PROPOSED TEST PLAN PROTOCOL

Company Name: _____

Address: _____

Name and Title of Contact: _____

Address of Contact: _____

Telephone Number of Contact: _____

Proposed Test Date: _____

Stack Test for Each Emission Point Will Start Between 6am and 6pm ☐ Please check box to confirm start time

Prior to conducting a stack test, written DNR approval is required to start a test outside the 6am to 6pm time frame.

Source Information

Type of Source: _____

Identification of Source to be tested: _____

Permit Number of Source: _____

Address of Source: _____

Initial Startup Date: _____

Testing Firm Information

Name of Firm: _____

Address: _____

Name and Title of Contact: _____

Telephone Number: _____

Number of Employees of Firm: _____

Number of Employees Engaged in Air Pollution Source Testing (Including Support Personnel): _____

Location and Description of Laboratory Facilities: _____

Subcontractor(s) Utilized by Firm for Source Testing Activities: _____

Number of Air Pollution Sources Previously Tested by Firm: _____

Types of Sources Previously Tested by Firm: _____

PERFORMANCE TEST INFORMATION

List all pollutants to be sampled.

	Pollutant	Number of Sampling Points	Total Time per Test Run	Number of Test Runs	Test Methods to be Used
1					
2					
3					
4					
5					

For particulate (PM), PM10, PM2.5 tests, indicate the length of each run to collect 7.62 milligrams, 4.32 milligrams, and 4.05 milligrams of sample respectively. Use the estimated emissions after control as the stack gas concentration.

When calculating the sample time, the length of each run should be such that a sample catches listed above will be collected. Any variation from this must be pre-approved by the Department. Should the sample catch be less than the lower detection limit (LDL) of 2.54 milligrams for PM, 1.44 milligrams for PM10, or 1.35 milligrams for PM2.5 after applying the above method, the test may be subject to rejection or the LDL sample weight may be assumed.

Include a description of any test procedures to be used in the conduct of the performance tests which differ from the specified method(s).

Use the space below for a drawing (or include separately) with the sampling location showing the stack or duct dimensions, air pollution control equipment, fans and location(s) of disturbances which affect the sampling location determination.

Axial fans and cyclone collectors generally cause flow conditions which are not suitable for testing and do not give reliable results. It is generally advisable to install flow straighteners in such situations. Please indicate if such problems are anticipated and what has been done to correct the flow problems prior to testing. Please refer to 40 CFR 60, Appendix A, Reference Method 2.

PROTOCOL SUPPLEMENT – OPERATING DATA

This form is to be filled out and returned with the test protocol.

Maximum Continuous Process Weight (Manufacturer's Rating): _____

Historical Average Process Weight: _____

Historical Maximum Process Weight: _____

Product Recycling Capability ☐ Yes ☐ No

Type and Sources of Fuels Normally Burned: _____

Type of Control Equipment: _____

Range of Pressure Drop Across Control Equipment: _____ Inches of Water

Average Pressure Drop _____ Inches of Water

Person Responsible For This Data: _____

Person Responsible For Collecting Process Data During Actual Testing:

_____

Complete and submit one of these forms for each test to be conducted. This information is especially important to determine to operating conditions of the equipment under which the tests will be conducted. The tests must be conducted while operating at maximum capacity or the highest capacity which this source will be operated. Failure to test at the permitted capacity may result in derating this source or retesting at the maximum capacity.

This information is also required to be submitted on the forms found at the end of the protocol package. These two forms, the Compliance Emission Test Operating Data and the Air Pollution Control Equipment Operating Data forms, must be filled out with the data collected on the actual date of the tests. Failure to complete the forms on the day of the testing may be cause for rejecting the tests.

SAFETY CONCERNS

List any special safety concerns, including possible hazardous chemical exposures, at your facility. This should include the area near the process being tested as well as the sampling location. **Also include a list of personal safety equipment that will be required to audit the testing.** Unexpected hazardous conditions are grounds for canceling testing.

PROTOCOL SUPPLEMENT

1. Copies of current calibration data must be available to the observer prior to the beginning of the test. This calibration data will include, but is not necessarily limited to the meter box, pitot tubes, and temperature gauges. If 0.84 is assumed for the pitot tube coefficient, it must be documented that the equipment meets the design criteria.

2. All equipment must be in good working order prior to arriving on site. Except for extraordinary circumstances, delays solely to broken equipment may result in the test being canceled by the observer. All glassware must be clean and free of contamination especially for SO2, HCl and similar tests.

3. Unless specifically mentioned to the contrary in the test method or agreed to in writing in a pretest conference, glass-lined probes must be used for all tests. Spare liners must be available in case one or more is broken. The breaking of a glass liner is not an acceptable excuse for using steel liners. Particular attention should be paid to the probe and filter box heating elements.

4. Enough spare equipment should be on hand to replace any that should break down. If necessary this should include consoles. Delays due to broken equipment may be cause for canceling the test.

5. All members of the test crews should be familiar with the test methods in order to conduct the tests in strict accordance with the test methods.

6. No variations from the reference methods will be accepted in the field unless agreed to by the observer or by prior written agreement. The determination of whether the departure from the method will affect the test results will be made by the observer.

7. The Air Quality Bureau must be notified in writing by the affected facility at least 30 days prior to conducting any test that will be submitted for a compliance demonstration. This notification must be made by the source, not the consultant or contractor. Such notice shall include the time, the place, the name of the person who will conduct the tests and other information as required by the department. A representative of the department shall be permitted to witness the tests. Failure to notify the appropriate staff or failure to start a compliance test between the hours of 6am and 6pm, may result in rejection of the testing. Please call Mark Fields at (515) 343-6589 for questions or further information. Notifications and test protocols can be mailed to: Iowa Department of Natural Resources, Stack Test Coordinator, 6200 Park Ave Ste 200, Des Moines IA 50321.

8. The two forms attached at the end of this protocol must be correctly and accurately filled out by the responsible plant personnel. One form concerns the production levels during the test. Tests are to be conducted at full capacity. If the tests are conducted at less than full capacity, the source may be limited to this level of production. The other form contains control equipment operating data. The appropriate section should be filled out. If the source does not have any control equipment, this should be indicated on the form. Both forms must be signed by a representative of the facility.

9. In accordance with 567 IAC 21.10(7), submit a written compliance demonstration report for each compliance testing event, whether successful or not, postmarked no later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirements shall be met.

The following information shall be provided:

1. Sampling Equipment Information
   The manufacturer and model of the sampling equipment to be used by the tester for the performance tests, along with a description of any equipment which *may* differ from that required by the specified methods.

2. Test Procedures
   A description of any test procedures to be used in the conduct of the performance tests which *may* differ from the specified method(s).

3. Analytical Procedures
   A description of any analytical procedures which differ from the specified method(s).

4. Data Sheets
   A sample of all field data sheets which do not provide the data shown on the example sheets in. 40 CFR 60 for the specified method(s).

5. Air Pollution Control Equipment
   A description of the air pollution control equipment including as a minimum the following:
   a. Types and manufactures of all control equipment
   b. Design or guarantee efficiency
   c. Design gas volume at full load (acfm);
   d. Design pressure drop;
   e. Description of any preconditioning equipment;
   f. Normal operating conditions of air pollution control equipment;
   g. Normal maintenance schedule on control equipment, such as cleaning, replacement of components, checking for leaks, and repairs;
   h. Description of fly ash handling and disposal system; and
   i. Any problems with air pollution control equipment performance, operation, and maintenance.

SOURCE TEST REPORT FORMAT

I. **Cover** Should Indicate the name and location of the plant, the specific source tested, the name and address of the testing firm (or agency), and the month and year of the tests.

II. **Certification** A page including a certification by the test team leader that he is the person responsible for the test data, and one by the reviewer of the report (normally the supervisor of the team leader) attesting to the authenticity and accuracy of the report.

III. **Table of Contents**

IV. **Introduction** Pertinent background information should be presented in this section. This information shall include, but not be limited to the following:
1. Name, address, and owner of plant;
2. Test purpose;
3. Name and address of testing organization;
4. Test dates;
5. Pollutants tested;
6. Names of persons present for tests (industry and agency); and
7. Any other important background information

V. **Summary of test results** A summary of the test result: necessary to evaluate the process with respect to the applicable emission standard(s) should be presented in this section. This information shall include, but not be limited to, the following:
1. A summary of the emission results;
2. Allowable emissions;
3. Isokinetic sampling rates, when applicable;
4. The operating level of the process during the tests;
5. A description of the collected samples; and
6. Discussion of errors, both real and apparent, in the tests.

VI. **Facility operation during testing** This section shall contain a description of the facility, including, but not limited to, the following:
1. General description of the facility, including the air pollution control equipment, and the process principle;
2. A discussion of the maximum and normal operating conditions;
3. Presentation of the process data for the tests, with calculations where necessary to show the production or burning rates, to demonstrate that the operating conditions are sufficiently representative of those required for testing. Calculation may be included in the Appendix;
4. Process and control equipment flow diagram; and
5. Any changes in operating conditions from those previously agreed upon by the source and agency.

VII. **Sampling and analytical procedures** A description of the sampling and analytical methods should be presented in this section. The information shall include, but not be limited to, the following:
1. A description of the sampling location(s) and sampling points;
2. Schematic drawings of the facility showing sampling location(s), major and minor flow disturbances, and stack or duct cross section(s) with the dimensions indicated;
3. A description of the sampling equipment;
4. Schematic drawings of the sampling trains (may be included in the Appendix);
5. A description of the sampling procedures, with a discussion of deviations from the standard methods, along with the sampling times;
6. A brief description of the analytical procedures, with a discussion of deviations from the standard methods; and
7. A description of the methods employed for other types of sampling and analyses, such as fuel.

VIII. **Appendix**

1. A summary of all data used in the calculations.
2. Calculations for all data submitted.
3. Copies of **all raw** field data sheets, (initialed by observer, where applicable) including those indicating sampling point locations,
4. Laboratory report, complete with analytical data sheets and chain of custody list.
5. Production and/or operational data, signed by a plant official if provided by the source.
6. Calibration procedures and work sheets for sampling equipment.
7. Copies of calibration records for plant or process Instrumentation.
8. Pertinent correspondence concerning the tests.
9. Any other information necessary to assist the agency in making a determination of compliance.

COMPLIANCE EMISSION TEST OPERATING DATA

Owner: _____ **Date:** _____

Source: _____ **Permit #:** _____

Maximum Continuous Process Rate: (Manufacturer's Rating) _____

Historical Average Process Rate: _____

Historical Maximum Process Rate: _____

Types and Sources (if any) of Fuels Normally Burned: _____

Type of Fuel Burned During Test: _____

Approximate Quantities of Fuels used Annually: _____

Recycling Capability: ☐ YES ☐ NO

Recycling in Progress: ☐ YES ☐ NO

Process Data During Runs

	Run 1	**Run 2**	**Run 3**
Process Rate wet** (gal/hr, lb/hr, tons/hr, ect.)			
% Moisture			
Process Rate dry** (gal/hr, lb/hr, tons/hr, ect.)			
How Process Rate was Determined			

**Please indicate in the same units as the historical information

Person Responsible for Data: _____

Signature: _____

Title/Position: _____

AIR POLLUTION CONTROL EQUIPMENT OPERATING DATA

Plant _____ Location _____

Source Type _____ Rated Production _____

Date _____ Time _____ Actual Production _____

Air Flow Data _____ Run No. _____

Mechanical Collector:

Tube Dia. _____ in. Number of Tubes _____ Design Δp _____ in. H_2O Gas Temp _____ °F

Observed Δp _____ in H_2O Design cfm/tube @ Observed Δp _____ @ _____ °F

Fan Rated H.P. _____ Operating Volts _____ Operating Amps _____

Electrostatic Precipitator

Field No.	Primary Voltage (volts)	Primary Current (amps)	Secondary Voltage (KV)	Secondary Current (ma)	Spark Rate (per min)

Scrubber:

Type _____ Δp (across scrubber) _____ in H_2O

Fan Rated HP _____ Operating Volts _____ Operating Amps _____

Liquid Circulation Rate _____ gal/min. % Make-up _____ Blowdown _____ gpm

Scrubbing Water Change Interval _____

Settling Tank Cleaning Interval _____

Baghouse:

Pressure-Positive _____ Negative _____ No. Compartments _____

Type Cleaning _____ Clean Cycle _____ min

Avg. Baghouse Δp _____ in H_2O Δp Range _____

Fan: Rated H.P. _____ Operating Volts _____ Operating Amps _____

Cyclone:

Type _____ Δp _____ in H_2O Diameter _____

Fan Rated HP _____ Operating Volts _____ Operating Amps _____

Person Responsible for Data: _____

Signature: _____

Title/Position: _____

*Averages of operating data taken during actual test run unless requested otherwise.