler	Shall be pre-heated using steam sparging. Fuel fired at the Waste Heat Boiler shall be limited to Natural Gas, Mixed Gas, or steel making process gas.
Foster Wheeler Boilers #101 and #102	Shall have a combined limit of 109.73 lbs per hour of SO ₂ . These boilers shall be limited to firing only blast furnace gas, natural gas, and mixed gas (comprised of approximately 70% natural gas and 30% air).

Weirton Steel Corporation, Weirton Facility SO₂ Emission Limits	
SO₂ Emissions Unit	SO₂ Emission Limit
Hot Mill Reheat Furnaces, Hydrochloric Acid Regeneration Plant combustion sources, and Annealing Furnaces	Shall be limited to firing only natural gas and mixed gas (comprised of approximately 70% natural gas and 30% air).
Blast Furnaces designated #2 and #3	Shall not recommence operation.
Blast Furnace #1 Stoves	Shall be limited to 60.1 lbs. per hour of SO ₂ .
Blast Furnace #1	Shall be limited to 42.1 lbs per hour of SO ₂ .
Blast Furnace #4 Stoves	Shall be limited to 60.1 lbs per hour of SO ₂ .
Blast Furnace #4 Flare	Shall be limited to 42.1 lbs per hour of SO ₂ .
Slag Granulator	Shall be limited to 50 lbs per hour of SO ₂ .

Contingency Measures: The State of West Virginia will rely on ambient air monitoring data in the New Manchester-Grant area to track compliance with the NAAQS for SO₂ and to determine the need to implement contingency measures. In the event that an exceedance of the SO₂ standards is recorded, the State will review the monitored ambient SO₂ data, review local monitored meteorological data, and assess compliance of local targeted facilities. In the event that all sources are found to be in compliance with applicable SIP and permit emission limits, the State will perform the necessary analysis to determine the cause(s) of the exceedance, and determine what additional control measures are necessary to impose on the area's stationary sources to continue to maintain attainment of the NAAQS for SO₂.

If an exceedance of an SO₂ NAAQS occurs, the State will notify the subject companies that the potential exists for a NAAQS violation. The subject companies must then prepare a detailed plan of action containing control measures for implementation in the event of a violation. This plan of action shall include an implementation time line and shall be submitted to the State within 6 months of notification that the potential exists for a violation. Contingency measures will be implemented no later than 18 months after the State informs the subject companies that a violation of the standard has occurred. Any additional control measures will be submitted to EPA for approval and incorporation into the SIP.

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