

**Utah State Implementation Plan**

**Emission Limits**

**Section IX Part H**

Adopted by the Air Quality Board  
June 5, 2002

**IX.H.1. Emission Limits and Operating Practices (Utah County).** (Dated 24 September 1990 and updated June 28, 1991; February 27, 1997, and April 24, 2002.)

**IX.H.1.a General Requirements**

1.a.A Stack testing to show compliance with the emission limitations for the sources in this appendix shall be performed in accordance with 40 CFR 60, Appendix A; 40 CFR 51 Appendix M; and R307-305-3, Utah Air Conservation Rules. The back half condensibles are required for inventory purposes. The following test methods shall be used for the indicated air contaminants:

**PM<sub>10</sub>** For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201 or 201a plus the back half condensibles using Method 202, or other appropriate EPA approved reference method.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, 5e, plus back half condensibles using method 202, or other appropriate EPA approved reference method. All particulate captured in the back half shall be considered PM<sub>10</sub>.

The PM<sub>10</sub> captured in the front half shall be considered for compliance purposes.

**SO<sub>2</sub>** Appendix A, Method 6, 6A, 6B or 6C

**NO<sub>x</sub>** Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E

**Sample Location** Appendix A, Method 1

**Vol flow rate** Appendix A, Method 2

**Calculations** To determine mass emission rates, the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors to give the results in the specified units of the emission limitation.

Notification of the test date shall be provided at least 30 days prior to the test. A pretest conference shall be held if directed by the Executive Secretary. The emission point shall be designed to conform

to the requirements of 40 CFR 60, Appendix A, Method 1, and Occupational Safety and Health Administration (OSHA) approvable access shall be provided to the test location. The production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three (3) years.

- 1.a.B Compliance with the annual limitations shall be determined based on a rolling 12 month total. On the first day of each month a new 12-month total shall be calculated using the previous 12 months.
- 1.a.C Records of all information used to show compliance shall be kept for all periods when the plant is in operation. These records shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.
- 1.a.D All installations and facilities authorized by this regulation shall be adequately and properly maintained.
- 1.a.E The definitions contained in R307-101-2, Definitions, apply to Section IX, Part H.
- 1.a.F Visible emissions shall be as follows except as otherwise designated in specific source subsections: Baghouse applications shall not exceed 10% opacity; scrubber and ESP applications shall not exceed 15% opacity; combustion sources without control facilities shall not exceed 10% opacity; and fugitive emissions shall not exceed 15% opacity; fugitive dust and all other sources shall not exceed 20% opacity.
- 1.a.G Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9. For intermittent sources and mobile sources opacity observations shall be conducted using procedures similar to Method 9, but the requirement for observations to be made at 15 second intervals over a six minute period shall not apply and any time interval with no visible emissions shall not be included.
- 1.a.H All unpaved operational areas which are used by mobile equipment shall be water sprayed and/or chemically treated to reduce fugitive dust. Control is required at all times (24 hours per day every day) for the duration of the project/operation. The application rate of water shall be a minimum of 0.25 gallons per square yard. Application shall be made at least once every two hours during all times the installation is in use unless daily rainfall exceeds .10 of an inch or the road is in a muddy condition or if it is covered with snow or if the ambient temperature falls below freezing or if the surfaces are in a moist/damp condition. If chemical treatment is to be used, the plan must be approved by the Executive Secretary. Records of water treatment shall be kept

for all periods when the plant is in operation. The records shall include the following items:

- A. Date
- B. Number of treatments made, dilution ratio, and quantity
- C. Rainfall received, if any, and approximate amount
- D. Time of day treatments were made

Records of treatment shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request.

IX.H.1.b Particulate Emission Limitations (company specific)

1.b.A GENEVA NITROGEN, INC.

1. Emissions to the atmosphere from the indicated emission points shall not exceed the following rates and concentrations:

A. Montecatini Acid Plant Vent

NO<sub>x</sub> - 0.389 tons/day, 140 tons/yr

B. Weatherly Acid Plant Vent

NO<sub>x</sub> - 0.233 tons/day, 83.8 tons/yr

C. Prill Tower

PM<sub>10</sub> - 0.24 tons/day, 86 tons/yr

Compliance with the daily and annual mass emission limits shall be demonstrated by multiplying the most recent stack test results by the appropriate hours of operation for each day and for each rolling 12-month period. Hours of operation shall be determined by supervisor monitoring and maintaining of an operations log.

2. Stack testing to show compliance with the emission limitations of condition #1 shall be performed as specified below:

Emission Point	Pollutant	Test Frequency
A. Montecatini Acid Plant Vent	NO <sub>x</sub>	every two years
B. Weatherly Acid Plant Vent	NO <sub>x</sub>	every three years
C. Prill Tower	PM <sub>10</sub>	every three years

1.b.B GENEVA ROCK PRODUCTS, OREM PLANT

1. During the period from November 1 to the last day in February, inclusive, emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

A. Asphalt Plant Baghouse Stack (APBH)

(1)	PM <sub>10</sub>	0.103 tons/day
(2)	NO <sub>x</sub>	0.568 tons/day
(3)	SO <sub>x</sub>	0.484 tons/day

Compliance with the daily mass emission limits shall be demonstrated by multiplying the most recent stack test by the appropriate hours of operation for each day. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

2. Stack testing to show compliance with the emission limitations of condition #1 shall be performed as specified below:

<u>Emission Point</u>	<u>Pollutant</u>	<u>Test Frequency</u>
Asphalt Plant	PM <sub>10</sub>	3 years
	NO <sub>x</sub>	3 years
	SO <sub>x</sub>	3 years

3. Opacity observations of emissions from the Asphalt Plant shall be conducted at least once every 12 months.

1.b.C. GENEVA STEEL

In the following tables: the "Geneva Other" category includes the power house, rolling mill, and fugitives; the "Secondary Sulfate" category includes SO<sub>2</sub> emissions from the blast furnace, Q-BOP, and sources included in the "Geneva Other" category; and the "Secondary Nitrate" category includes NO<sub>x</sub> emissions from the coke plant, blast furnace, Q-BOP, and sources included in the "Geneva Other" category.

The following table identifies the banked emissions at Geneva Steel:

Banked Emissions - Geneva Steel (Tons/Year)			
Geneva Steel Process	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>
Coke Plant	461.8	454.9	557.2
Sinter Plant	101.0	434.2	705.2
Q-BOP	27.2		
Geneva Other	51.0		
Totals	641	889.1	1262.4

1. Emissions to the atmosphere from the indicated emission points shall not exceed the following rates and concentrations:

Annual Emissions - Geneva Steel (After Banking) - Tons/Year			
Geneva Steel Process	PM10	SO <sub>2</sub>	NO <sub>x</sub>
Coke Plant	29.6	0.0	(see footnote 1)
Sinter Plant	(see footnote 2)	(see footnote 2)	(see footnote 2)
Blast Furnace	454.4		
Q-BOP	178.2		
Geneva Other	448.1		
Secondary Sulfate		560.2	
Secondary Nitrate			2971.8

Daily Emissions - Geneva Steel (September - May) - Tons/Day			
Geneva Steel Process	PM10	SO2	NOx
Coke Plant	0.1	0.0	(see footnote 1)
Sinter Plant	(see footnote 2)	(see footnote 2)	(see footnote 2)
Blast Furnace	1.3		
Q-BOP	0.5		
Geneva Other	1.2		
Secondary Sulfate		1.0	
Secondary Nitrate			7.7

Daily Emissions - Geneva Steel (June - August) - Tons/Day			
Geneva Steel Process	PM10	SO2	NOx
Coke Plant	0.1	0.0	(see footnote 1)
Sinter Plant	(see footnote 2)	(see footnote 2)	(see footnote 2)
Blast Furnace	1.3		
Q-BOP	0.5		
Geneva Other	1.4		
Secondary Sulfate		3.4	
Secondary Nitrate			9.6

Footnote 1: All NOx emissions from coke plant ovens have been banked. Emissions of NOx associated with continuing operations in the vicinity of the coke plant (coke pile handling) are accounted for in the secondary nitrate item.

Footnote 2: All emissions of PM10, SO2, and NOx from the sinter plant have been banked.

- Compliance with the daily and annual mass emission limits shall be demonstrated by formulas and methods of calculation utilizing the most recent stack test results, appropriate hours of operation, and operational parameters described below. Hours of Q-BOP heats, amount of coke handled at the coke plant, amount of hot metal charged, amount of liquid steel produced, amount of hot metal produced at the blast furnaces, and amount of raw material handled at the blast furnaces shall be determined daily by supervisor monitoring and maintaining an operations log. Daily monitoring of fuel usage will be done via natural gas and blast furnace gas metering and determining total coal used each

day. Acreage of coke storage piles and acreage of areas exposed to wind erosion shall be measured or estimated and recorded at the end of each month; the resulting values shall be used for the relevant compliance calculations described below during the following month. These records shall be kept for a period of two years and shall be made available to the Executive Secretary or his representative upon request.

#### 2.A Coke Plant:

1. For windblown coke from storage piles: For PM10, use AP-42 emission factor and control efficiency factors from Geneva Steel's Emission Inventory Spreadsheets Approval Order (EISAO) times pile acreage.
2. For coke handling: For PM10, use AP-42 emission factor and control efficiency factors from EISAO times amount of coke handled.

#### 2.B Blast Furnace:

1. For raw material handling: For PM10, use AP-42 emission factor and control efficiency factors from EISAO times amount of raw material handled.
2. For hot metal production: For PM10, use AP-42 emission factor and control efficiency factors from EISAO times amount of hot metal produced.
3. For fuel usage (mixture of natural gas and blast furnace gas) other than fume suppression:
  - a. For PM10, use emission factor from the most recent stack test at the powerhouse bypass stack #5 times amount of fuel used at the blast furnace stoves;
  - b. For NO<sub>x</sub>, use EISAO emission factor from the most recent stack test at chimney valve of blast furnace stoves times amount of fuel used at the blast furnace stoves;
  - c. For SO<sub>2</sub>, use emission factor from most recent ASTM test for sulfur content in fuel times amount of fuel used, assuming all sulfur content emitted as SO<sub>2</sub>.
4. For fume suppression: For PM10, SO<sub>2</sub>, and NO<sub>x</sub>: Use AP-42 emission factors times natural gas used.

#### 2.C Q-BOP:

1. For stack PM10: Use emission factors from the most recent stack tests at each of the two primary collection system stacks (the average of the test results at both stacks) and at secondary collection system stack times hours

per day of Q-BOP heats (production cycles).

2. For fugitive PM10: Use AP-42 Emission factor and control efficiency factor from EISA0 for
  - a. hot metal charging times amount of hot metal charged per day; and
  - b. liquid steel production times amount of liquid steel produced per day.
3. For NOx:
  - a. use emission factor from the most recent stack test at each of the two primary collection system stacks (average of tests results at both stacks) times hours/day of Q-BOP heats; and
  - b. use emission factor from the most recent stack test at each of the two package steam boilers times hours/day of use of that boiler.

#### 2.D Powerhouse:

1. For gaseous fuel usage (mixture of natural gas and blast furnace gas):
  - a. For PM10 and NOx, use emissions factor from the most recent stack test at the powerhouse bypass stack #5 times amount of fuel used per day (expressed as amount of heat input/day);
  - b. For SO2, use emission factor from most recent ASTM test for sulfur content in fuel times amount of fuel used per day (expressed as amount of heat input/day), assuming all sulfur content emitted as SO2.
2. For coal usage:
  - a. For PM10 and NOx, use emissions factor from the most recent stack test at the powerhouse baghouse stack times amount of fuel used per day (expressed as amount of heat input/day);
  - b. For SO2, use emission factor from most recent ASTM test for sulfur content in fuel times amount of fuel used per day (expressed as amount of heat input/day), assuming all sulfur content emitted as SO2.

#### 2.E Rolling Mills:

1. For Soaking Pits and Reheat Furnaces PM10 and NOx: Use emission factor from the average of the most recent stack tests at three of the non-ejector-type stacks times amount per day of natural gas used (expressed as heat input/day).

2. For Ladle Metallurgy Facility (LMF) PM10: Use emission factor from the most recent stack test at the LMF baghouse stack times amount per day of natural gas used at the ladle preheaters (expressed as heat input/day).
  3. For LMF NOx, use AP-42 emission factor times amount per day of natural gas used at ladle preheaters (expressed as heat input/day).
- 2.F For fugitive PM10 and NOx:
1. For equipment usage: use AP-42 emission factor or equipment manufacturer specifications times hours per day the equipment is used;
  2. For exposed area wind erosion: use AP-42 emission factor times total exposed area acreage.
- 2.G All SO2 and NOx emissions shall be summed from the sources listed in 2.B through 2.F to demonstrate compliance with the SO2 and NOx limits in the tables above (identified as Geneva Steel Processes "Secondary Sulfate" and "Secondary Nitrate").
3. Stack testing to update the relevant emission factors used above shall be performed as follows:
- 3.A Stack testing at the following units shall be conducted at least once every three years:
1. Powerhouse bypass stack #5
  2. Q-BOP secondary collection system stack
  3. Powerhouse baghouse stack
  4. LMF baghouse stack
  5. Each of the two Q-BOP package steam boilers.
- 3.B Stack testing at the following units shall be conducted at least once every two years:
1. Each of the two Q-BOP primary collection system stacks
  2. Three of the non-ejector-type stacks at the rolling mill soaking pits and reheat furnaces (three tests total in two years)
- 3.C This SIP does not require periodic stack testing for NOx at the chimney valve of the blast furnace stoves because a stack test has already been conducted. However, this is not intended to preclude requests for future stack tests.

4. ASTM tests for sulfur content in fuel to update the relevant emission factors used above shall be performed at least once a month.

1.b.D PROVO CITY POWER

1. NO<sub>x</sub> emissions from the operation of all engines and boilers at the plant shall not exceed 2.45 tons per day.

The following equation shall be used to calculate the daily emissions from each engine:

$$\begin{aligned} & (\text{Power production in kW-hr/day}) \times (\text{Emission rate in gram/kW-hr}) \\ & \times (1 \text{ lb}/453.59 \text{ g}) \times (1 \text{ ton}/2000 \text{ lbs}) = \text{tons/day} \end{aligned}$$

2. NO<sub>x</sub> emissions from the operation of all engines and boilers at the plant shall not exceed 254 tons per year.

The following equation shall be used to calculate the annual emissions from each engine:

$$\begin{aligned} & (\text{Power production in kW-hr/rolling 12-month period}) \times (\text{Emission rate in} \\ & \text{gram/kW-hr}) \\ & \times (1 \text{ lb}/453.59 \text{ g}) \times (1 \text{ ton}/2000 \text{ lbs}) = \text{tons/yr} \end{aligned}$$

3. Stack testing to show compliance with the above NO<sub>x</sub> emission limitations and to update the emission rate factor used in Conditions 1 and 2 above shall be performed as follows:

Boiler No. 4 and Boiler No. 5 shall each be tested every 8,760 hours of operation and at least once every five years.

Each engine shall be tested every 8,760 hours of operation and at least every five years.

4. Total plant emissions shall be the sum of emissions from each of engines and boilers. The emission rates to be used in the equations listed in conditions 1 and 2 above shall be the most recent stack test results. Power production rates shall be determined by Watt Hour meters on each of engine and boiler generators. The total amount of kilowatt-hours generated by each engine or boiler shall be recorded on both a daily and a monthly basis.

1.b.E SPRINGVILLE CITY CORPORATION

1. A. NO<sub>x</sub> emissions from the operation of all engines at the plant shall not exceed 1.68 tons per day.

Compliance with the daily mass emission limits shall be demonstrated by multiplying the most recent stack test results by the total hours of operation for each day. Hours of operation shall be determined by supervisor monitoring and maintaining of an operations log.

- B. NO<sub>x</sub> emissions from the operation of all engines at the plant shall not exceed 248 tons per year.

Compliance with the annual mass emission limit shall be demonstrated by multiplying the most recent stack test for each engine by the total hours of operation for the rolling 12-month period. Hours of operation shall be determined by supervisor monitoring and maintaining of an operations log.

2. Stack testing to show compliance with the emission limitations stated in the above condition shall be performed every three (3) years.