Iowa Department of Natural Resources
Construction Permit
For Emission Source

Permit Holder

Firm: Grain Processing Corporation

Responsible Party:

Carl Hayden
Senior Vice President

(319) 264-4638

Grain Processing Corporation
1600 Oregon Street
Muscatine, Iowa 52761

Contact:

Douglas J. LaFayette
Environmental Coordinator

(319) 264-4702

Grain Processing Corporation
1600 Oregon Street
Muscatine, Iowa 52761

Source

Source: Boilers: 1, 2, 3, 4, 6 and 7

Control Equipment: Mechanical Collectors: Boilers 1, 2, 3, 4, 6
Electrostatic Precipitator: Boiler 7

Location: Grain Processing Corporation
1600 Oregon Street
Muscatine, Iowa

DNR Project: 95-266
Plant No. 70-01-004

This equipment has been evaluated for conformance with rule 567 --- 22.3(1) of the Iowa Department of Natural Resources and found to have the potential to comply.

Christine Sondermann
Under the Direction of the Director of the Department of Natural Resources

September 18, 1995
Date

95-A-374
Permit Number

PERMIT CONDITIONS

The owner of the facility shall assure that the installation and operation and maintenance of this facility is in compliance with all of the following conditions.

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1. Departmental Review

This permit is issued based on information submitted by the applicant. **Any misinformation, false statements or misrepresentations by the applicant shall cause this permit to be void. In addition, the applicant may be subject to criminal penalties according to the Iowa Code Section 455B.146A.**

This permit is issued under the authority of the Iowa Administrative Code (IAC) 567-22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; IAC Chapters 20-30; and 40 C.F.R. Part 60 and has the potential to comply.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. This Department assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

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2. Construction

This permit shall become void if construction of the proposed project has not been started within eighteen (18) months after the date of the issuance of this permit and completed within (30) months after issuance of this permit.

It is the owner's responsibility to ensure that construction conforms to the plans and specifications and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created. Any changes made in the final plans and specifications of the proposed equipment shall require a supplemental permit.

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3. Transferability

This permit is not transferable from one piece of equipment to another, nor from one location to another, unless the equipment is portable. When portable equipment for which a permit has been issued is to be transferred from one location to another, the Department shall be notified in writing at least thirty (30) days prior to transferring to the new location. The owner will be notified at least ten (10) days prior to the scheduled relocation if the relocation will cause a violation of the National Ambient Air Quality Standards. In such case a supplemental permit will be required for additional control equipment or equipment modifications needed to meet the standards.

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4. Owner Responsibility

Issuance of this permit shall not relieve the owner of the responsibility to comply with provisions of the state implementation plan (SIP) and with the provisions of local, state, and federal laws, regulations, ordinances, and other requirements applying to this installation.

5. Disposal of Contaminants

Ultimate disposal of the air contaminant(s) collected by the control equipment shall meet all applicable rules administered by this Department.

6. Initial Compliance Testing

Pollutant	Testing Required	Test Method
TSP	No	N/A
PM_{10}	No	N/A
Opacity	No	N/A
SO_x	Yes	Continuous emission monitor, installed and certified pursuant to Condition 13
NO_x	No	N/A
VOC	No	N/A
CO	No	N/A

N/A = Not Applicable

7. Excess Emissions

Excess emissions during a period of startup, shutdown, or cleaning of control equipment is not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions. Cleaning of control equipment which does not require the shutdown of the process equipment shall be limited to one six-minute period per one-hour period. **An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A.** If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner or the process generating the emissions shall be shutdown within a reasonable period of time. An expeditious manner is the time necessary to determine the cause of the excess emissions and to correct it in a reasonable period of time. A reasonable period of time is eight hours plus the period of time required to shut down the process without damaging the process equipment or control equipment. A variance from this subrule may be available as provided for in Iowa Code Section 455B.143.

8. Emission Limits

Emissions shall not exceed the following:

Pollutant	lbs/hr	lb/million Btu	tons/year
TSP	202.3	0.238	N/A
PM10	N/A		N/A
SO_2	3,915 *	6	N/A
NO_x	N/A		N/A
VOC	N/A		N/A
CO	N/A		N/A

N/A = Not Applicable

* Beginning March 15, 1996, the combined total emission of sulfur dioxide from boilers 1, 2, 3, 4, 6 and 7 shall not exceed 3,915 pounds per hour, averaged over a 24-hour calendar day.

9. Operating Limits

Total emission of sulfur dioxide from boiler units 1, 2, 3, 4, 6 and 7 shall not exceed 3,915 pounds per hour, averaged over a 24-hour calendar day.

10. Source Emission Characteristics

Emission Point

The source shall be connected to the stack as designated below.

Height	Size
219 feet	180 in. inside diameter

Equipment

Mechanical Collectors: Boilers 1, 2, 3, 4 and 6
Electrostatic Precipitator: Boiler 7

11. Performance Tests

As specified in Permit Condition 6, the owner shall verify compliance with the emission limitations contained in Permit Condition 8 within sixty (60) days after achieving maximum production rate and no later than one hundred eighty (180) days after the initial startup date of the proposed equipment.

A pretest meeting shall be held at a mutually agreeable site no less than thirty (30) days prior to the date of each test. Each meeting shall be attended by representatives of the DNR central office, the owner and the testing firm, if any. It is the responsibility of the owner to coordinate and schedule each meeting.

The Department reserves the right to impose additional, different, or more detailed testing requirements. It is the responsibility of the owner to locate the test ports to be used during compliance testing.

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12. Operating Condition Monitoring

The owner shall maintain a file of computations to show the total hourly emission level. The owner shall submit quarterly excess emission reports as specified in 567 --- 25.1(6) of the Iowa rules. Oral and written excess emission reporting shall be required as specified in Chapter 24 of the Iowa rules.

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13. Continuous Emission Monitoring

A. General Requirements

GPC shall install, operate, maintain, and quality assure a continuous emission monitoring system (CEMS) for measuring sulfur dioxide emissions in units of pounds per hour, pounds per day, and tons per year on or before March 15, 1996. The CEMS shall consist of a sulfur dioxide continuous emission monitor, exhaust flow monitor, and data acquisition and handling system meeting the design and performance specifications found in 40 CFR 60, Appendix B. The CEMS shall be operated during any period that any fuel is combusted in any of these permitted boilers.

In addition to the provisions of 40 CFR Part 60, Appendix B, the performance specifications applicable to the CEMS required by this permit shall include a data capture requirement of 90% for the combined sulfur dioxide/flow monitoring system. All periods of data shall be represented. Missing data shall be provided by averaging the hour before and the hour after for any period of up to and including 8 hours. If the missing data period exceeds 8 hours, then the highest 24-hour average from the previous 90 valid operating days shall be used for the average for that 24-hour period.

13. **Continuous Emission Monitoring**

A. General Requirements (continued)

GPC shall correct all data to remove any negative bias in excess of 3% from the combined SO2/flow CEMS data using the bias adjustment factor (BAF). Negative bias is detected only when the absolute value of d (abs(dbar)) is greater than the absolute value of the confidence coefficient(cc), where (cc) is determined using equation 2.3 of Performance Specification 2. If negative bias is detected and the term abs(dbar) divided by CEM ≥ 0.03 (e.g. 3 percent negative bias or greater), then hourly (and subsequent daily and annual) data shall be corrected by the following bias adjustment factor:

$$BAF = 1 + \frac{|\bar{d}|}{CEM}$$

where,

d = the arithmetic mean of the difference obtained during the failed bias test:

$$\bar{d} = \frac{1}{n} \times \sum d_i$$

CEM = Means of the data values provided by the monitor during the failed bias test.

The hourly averages shall be calculated using the sum of all valid values during each one-hour period using the following equation:

$$E_{SO2} = (K)(C_{SO2})(Q)(BAF)$$

where,

E_{SO2} = hourly SO2 emissions, lbs/hr
C_{SO2} = Hourly average SO2 concentration, wet, ppm
Q = Hourly average volumetric flow rate, wet scfh
K = 1.66×10^{-7} lbs/scf-ppm
BAF = Bias Adjustment Factor as described in Condition 13A.
BAF = 1.0 if system has any positive bias or negative bias less than 3.0 %.

13. Continuous Emission Monitoring

A. General Requirements (continued)

The following equations shall be used in the averaging calculations:

Daily Emissions Average	=	sum(Hourly SO2 rate) for calendar day/24
Daily Emissions	=	sum(Hourly SO2 rate) for calendar day including data from the missing data routine, if total missing data periods for the boiler operating day is less than 8 hours.
Daily Emissions	=	highest daily emissions over last 90 boiler operating days if total missing data periods for the boiler operating day is greater than 8 hours.
Annual Emissions	=	sum(Daily Emissions) for calendar year

where,

Hourly SO2 rate includes all quality assured CEM data, any substituted hourly data determined by the missing data routine, and any other quality assured emissions data collected using approved reference methods.

The 24-hour averages shall be the sum of all valid daily hours of operation during each 24-hour period. One hour means any sixty-minute period beginning on the hour and each 24-hour period shall be defined as the time between 12:01 AM and 12:00 midnight.

GPC shall maintain an on-site record of CEMS-related data for not less than five years from origination. The record shall contain all hourly sulfur dioxide and flow rate measurements, any missing data substitution, subsequent aggregate and averaging calculations, results of quality assurance and averaging calculations, results of quality assurance activities, and all performance test audit results. Test records shall be made readily available for inspection by the Iowa Department of Natural Resources, the Environmental Protection Agency, or any authorized agent of these agencies.

GPC shall provide a written report or all exceedences of the aggregate hourly emissions average for boilers 1, 2, 3, 4, 6, and 7 no later than 30 days following the end of each calendar quarter on forms provided by the Department. In addition, GPC shall report the aggregate annual emissions for boilers 1,2 3, 4, 6, and 7 in each quarterly report, summarizing the year-end totals in the fourth quarter report.

13. Continuous Emission Monitoring (continued)

B. Initial Performance Tests

GPC shall successfully complete CEMS installation and certification tests in accordance with performance requirements found in 40 CFR 60, Appendix B, Performance Specification 6 except that the relative accuracy for the combined system shall be 12.5%. The results of these tests shall be provided to the Department on or before March 15, 1996. Certification tests shall include separate demonstrations on the sulfur dioxide monitor including a 7-day calibration error test (SO2 only) and a cylinder gas audit (SO2 only). The cylinder gas audit will be conducted at 3 points: 20-30%, 50%-60% and 80%-100% of the calculated span which is 125% of the maximum potential emission rate (MPER). The relative accuracy test shall be conducted at 80%-100% of the normal combined operating load of the boilers. Any calibration gases shall meet the traceability protocol of 40 CFR Part 60, Appendix F.

C. Ongoing Quality Assurance

GPC shall perform all quality assurance activities at the frequencies described in 40 CFR Part 60, Appendix F. These activities generally include a daily calibration erro. quarterly cylinder gas audit for three quarters and a relative accuracy test audit (RATA) during the remaining quarter. RATAs shall not be conducted in two successive quarters. Any calibration gases used for the daily calibrations or quarterly cylinder gas audits shall meet the traceability protocol requirements of 40 CFR Part 60, Appendix F. The criteria for excessive audit inaccuracy for the cylinder gas audits shall be 5% and 12.5% for the RATA. The annual RATAs will be conducted at 80%-100% of the normal load of the boilers. Subsequent to the initial performance testing, the calibration drift test on the flow monitor need only be conducted at load used to conduct the relative accuracy test audit.

14. **Notification, Reporting and Recordkeeping**

A. The owner shall furnish the DNR the following written notifications:

(1) The date construction, installation, or alteration is initiated postmarked within seven (7) days following initiation of construction, installation, or alteration.

(2) The date of intended startup at least ten (10) days before the equipment or control equipment involved is placed into operation.

(3) The actual date of startup postmarked within fifteen (15) days following the start of operation.

(4) The date of each compliance test required by Permit Condition 6 at least thirty (30) days before the anticipated compliance test date.

(5) The date of each pretest meeting at least fifteen (15) days before the proposed meeting date. The owner shall request a proposed test plan protocol questionnaire at least sixty (60) days prior to each compliance test date. The completed questionnaire shall be received by the DNR at least fifteen (15) days before the pretest meeting date.

(6) Transfer of equipment ownership within 30 days of the occurrence.

(7) Portable equipment relocation at least thirty (30) days before equipment relocation.

B. The owner shall furnish the DNR with the following reports:

(1) Oral

a. Excess emissions in accordance with 567 IAC 24.1.

(2) Written

a. A written compliance demonstration report for each compliance testing event, whether successful or not, postmarked not later than forty-five (45) days after the completion of the test period.

b. Operation of this source outside of those limits specified in Permit Condition 8 and according to the time limits set forth in 567 IAC 24.1.

14. Notification, Reporting and Recordkeeping (continued)

C. The owner shall send all notifications, reports and correspondence to:

Mr. Peter Hamlin, Chief
Air Quality Bureau
Iowa Department of Natural Resources
Wallace State Office Building
Des Moines, IA 50319-0034

D. The owner shall send correspondence concerning stack testing to:

Mr. David Phelps
Air Quality Bureau
Iowa Department of Natural Resources
Wallace State Office Building
Des Moines, IA 50319-0034
Telephone: (515) 281-8189

E. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives for a minimum of five (5) years from the date of recording.

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15. Permit Violations

Knowingly committing a violation of this permit may carry a criminal penalty of up to $10,000 per day fine and 2 years in jail according to Iowa Code Section 455B.146A.

END OF PERMIT CONDITIONS