

# Air Quality Stack Testing and Permit Applications Training Session

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## Agenda:

- ▶ MPCA Stack Test and Monitoring Program Updates and Expectations
  - ▶ 1pm – 1:45pm
- ▶ Break 1:45-2:00
- ▶ Changes to the DRF-1 form
  - ▶ 2:00 – 2:45
- ▶ Break 2:45 – 3:00
- ▶ Changes to Permit Application Forms (CD-01)
  - ▶ 3:00 – 3:30
- ▶ Break 3:30 – 3:40
- ▶ Application Completeness Checklists
  - ▶ 3:40 – 4:10
- ▶ Questions 4:10 – 4:30

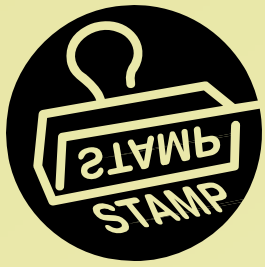


# **MPCA Stack Test and Monitoring Program: Updates and Expectations**

## **MPCA Speakers:**

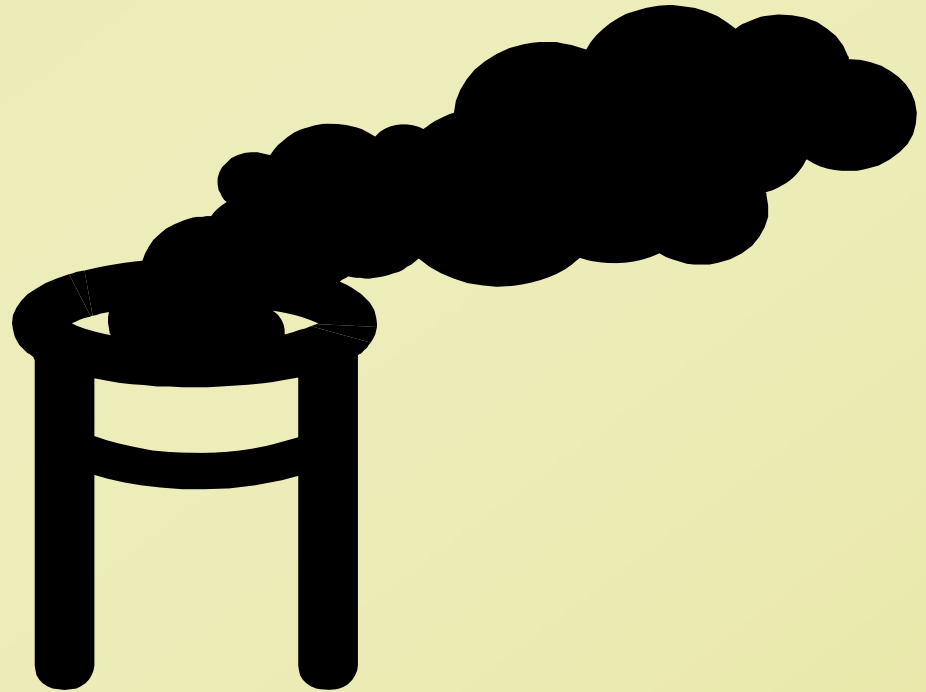
Curt Stock

Andy Place



# S.T.A.M.P.

- ▶ **Stack**
- ▶ **Testing**
- ▶ **And**
- ▶ **Monitoring**
- ▶ **Program**



# S.T.A.M.P. Staff

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- ▶ Shanda Fisher – Metro, Asphalt Plants
- ▶ Curt Stock – Metro, Ethanol
- ▶ Sean O'Connor – Southern, Non-Metallic
- ▶ Andy Place – Northern, Waste Combustors

<http://www.pca.state.mn.us/air/performanceetest.html#staff>

# Submittal Review

- ▶ ~1000 Submittals for the Team to review/year
  
- ▶ Results of those Submittals are used by:
  - ▶ Enforcement Staff
  - ▶ Permitting Staff
  - ▶ Policy Writers
  - ▶ Modeling Staff
  - ▶ EPA, other agencies and outside parties
  
- ▶ Submittal review ensures that data is correct and valid





# S.T.A.R.R.



▶ **Stack**

▶ S.T.A.R.R. = reports “in house” > 75 days

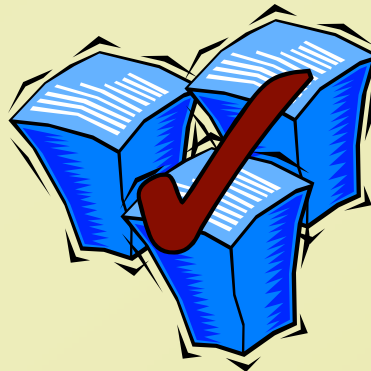
▶ **Test**

▶ **GOAL:** to eliminate S.T.A.R.R. by March 31, 2008 and maintain zero S.T.A.R.R.

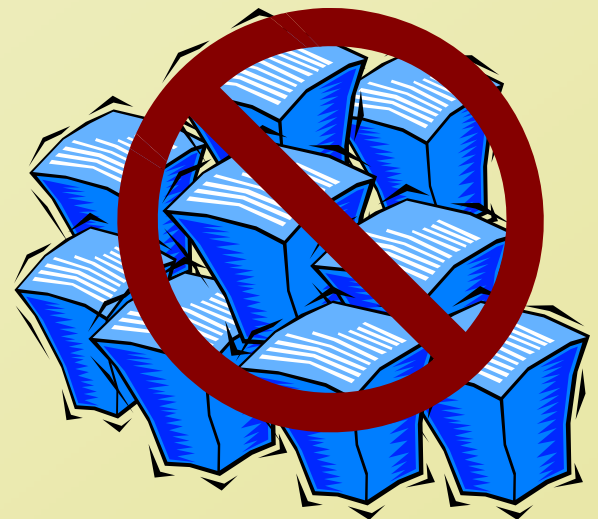
▶ **Air**

▶ **Report**

▶ **Reserve**

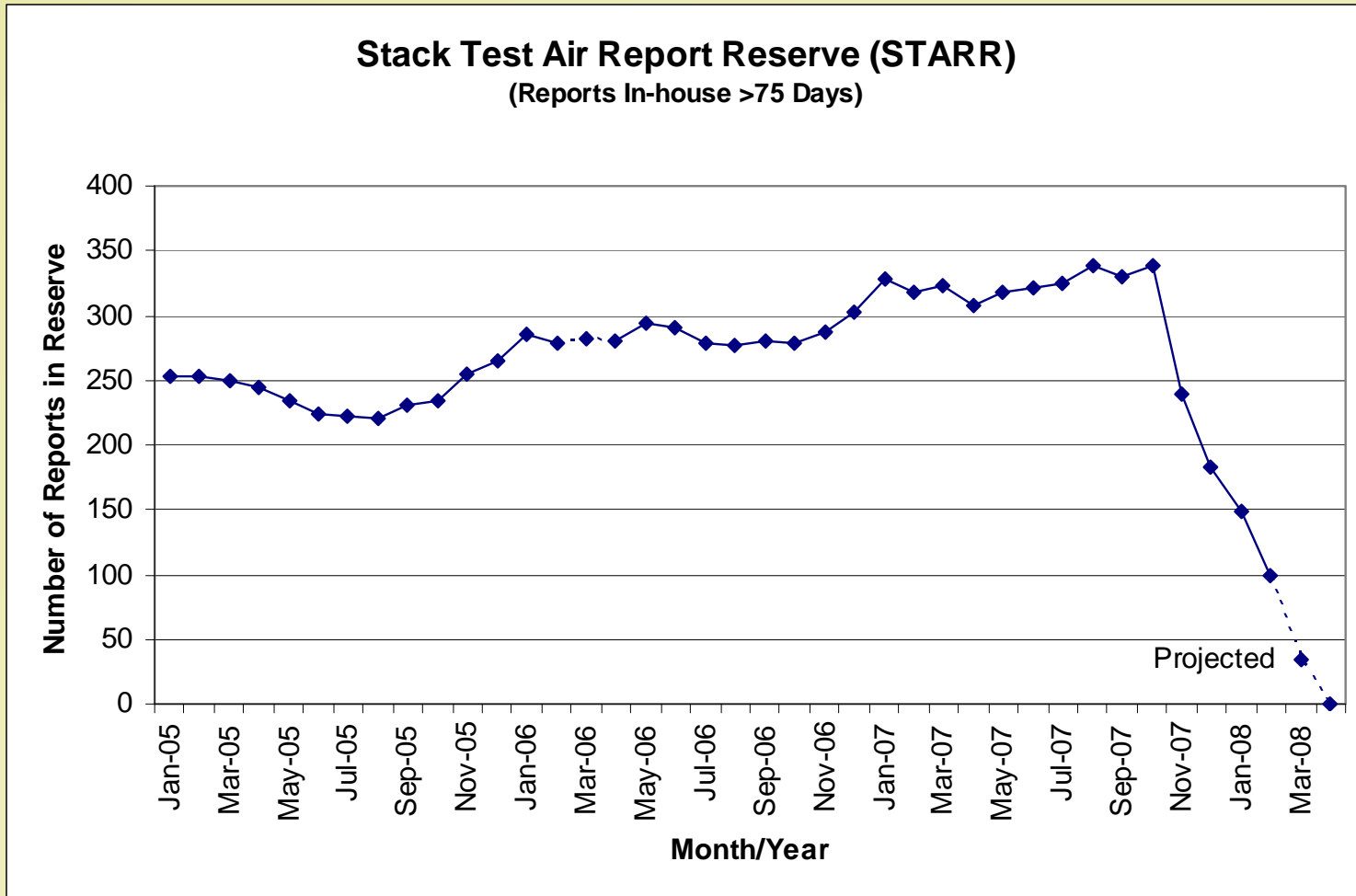


Reports “in house” < 75 days

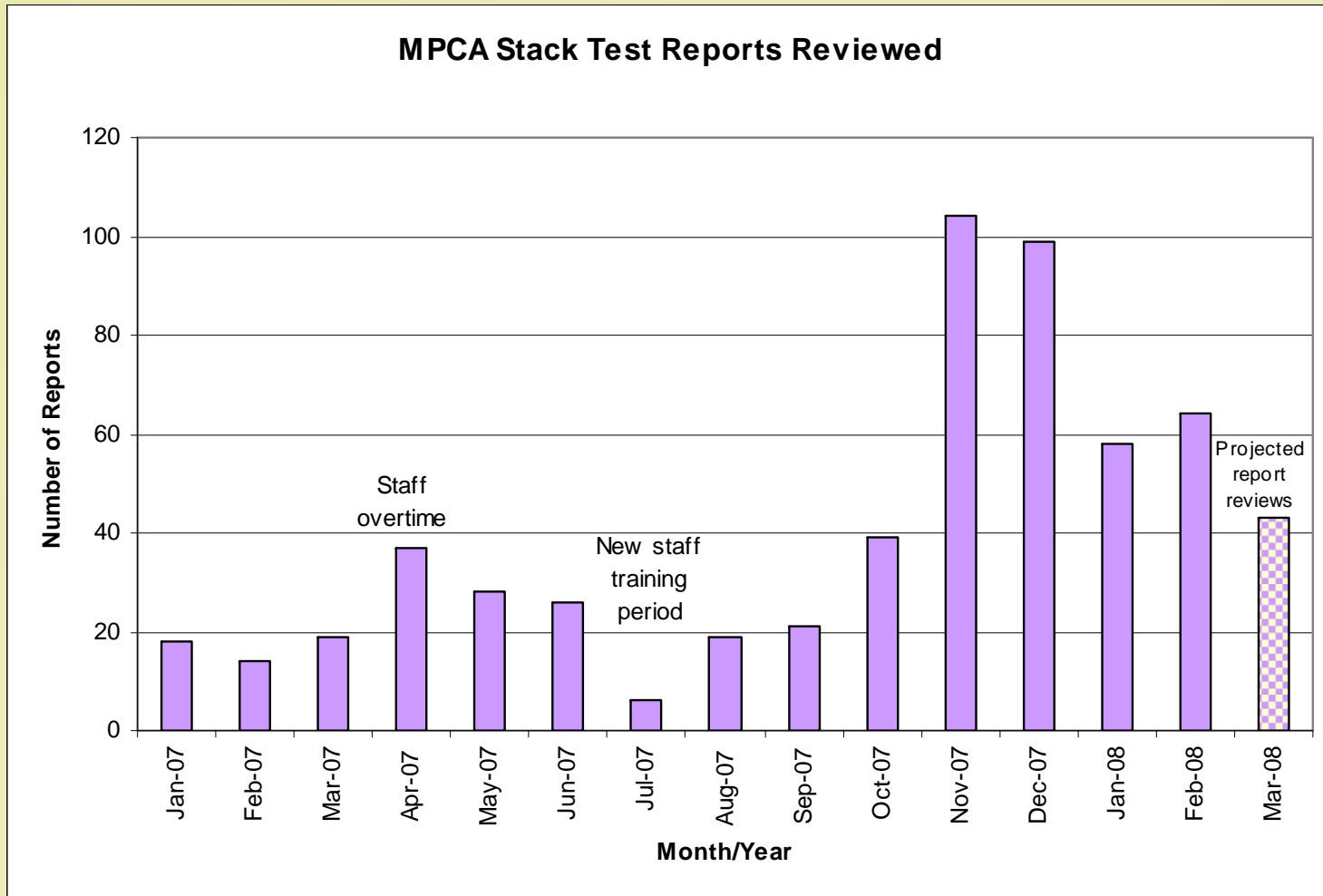


Reports “in house” > 75 days <sup>6</sup>

# Historical S.T.A.R.R.



# Stack Test Report Reviews

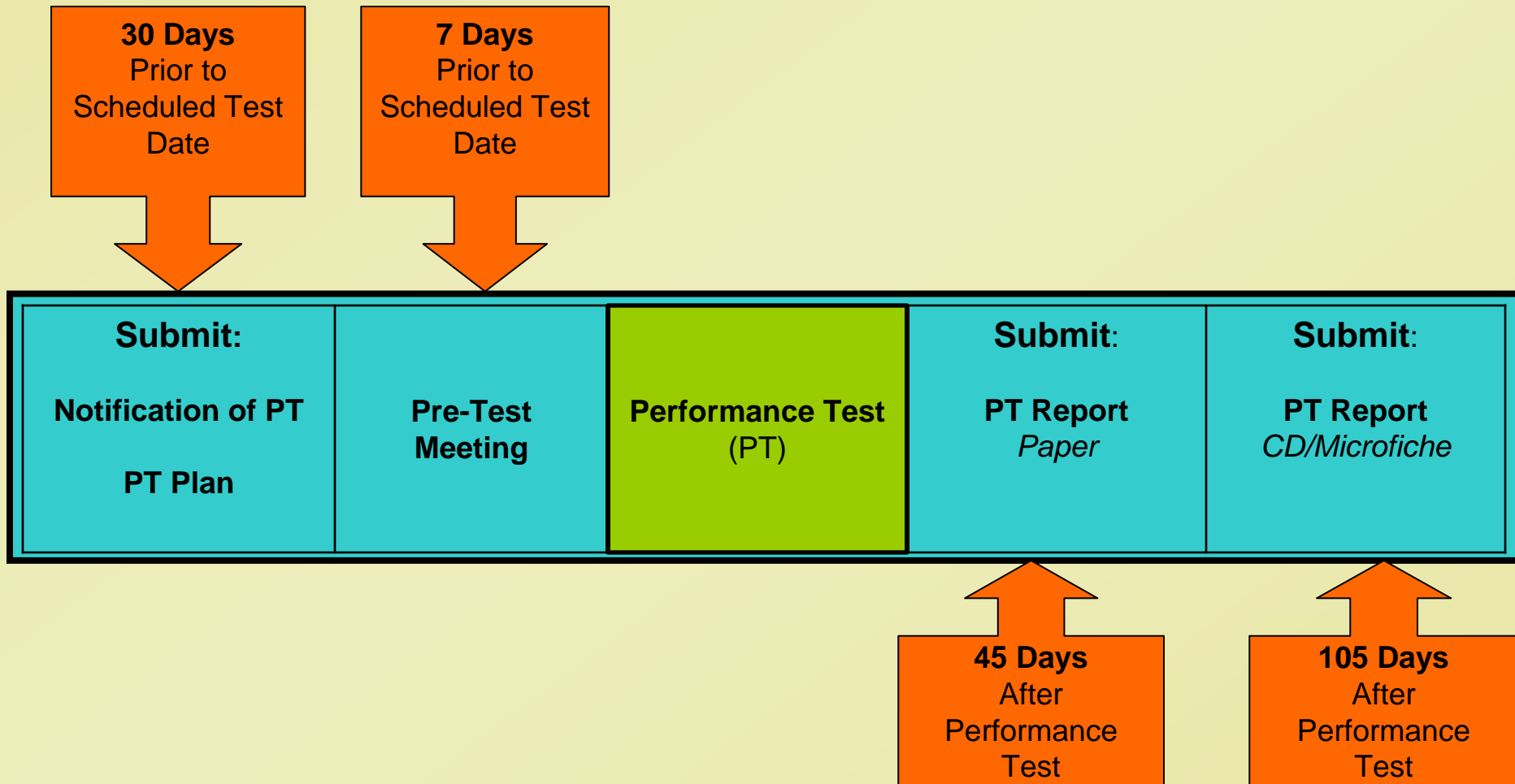


# Performance Test Timeline

- ▶ **Notification & Test Plan Submittal**
  - ▶ 30 days prior to test
- ▶ **Pre-Test Meeting**
  - ▶ 7 days prior to test
- ▶ **Test Plan Approval Letter (TPAL)**
  - ▶ Emailed by MPCA after pretest meeting
- ▶ **Test Day**
- ▶ **Test Report Submittal**
  - ▶ 45 days after last day of test (paper copy)
- ▶ **Test Report Submittal**
  - ▶ 105 days after last day of test (cd copy)



# Performance Test Timeline



# Performance Test Timeline

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- ▶ Federal Rules may set alternate requirements for test plan and test report deadlines
- ▶ MPCA cannot change deadlines set by federal requirements

# Test Plan

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## ▶ Test Plan Development

- ▶ Test Plan must be complete and easy to understand
  - ▶ Requirements for content listed in 7017.2030 subp. 3
- ▶ Use all the correct information for the tested Unit with the limit as stated in the permit. This includes:
  - ▶ Designators (EU/SV/GP/CE)
  - ▶ Rule Citations
  - ▶ All appropriate limits
    - Limits for a single unit may exist in more than one location in the permit
- ▶ Where can you find the permit?
  - ▶ <http://www.pca.state.mn.us/air/permits/issued/index.html>

# Test Plan

The screenshot shows a web browser window titled "Air Permits Issued in Minnesota - Minnesota Pollution Control Agency - Windows Internet Explorer". The address bar shows the URL <http://www.pca.state.mn.us/air/permits/issued/index.html#disclaimer>. The page content includes the MPCA logo, a navigation menu with links like "Home", "Site Index", "Glossary", "What's New", "Ask MPCA", and "Visitor Center", and a search box. The main heading is "Air Permits Issued in Minnesota". The page text explains that the page contains permits issued by the MPCA, identifies units at each facility, and lists conditions for permit amendments. A sidebar on the left lists "Permits:" and "Facilities A - Z" with various sub-links. A right-hand sidebar contains a list of links: "Permit numbers", "Permit types", "SIC codes", "Questions/Information", and "Disclaimer". The footer of the page includes a note about PDF documents and a "Local intranet" indicator.

# Test Plan

## Permit Page

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**COMPLIANCE PLAN CD-01**

**Facility Name:**  
**Permit Number:**

**Subject Item:** EV 007 Boiler 7  
**Associated Items:** CE 007 Other  
 CE 008 Catalytic Converter - High Efficiency  
 CE 009 Electrostatic Precipitator - High Efficiency  
 MF 004 NOx monitor  
 MF 005 O2 monitor  
 MF 006 SO2 monitor  
 MF 007 Opacity monitor  
 MF 008 Flow Monitor  
 MF 009 Ammonia monitor  
 SV 001 Boilers 2, 3, 4, and 7

	NO <sub>x</sub> / SO <sub>2</sub>	Type	Citation	Requirement
1.0		CD	Nil	EMISSION LIMITS
2.0		LIMIT	Title I Condition, BACT emission limit, also meets the requirements of 40 CFR 60.43a(1)(1)	Total Particulate Matter, less than or equal to 0.03 Billion lb/ Btu heat input when burning solid, liquid or gaseous fuel.
3.0		LIMIT	40 CFR 60.43a(1)(2) and 40 CFR 60.43a(1)	Total Particulate Matter, less than or equal to 1 percent of the potential particulate concentration when combusting solid fuel. Compliance with the particulate matter emission limitation constitutes compliance with the proposed reduction requirement.
4.0		LIMIT	Title I Condition, BACT emission limit	Particulate Matter < 10 micron, less than or equal to 0.03 Billion lb/ Btu heat input
5.0		LIMIT	40 CFR 60.43a(2)	Opacity, less than or equal to 20 percent on a 6-minute average, except for one 6-minute period per hour of not more than 27 percent opacity.
6.0		LIMIT	Title I Condition, limit based on reactor potentials; SO <sub>2</sub> emissions to less than significant net emission increase levels as defined by 40 CFR 52.21	Sulfur Dioxide, less than or equal to 30 tons/year, based on a 12 month rolling term.
7.0		LIMIT	40 CFR 60.43a(3)(2)	Sulfur Dioxide, less than or equal to 1.2 Billion lb/ Btu heat input when burning biomass, based on a 30 day rolling average.
8.0		LIMIT	40 CFR 60.43a(3)(2)	Sulfur Dioxide, less than or equal to 0.2 Billion lb/ Btu heat input when burning natural gas, based on a 30 day rolling average.
9.0		LIMIT	Title I Condition, BACT Emission Limit, also meets the requirements of 40 CFR 60.44a	Nitrogen Dioxide, less than or equal to 0.15 Billion lb/ Btu heat input when burning biomass fuel, based on a 30 day rolling average.
10.0		LIMIT	Title I Condition, BACT Emission Limit, also meets the requirements of 40 CFR 60.44a	Nitrogen Dioxide, less than or equal to 0.11 Billion lb/ Btu heat input when burning natural gas, based on a 30 day rolling average.
11.0		EQ	Title I Condition, BACT Emission Limit, also meets the requirements of 40 CFR 60.44a	Nitrogen Dioxide: When both biomass and natural gas are burned together, or both are burned during the previous 30 day period, the NO <sub>x</sub> emission limit shall be determined by the following equation:  $E_N = (0.15x + 0.11y)(1000)$ <p>where:            E<sub>N</sub> = the NO<sub>x</sub> emission limit in lb/ton/HR for the past 30 days            x = percentage of total heat input derived from biomass during the past 30 days            y = percentage of total heat input derived from natural gas during the past 30 days</p>
12.0		CD	40 CFR 60.44a(3)	Nitrogen Dioxide, less than or equal to 1.6 lb/MWh hour, based on a 30 day rolling average. Compliance will be demonstrated according to 40 CFR 60.47a(6).

# Test Plan

## Tested Unit Designator



MINNESOTA POLLUTION CONTROL AGENCY  
AIR QUALITY  
520 LAFAYETTE ROAD  
ST. PAUL, MN 55155-4104

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### COMPLIANCE PLAN CD-01

Facility Name:

Permit Number:

Subject Item: **EU 007 Boiler 7**

Associated Items:

- CE 007 Other
- CE 008 Centrifugal Collector - High Efficiency
- CE 009 Electrostatic Precipitator - High Efficiency
- MR 004 NOx monitor
- MR 005 O2 monitor
- MR 006 SO2 monitor
- MR 007 Opacity monitor
- MR 008 Flow Monitor
- MR 009 Ammonia monitor
- SV 001 Boilers 2, 3, 4, and 7

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION LIMITS
2.0		LIMIT	Title I Condition, BACT emission limit, also meets the requirements of 40 CFR 60.42(a)(1)	Total Particulate Matter: less than or equal to 0.03 lbs/million Btu heat input when burning solid, liquid or gaseous fuel.

# Test Plan

## Total Particulate Limit

	NC/CA	Type	Citation	Requirement
1.0		GD	hdr	EMISSION LIMITS
2.0		LIMIT	Title I Condition, BACT emission limit, also meets the requirements of 40 CFR 60.42a(a)(1)	Total Particulate Matter: less than or equal to 0.03 lbs/million Btu heat input when burning solid, liquid or gaseous fuel.
3.0		LIMIT	40 CFR 60.42a(a)(2), and 40 CFR 60.46a(a)	Total Particulate Matter: less than or equal to 1 percent of the potential combustion concentration when combusting solid fuel. Compliance with the particulate matter emission limitation constitutes compliance with this percent reduction requirement.
4.0		LIMIT	Title I Condition, BACT emission limit	Particulate Matter: less than or equal to 0.03 lbs/million Btu heat input
5.0		LIMIT	40 CFR 60.42a(h)	Opacity: less than or equal to 20 percent on a 6-minute average, except for one 6-minute period per hour of not more than 27 percent opacity.
6.0		LIMIT	Title I Condition: limit taken to control potential SO <sub>2</sub> emissions to	Sulfur Dioxide: less than or equal to 39 tons/year, based on a 12 month rolling sum

# Test Plan

## Total Particulate Citation

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION LIMITS
2.0		LIMIT	Title I Condition, BACT emission limit, also meets the requirements of 40 CFR 60.42a(a)(1)	Total Particulate Matter: less than or equal to 0.03 lbs/million Btu heat input when burning solid, liquid or gaseous fuel.
3.0		LIMIT	40 CFR 60.42a(a)(2), and 40 CFR 60.46a(a)	Total Particulate Matter: less than or equal to 1 percent of the potential combustion concentration when combusting solid fuel. Compliance with the particulate matter emission limitation constitutes compliance with this percent reduction requirement.
4.0		LIMIT	Title I Condition, BACT emission limit	Particulate Matter < 10 micron: less than or equal to 0.03 lbs/million Btu heat input
5.0		LIMIT	40 CFR 60.42a(b)	Opacity: less than or equal to 20 percent on a 6-minute average, except for one 6-minute period per hour of not more than 27 percent opacity.
6.0		LIMIT	Title I Condition: limit taken to restrict potential SO2 emissions to less than significant net emission	Sulfur Dioxide: less than or equal to 39 tons/year, based on a 12 month rolling sum.

# Test Plan

## PM10 Limit

	NGI/CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION LIMITS
2.0		LIMIT	Title I Condition, BACT emission limit, also meets the requirements of 40 CFR 60.42a(a)(1)	Total Particulate Matter: less than or equal to 0.03 lbs/million Btu heat input when burning solid, liquid or gaseous fuel.
3.0		LIMIT	40 CFR 60.42a(a)(2), and 40 CFR 60.46a(a)	Total Particulate Matter: less than or equal to 1 percent of the potential combustion concentration when combusting solid fuel. Compliance with the particulate matter emission limitation constitutes compliance with the opacity coverage requirement.
4.0		LIMIT	Title I Condition, BACT emission limit	Particulate Matter < 10 micron: less than or equal to 0.03 lbs/million Btu heat input
5.0		LIMIT	40 CFR 60.42a(b)	Opacity: less than or equal to 20 percent on a 5-minute average, except for one 6-minute period per hour of not more than 27 percent opacity.
6.0		LIMIT	Title I Condition: limit taken to restrict potential SO <sub>2</sub> emissions to less than significant net emission increase levels as defined by 40	Sulfur Dioxide: less than or equal to 39 tons/year, based on a 12 month rolling sum.

# Test Plan

## PM10 Citation

	NG/CA	Type	Citation	Requirement
1.0		CD	hdr	EMISSION LIMITS
2.0		LIMIT	Title I Condition, BACT emission limit, also meets the requirements of 40 CFR 60.42a(a)(1)	Total Particulate Matter: less than or equal to 0.03 lbs/million Btu heat input when burning solid, liquid or gaseous fuel.
3.0		LIMIT	40 CFR 60.42a(a)(2), and 40 CFR 60.46a(a)	Total Particulate Matter: less than or equal to 1 percent of the potential combustion concentration when combusting solid fuel. Compliance with the particulate matter emission limitation constitutes compliance with this percent reduction requirement.
4.0		LIMIT	Title I Condition, BACT emission limit	Particulate Matter < 10 micron: less than or equal to 0.03 lbs/million Btu heat input
5.0		LIMIT	40 CFR 60.42a(b)	Opacity: less than or equal to 20 percent on a 6-minute average, except for one 6-minute period per hour of not more than 27 percent opacity.
6.0		LIMIT	Title I Condition: limit taken to restrict potential SO2 emissions to less than significant net emission increase levels as defined by 40 CFR 52.21.	Sulfur Dioxide: less than or equal to 39 tons/year, based on a 12 month rolling sum.

# Test Plan

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## ▶ Test Plan Development

▶ <http://www.pca.state.mn.us/air/ptest-planning.html>

▶ Test Plan Completeness Criteria (TPCC)

▶ Example Test Plans



# Test Plan

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- ▶ Most information in the Test Plan is required near the beginning of the report
- ▶ A good test plan leads to a good report

# Test Plan

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- ▶ General Information
  - ▶ Date of test plan origination/revision
  - ▶ Proposed test dates
  - ▶ Reason for testing
  - ▶ Testing company and contact information

# Test Plan

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## ▶ Facility Information

- ▶ Name and address of emission facility
- ▶ Name and contact information of person responsible for receiving correspondence regarding testing. Include email address
- ▶ Permit #/Facility ID # (i.e. 137000006-002)
- ▶ AQ File Number (i.e. AQ#136)

# Test Plan

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- ▶ Testing Requirements
  - ▶ Identification of emission unit(s) (i.e. EU 000, SV 000, CE 000) to be tested
  - ▶ Pollutants to be tested with emission limits and applicable regulations citations as stated in your permit
  - ▶ Sample Location Drawing
  - ▶ Description of procedure for fuel sampling and analysis, where applicable

# Test Plan

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## Operating Conditions

- ▶ Description of process and air pollution control devices including emission units to be tested and operating conditions targeted for the test
  - ▶ **Do not simply write boilerplate language like “90% of worst case conditions”**
  - ▶ **Provide actual rates for emission unit and control equipment**
  - ▶ **Explain justification for worst case conditions**

# Test Plan

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## ▶ Test Methods

- ▶ List of test methods to be used to determine the emissions rate of each pollutant.
- ▶ Brief description of planned deviations from sampling procedures and analytical methods, when applicable.
- ▶ If using methods other than US EPA reference methods you are requested to submit adequate documentation (i.e. QA/QC, MDL, expected pollutant concentration, etc.).

# Pretest Meeting

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- ▶ **Approximately 1 week prior to test...Pretest Meeting**
  - ▶ The facility is ultimately responsible for completing the pretest meeting
- ▶ **Pre-Test Meeting Checklist**
  - ▶ <http://www.pca.state.mn.us/air/ptest-planning.html>
- ▶ **Discuss the Test**
  - ▶ Operating rates
  - ▶ Control equipment rates
  - ▶ Deviations from test methods
  - ▶ Ultimately want to avoid misinterpretations and assumptions that lead to problems during or after the test

# Performance Test Requirements

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- ▶ When testing, if problems are experienced or you deviate from the test plan, contact the MPCA to determine how to proceed.

# Testing Responsibility

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- ▶ Any periods of noncompliance with emission limits must be reported to the MPCA, this includes periods of noncompliance during engineering tests



# Testing Responsibility

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- ▶ The owner or operator of an emissions facility is responsible for submitting a complete test report as defined by Minn. R. 7017.2035.
- ▶ A test report may be rejected if it is deemed incomplete.
- ▶ The test must be representative of operating conditions at your facility

# Setting Operating Limits

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- ▶ When are they set?
- ▶ How are they set?



# Setting Operating Limits

Based on Minn. R. 7017.2025, subp. 3. the test must be completed at  $\geq 90\%$  of worst case condition:

If 90% is not achieved, a limit is set:

<b>Tested Rate vs. Emission Limit</b>	<b>Process Operating Limit</b>
$\geq 80\%$ of emission limit	At rate operated at during the test
$\leq 80\%$ of emission limit	10% increase from rate operated at during the test

# Setting Operating Limits

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- ▶ Agency always has discretion to deviate from Minn. Rule 7017.2025, subp. 3
  - ▶ Reasons may include:
    - ▶ Previous Test Results
    - ▶ Enforcement History
    - ▶ Permit Concerns
    - ▶ Other Rules or Regulations

# Setting Operating Limits

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## Control Equipment

- ▶ The 90% of worst case condition does not apply to control equipment.
- ▶ CE must be operated at permit limits or rate established in test plan often from manufacturer specifications.
  - ▶ If not, a limit is set/reset based on rate experienced during test
  - ▶ A 10% leniency is not typically applied to CE
  - ▶ Discuss the exact nature of your CE in the test plan and during the pretest meeting

# Test Report



- ▶ Test reports due 45 days after test completion
- ▶ CD-ROM copy of test due 105 days after test completion
  - ▶ Must be exact duplicate of test report including all required certification signatures
- ▶ This standard applies even if other rules allow for an extended period of time
- ▶ Submittals past 45 days should be prearranged with MPCA

# Test Report

## Performance Test Report Completeness Criteria (PTRCC)

<http://www.pca.state.mn.us/publications/ptrcc01.doc>

	<b>Performance Test Report Completeness Criteria</b>	FORM-PTRCC01
	Minnesota Pollution Control Agency 520 Lafayette Rd. N. Saint Paul, MN 55155-4194 (651)-296-6300	03/24/06

The owner or operator of an emissions facility is responsible for submitting a complete test report as defined by Minn. R. 7017.2035. A test report may be rejected if it is deemed incomplete. As a result, this form is designed to ensure that your submittal is complete.

- 1) Facility Name: \_\_\_\_\_
- 2) AQ Facility ID Number (first 8 digits of permit number): \_\_\_\_\_
- 3) AQ File Number: \_\_\_\_\_
- 4) Facility Location Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP Code: \_\_\_\_\_

- 5) Date of Performance Test: \_\_\_\_\_

- 6) Facility Contact Person (Individual who is designated to receive agency correspondence related to this test):  
 Mr./Ms: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Title: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP Code: \_\_\_\_\_  
 e-mail address: \_\_\_\_\_

7) Test Report Check List:

Cover:	
<input type="checkbox"/> Name and location (address) of the emission facility	<input type="checkbox"/> Date(s) of the performance test
<input type="checkbox"/> Identification of emission unit(s) tested (i.e. GP002, EU031, SV028, or CE001 – Identification of the tested unit which has the emission limit as designated by your permit (source designators))	<input type="checkbox"/> Name and address of the testing company or agency
<input type="checkbox"/> AQ Facility ID Number (first 8 digits of permit number) and AQ File Number	<input type="checkbox"/> Facility contact person (individual designated to receive agency correspondence), and contact information including title, address, phone number, fax number, and email address

# Test Report

## Performance Test Report Completeness Criteria (PTRCC)

- ▶ PTRCC is a tool to ensure the Performance Test Report is complete and all information is included in the proper sections
- ▶ PTRCC does not need to be submitted with the report unless report is lacking information and the form is used as a supplement to submit additional information



# 10 Quick Things You Can Do To Help With Timeliness of Test Report Review

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## 1. Include the following

- Facility ID Number (Permit Number)
- AQ File Number
- Unit Tested (EU000/SV000/GP000)
- Test Date
- Pollutant(s) Tested
- Contact Information

on the cover or within the first few pages of the Report and on the face of CD-ROM copy

# 10 Quick Things You Can Do To Help With Timeliness of Test Report Review

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2. Use correct designator as used in permit
  - EU000 for emission unit
  - SV000 for stack vent
  - CE000 for control equipment
  - GP000 for group
  
3. Include correct and full citations in the executive summary table. Also, ensure all limits from permit are listed with correct unit (lbs/hour, gr/dscf, lbs/MMBtu) assigned.

# 10 Quick Things You Can Do To Help With Timeliness of Test Report Review

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4. In executive summary and/or on the Operating Data Sheets include type (baghouse, RTO, scrubber, etc.) and the correct designator (CE000) of all associated control equipment.
5. Explain any problems experienced during the test or deviations from test plan in the Introduction and/or Results Summary

# Good

## Performance Test Report

PM, Opacity, VOC and SO2 Test Results

Acme Company  
AQ File #: 136  
AQ Facility ID #: 01300006

### Test Location:

Super Duper Acme Dryer (EU372/SV072)  
Super Dry Facility  
100 Toad Road, Factoryville, MN 55555

**Test Date:** January 1, 2007

### Prepared For:

Mr. Warner Brothers, Environmental Manager  
100 Neat Street, Anytown, MN 55556  
Phone: (000) 000-0000  
Fax: (000) 000-0001  
wb@acme.com

### Tested By:

Testers-R-Us  
Mr. Jack Stack  
100 Plain Lane  
Any Othertown, MN 55557  
Phone (111) 111-1111  
jstack@testrus.com

# Bad

## Performance Test Report

Acme Company

### Test Location:

Dryer Oven

**Report Completed:** February 2, 2007

### Prepared For:

Mr. Warner Brothers  
Phone: (000) 000-0000

### Tested By:

Test-R-Us



# Good

An overview of test results is below. Further summary is included on the following pages.

## SUMMARY OF PERFORMANCE TEST RESULTS

Emission Unit Tested	Limitation Basis	Pollutant and Emission Limit	Test Result
Super Duper Acme Dry Oven (EU372/SV072)	Minn. R. 7011.0715, subp. 1(A)	Total Particulate Matter: 0.13 lbs/hour or 0.094 gr/dscf	Total Particulate Matter: 0.11 lbs/hour or 0.096 gr/dscf
	Minn. R. 7011.0715, subp. 1(B)	Opacity: 20%	Opacity: 0%
	Minn. R. 7011.0610, subp. 2(B)	Sulfur Dioxide: 2.0 lbs/MMBtu	Sulfur Dioxide: 0.98 lbs/MMBtu
	Minn. R. 7007.0800, subp. 2	Volatile Organic Compounds: 2.4 lbs/hour	Volatile Organic Compounds: 2.0 lbs/hour

Due to stack conditions at the time of test, Method 201A was not able to be completed for PM10. Method 201A will be completed at a later date. Method 5 results are for Total Particulate only.

Since VOC total emissions were below the permitted emission limit the Afterburner Inlet was not tested. Destruction Efficiency not calculated.

HAPs Testing was not completed due to process upset.

# Bad

An overview of test results is below. Further summary is included on the following pages.

## SUMMARY OF PERFORMANCE TEST RESULTS

Emission Unit Tested	Limitation Basis	Pollutant and Emission Limit	Test Result
Dry Oven	Minn. Rule	Particulate: 0.3 gr/dscf	Particulate: 0.1 gr/dscf
		Opacity: 20%	Opacity: 0%
		SO2: 2.0 lbs/MMBtu	SO2: 30 lbs/hour
		VOC: 1.5 lbs/hour	VOC: 2.0 lbs/hour

No problems were experienced during testing.



# 10 Quick Things You Can Do To Help With Timeliness of Test Report Review

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6. Report Particulate Matter (PM) emissions as Filterable, Organic and Inorganic Condensibles.
  - ▶ Filterable=Dry Catch=Front-Half PM  
(Particulate by Federal requirements)
  - ▶ Filterable + Organic Condensibles  
(Total Particulate by Minn. Rule)
  - ▶ Filterable + Organic + Inorganic/Aqueous Condensibles  
(PM10 Equivalent by Federal or MN Standards)

# 10 Quick Things You Can Do To Help With Timeliness of Test Report Review

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7. Summarize Process Rates and Control Equipment Rates on the Operating Data Summary Form for all units tested.

Average data for each test period and series of tests. Also, include supporting data to justify how rate determination was reached.

# Example of a Bad Operating Data Summary Form

 Minnesota Pollution Control Agency	<b>Operating Data Summary For Process Sources</b>	Form ST-05
	Minnesota Pollution Control Agency 520 Lafayette Rd. N. Saint Paul, MN 55155-4194 (651)-296-6300	6/9/06

Test Date(s): January 1, 2007 Process Equipment Number/Identification: Dryer  
 Company Name: Acme Company

**Equipment & Operating Data**

1. Process Equipment Description: Dryer Oven
2. Were the process and control equipment operated consistent with normal procedures? YES  NO  If no, explain: \_\_\_\_\_
3. Include copy of production records or instrumentation which indicates rate of production or operation of the equipment, i.e. units per hour, pounds per hour, pressure, air flow, etc. \_\_\_\_\_
4. Date(s) and procedure(s) of last maintenance/cleaning within 6 months:  Remains unchanged from info. provided in test plan \_\_\_\_\_
5. Process rate (amount of raw material or finished product per hour, wet or dry basis) while combusting (list fuel type(s) and ratios as appropriate) \_\_\_\_\_

Process Parameter: list type and units	Run 1	Run 2	Run 3	Average
Dryer Throughput				215
Fuel Input (list units)				
Heat Input (10 <sup>6</sup> British thermal units/hour)				

6. Summarize control equipment operating data documented during testing. Values reported should reflect maximum, minimum, averages, or as approved in the test plan. (See test plan and approval letter)

Examples of APC equipment and parameters generally monitored. Monitor as in test plan and/or approval letter.				
• Scrubber (list type of scrubber): $\Delta P$ (in. w.c.) and feed rate (gpm and psig)	• Baghouse, Cyclone, and Multi-clone: $\Delta P$ (in. w.c.)			
• Catalytic Incinerator: $(^{\circ}F_{in} - ^{\circ}F_{out})$ and Thermal Incinerator: $(^{\circ}F_{temperature})$	• ESP: Number and identity of operating field(s)			
APC and parameter monitored	Run 1	Run 2	Run 3	Average
Wet Scrubber Flow (gal/minute)	200	210	190	
Afterburner (CE109) Temp. (degrees F)	1500	1525	1540	
List pollutant & averaging basis.--should reflect permit	Run 1	Run 1	Run 1	Average
Continuous Opacity Monitor(list hourly average)				
Monitor (list averaging basis):				
Monitor (list averaging basis):				

Abbreviations: APC-air pollution control gpm.-gallons per minute in. w.c.-inches of water column  
 lbs.-pounds psig-pressure per square inch gauge  $\Delta P$ - pressure drop

# Example of a Good Operating Data Summary Form

 Minnesota Pollution Control Agency	<b>Operating Data Summary For Process Sources</b>	Form ST-05
	Minnesota Pollution Control Agency 520 Lafayette Rd. N. Saint Paul, MN 55155-4194 (651)-296-6300	6/9/06

Test Date(s): January 1, 2007 Process Equipment Number/Identification: EU375  
 Company Name: Acme Company

**Equipment & Operating Data**

- Process Equipment Description: Dryer Oven
- Were the process and control equipment operated consistent with normal procedures? YES  NO  If no, explain: \_\_\_\_\_
- Include copy of production records or instrumentation which indicates rate of production or operation of the equipment, i.e. units per hour, pounds per hour, pressure, air flow, etc. \_\_\_\_\_
- Date(s) and procedure(s) of last maintenance/cleaning within 6 months:  Remains unchanged from info. provided in test plan \_\_\_\_\_
- Process rate (amount of raw material or finished product per hour, wet or dry basis) while combusting (list fuel type(s) and ratios as appropriate) \_\_\_\_\_

Process Parameter: list type and units	Run 1	Run 2	Run 3	Average
Dryer Throughput (tons/hour)	8.2	8.5	7.3	8.0
Fuel Input (list units) scf of natural gas	900	800	711	803.7
Heat Input (10 <sup>6</sup> British thermal units/hour)	23	22	25	23.3

- Summarize control equipment operating data documented during testing. Values reported should reflect maximum, minimum, averages, or as approved in the test plan. (See test plan and approval letter)

APC and parameter monitored	Run 1	Run 2	Run 3	Average
Wet Scrubber (CE107) Flow (gallon/minute)	200	210	190	200
Wet Scrubber (CE107) pH	9.0	8.5	10	9.0
Wet Scrubber (CE107) Nozzle Pressure (psig)	51	51	51	51
Wet Scrubber (CE107) Δ P (in. water column)	7.5	6	8	7.2
ESP (CE108) Total Power Input	45	37	52	44.7
Afterburner (CE109) Temp. (degrees F)	1540	1565	1580	1562
List pollutant & averaging basis.--should reflect permit	Run 1	Run 1	Run 1	Average
Continuous Opacity Monitor(list hourly average)				
Monitor (list averaging basis):				
Monitor (list averaging basis):				

Abbreviations: APC-air pollution control      gpm-gallons per minute      in. w.c.-inches of water column  
 lbs.-pounds      psig-pressure per square inch gauge      ΔP- pressure drop

# 10 Quick Things You Can Do To Help With Timeliness of Test Report Review

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8. Include all calibration data for all thermocouples, meters, pitot tubes, barometers and any other equipment used for emissions testing. For instrument calibrations include data recorder values used for calculating bias calibration accuracies.
9. Provide all calculations necessary to account how raw test data was computed into test results

# 10 Quick Things You Can Do To Help With Timeliness of Test Report Review

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10. If test is noncompliant, when possible provide an explanation why the failure occurred and what corrective action is being completed

# Test Frequency Plan

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- ▶ Often due 60 days after completion of test results
- ▶ A letter will suffice
- ▶ May submit with report – Please make obvious
- ▶ Include emission limit, test result, result as % of limit, and suggested frequency
- ▶ Test frequency typically based off of results compared to limit

# Test Frequency Plan

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- ▶ Other factors:
  - ▶ Previous Test Results
  - ▶ Enforcement History
  - ▶ Permit Concerns
- ▶ If test frequency is already included in permit, an amendment is required to change.
- ▶ Test frequency cannot be changed solely based on test results and submittal of new test frequency plan.

# A Reminder.....The Permit

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- ▶ It all starts with the Permit
  - ▶ Review your permit and the DELTA data that produced it
    - ▶ Does it make sense?
    - ▶ Does it accurately portray your facility's operation?

# Updated DRF-1 Reporting Form

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- ▶ Changes made to address both MPCA and facility needs
- ▶ Facilities must report all excess emissions
  - ▶ Inconsistencies as to what was being reported
  - ▶ Receiving multiple versions of reports
- ▶ Looking toward future of electronic submittals
- ▶ Excel version to aid with data dumping
- ▶ Location: <http://www.pca.state.mn.us/air/permits/forms.html>

# Updated DRF-1 Reporting Form



## Excess Emissions Reporting Form

DRF-1

Continuous Monitoring Systems Reporting Form

**Please note: This form has been updated. Please print, complete and remit only the forms. Please see the instructions to ensure proper use and understanding of definitions. DO NOT print and return the instructions.**

Use this form to record and report excess emissions (EE) that are identified by *Continuous Monitoring Systems*. This includes Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS). DRF-1 is the form you must use to report excess emissions from a stack as recorded by your facility's Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS).

Address hard copy report submittals to: Compliance Tracking Coordinator, Fourth Floor  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

### General Facility Information

Company name: \_\_\_\_\_

AQ file no.: \_\_\_\_\_ AQ permit no.: \_\_\_\_\_

Report covers Quarter: \_\_\_\_\_ Year: \_\_\_\_\_

### CEMS/COMS Data Summary Table

				Duration of Monitor Downtime		Duration of Excess Emissions (EE)			
2a)	2b)	2c)	2d)	3i)	2e)	4l)	2f)	4m)	2g)
Monitor ID Number	Monitor ID Pollutant	EU/SV ID Number	Total Operating Time (TOT)	Total Duration of Monitor Downtime	Downtime % Of TOT	Cumulative Duration of Exempt EE	Exempt EE % of TOT	Cumulative Total Duration of All EE	Total EE % of TOT
<b>MR042</b>	<b>Opacity</b>	<b>EU020</b>	<b>129600</b>	<b>1080</b>	<b>0.83%</b>	<b>126</b>	<b>0.098%</b>	<b>456</b>	<b>0.35%</b>

# Updated DRF-1 Reporting Form

**Duration of Monitor Downtime:** Provide the following information regarding each period of monitor downtime. Make a separate table for each monitor, as needed.

3a)	3b)	3c)	3d)	3e)	3f)	3g)	3h)
Monitor ID Number	Pollutant or Parameter Monitored	Emission Unit Being Monitored	Beginning Date and Time of Downtime	End Date and Time of Downtime	Duration of Downtime	Reason for Monitor Downtime (clarifying comments)	Corrective Action Taken (clarifying comments)
<b>MR042</b>	<b>Opacity</b>	<b>EU020</b>	<b>1/01/08 0806</b>	<b>3/31/08 0818</b>	<b>1080 (Min.)</b>	<b>Twelve minute daily calibration for 90 operating days (12X90=1080 min)</b>	<b>No Corrective Action Required</b>

\*Opacity time listed in minutes

**3i) Total Duration of Downtime:**

# Updated DRF-1 Reporting Form

**Duration of Excess Emissions:** Provide the following information regarding each individual excess emission identified by a monitor. Make a separate table for each monitor, as needed

4a)	4b)	4c)	4d)	4e)	4f)	4g)	4h)		4i)	4j)	4k)
Emission Unit ID Number	Monitor ID Number	Pollutant or Parameter Monitored	Beginning Date and Time of EE	End Date and Time of EE	Limit and Averaging Period	Highest Reading of EE with Units (i.e. 5, Lb/Hr, Etc)	Duration of Exempt EE (include these entries as part of 4i)		Total Duration of All EE	Cause of EE (clarifying comments)	Corrective Action Taken (Clarifying Comments)
EU020	MR042	Opacity	1/1/08 0800	1/1/08 0859	20% 6 min avg	44%	60 Min.		60 Min.	Start-up	No Corrective Action Required
			1/1/08 1800	1/1/08 1905		32%	66 Min.		66 Min.	Shutdown	No Corrective Action Required
			1/3/08 0500	1/3/08 0529		28%	0		30 Min.	Soot Blowing	No Corrective Action Required
			1/8/08 1500	1/8/08 1759		28%	0		180 Min.	Known Cause / Incorrect Fuel Burned	Fuel Mix Adjusted, Operator Education
			1/15/08 1100	1/15/08 1359		57%	0		120 Min.	Known Cause	ESP malfunction, total power increased
<b>4i) Cumulative Duration of Exempt Excess Emissions:</b>							126 Min.		456 Min.	<b>4m) Cumulative Total Duration of All Excess Emissions</b>	

# Updated DRF-1 Reporting Form

**Monitor Bypasses:** Provide the following information for each period in which an emission is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor Id Number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date And Time Of Bypass Period	End Date and Time of Bypass Period	Duration of Monitor Bypass (Minutes)	Was P.C.E. Operating During Bypass Period?	Duration of Allowable Monitor Bypass	Reason for Monitor Bypass (clarifying comments)	Corrective Action Taken (clarifying comments)
<b>5k) Total Duration of Allowable Monitor Bypass:</b>									

**6) CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

\_\_\_\_\_  
Signature of Responsible Official

\_\_\_\_\_  
Printed Name of Responsible Official

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

**Please note:** The individual signing must meet the definition of "responsible official" in Minn. R. 7007.0100, subp. 21.



# Helpful Websites



▶ **Stack Test Website:**

<http://www.pca.state.mn.us/air/performancetest.html>

▶ **Permits on the Web:**

<http://www.pca.state.mn.us/air/permits/issued/index.html>

▶ **State CEMS/Performance Test Rules:**

<http://www.revisor.leg.state.mn.us/arule/7017/>

▶ **Operating Rates Requirements:**

<http://www.revisor.leg.state.mn.us/arule/7017/2025.html>

▶ **Pretest Deadlines and Requirements for a Test Plan:**

<http://www.revisor.leg.state.mn.us/arule/7017/2030.html> 57



# Helpful Websites



- ▶ **Pretest Examples and Test Plan Checklist:**  
<http://www.pca.state.mn.us/air/ptest-planning.html>
- ▶ **Posttest Deadlines and Report Requirements:**  
<http://www.revisor.leg.state.mn.us/arule/7017/2035.html>
- ▶ **Test Report Forms and PTRCC Form:**  
<http://www.pca.state.mn.us/air/ptest-forms.html>
- ▶ **Test Methods and Performance Specifications:**  
<http://epa.gov/ttn/emc/>



# MPCA Stack Test and Monitoring Program: Updates and Expectations

Questions & Further Discussion

