



Minnesota Pollution Control Agency

520 Lafayette Road North
St. Paul, MN 55155-4194

DRF-1

Excess Emissions Reporting Form

Air Quality Permit Program

Doc Type: Excess Emission Report

Note: Please 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.

General Information about Deviation and Compliance Reporting

If your permit requires you to submit deviation reports or an annual compliance certification, you should use the Deviation Reporting Forms (DRFs) and Annual Compliance Certification Report (CR-04), unless you get Minnesota Pollution Control Agency (MPCA) approval to use another format or your facility's permit specifies otherwise. There are two separate DRF forms: DRF-1 and DRF-2.

DRF-1 is used to report direct excess stack emissions (EE) recorded by Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS).

DRF-2 is used to report deviations recorded by periodic monitoring systems, deviations of permitted operating conditions and surrogate parameters whether recorded periodically or continuously, or potential excess emissions identified through recordkeeping.

Some examples: flow rate, temperature, throughput, control equipment operating parameters, fuel-use records

CR-04: is used to report facility compliance status at the end of each year if required by your permit.

Address hard copy report submittals to: Air Compliance Tracking Coordinator, Minnesota Pollution Control Agency
520 Lafayette Road North, St. Paul, Minnesota 55155-4195

Or e-mail a signed and scanned PDF copy to: AQRoutineReport.PCA@state.mn.us
(see e-mail instructions in "Routine Air Report Instructions Letter" at:
<http://www.pca.state.mn.us/nwqh472>)

1) General Facility Information

Facility name: _____ AQ file no.: _____
County: _____ AQ permit #: _____
Report covers quarter: _____ Year: _____

2) 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

3) 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)	3b)	3c)	3d)	3e)	3f)	3g)	3h)
Monitor ID Number	Monitor ID Pollutant or Parameter	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)
3i) Total duration of downtime:								

*Opacity time listed in minutes

4) 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)	4b)	4c)	4d)	4e)	4f)	4g)	4h)	4i)	4j)	4k)
Emission Unit ID Number	Monitor 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 (example: 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)
4l) Cumulative Duration of Exempt Excess Emissions:										4m) Cumulative Total	

5) Monitor Bypasses: Provide the following information for each period in which an emission unit 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)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	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)
5k) Total duration of allowable monitor bypass:										

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.

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

Responsible Official:

Signature of responsible official

Print name of responsible official

Title

Date

General Information about Excess Emissions and Compliance Reporting

Please remit only the completed forms

Excess emissions are defined as emissions that are greater than the numerical emission limit during both the period when the limit applies and any applicable periods of exemption as defined by rule, such as periods of startup, shutdown and malfunction. Each period of Excess Emissions must be reported in the Total Excess Emissions columns of this form, including periods of exemption such as startup, shutdown and malfunction as stated in Minn. R. 7017.1110, subp. 2(A)(1). Furthermore, each Excess Emissions incident must be reported as a separate line item on Table 4.

Exempt Excess Emissions can then be separated out using the additional columns specified.

Excess Emissions **do not** include emissions during startup and shutdown that are based on values calculated using correction factors which, when applied outside the normal operating range, produce invalid values. Excess Emissions also **do not** include emissions specifically allowed by a permitted emission limit

Example of an Allowable Emission Limit:

Opacity Limit: $\leq 20\%$ opacity except one 6-minute average per hour not to exceed 60%

If the facility has one reading in the hour that exceeds 20% but is less than 60%, this reading is not considered an Excess Emission and **does not** need to be reported on the DRF-1 Form

As with all permit-required reports submitted to the Minnesota Pollution Control Agency, a responsible official signature is required.

Instructions for DRF-1

1. General information:

Facility name: Indicate the name of your facility and location if you have more than one facility with the same name.

AQ Permit ID #: Provide your facility's Minnesota Pollution Control Agency Air Quality Permit number *8-digit number*.

AQ File ID #: Provide your facility's Minnesota Pollution Control Agency Air Quality File number. This is the first group of characters in your original Air Emission Facility permit.

County: Indicate MN County where facility is located

Example: for permit number 1899AB-93-OT-1, the AQ Facility File ID number is 1899AB

Quarter Year: Indicate the calendar quarter and year which this reports covers.

2. CEMS and COMS data summary table:

The table on page one of this report is a summary of all Excess Emissions recorded during the reporting period. The summary table should be completed after filling out Items 3 and 4, which contain the detailed explanation of each Excess Emission and monitor downtime. Each row of the table should represent an individual monitor.

a) **Monitor ID number:** Using the same numbering system used in your permit, provide the identification number of each monitor or monitoring system. (*Example:* MR 042, CM001 – a new monitor ID may also be listed in instances when a new monitor has been installed but permit has yet to be updated.) If this is done, note the relationship of the new monitor to emission sources (EU/SV) at the facility. If the new monitor is a replacement include the replaced identification number on the form or in a cover letter as well explaining the change.

b) **Pollutant or Parameter:** Indicate the pollutant which is being monitored continuously (*Example:* SO₂, NO_x, Opacity)

c) **EU or SV ID number:** Using the same numbering system used in your permit, provide the monitored source and whether it is an emission unit or stack vent (*Examples:* EU001, SV002)

d) **Total operating time (TOT) in quarter:** Indicate the total operating time of the emissions unit being monitored during the calendar quarter. Please specify the appropriate time measurement (minutes = min., hours = hr.)

Specific CMS Operating Time is reported as follows:

CEMS: Count each hour in which the emission unit operated as a whole hour as defined by Minn. R. 7017.1160, even if the emission unit operated for only part of that hour. Report the emission-unit operating time in total hours of operation.

COMS: Count each six-minute period in which the emission unit operated. As defined in Minn. R. 7017.1200, a six-minute average is valid if it contains data from at least five minutes within the averaging period. Report the emission-unit operating time in total minutes of operation.

e) **Downtime % of TOT:** Indicate the percentage of total time that the monitor was not operating during the monitored period by using the following equation: (total duration of monitor downtime for the quarter (3i)) divided by (total emission-unit operating time during the quarter (2d)) multiplied by 100.

f) **Exempt Excess Emissions % of TOT:** Calculate the percentage of exempt excess emissions (startup, shutdown, malfunction, etc) which occurred during the reporting period by using the following formula: (cumulative duration of exempt excess emissions in the reporting period (4l)) divided by (total emission unit operating time (2d) – total duration of monitor downtime (3i)) multiplied by 100

Please note: This value is subset of the cumulative total duration of all excess emissions and must be included as part of the Total in columns 4m) and 2g) as well.

g) **Total Excess Emission % of TOT:** Calculate the percentage of excess emissions which occurred during the reporting period by using the following formula: (total cumulative duration of all excess emissions in the reporting period (4m)) divided by (total emission unit operating time (2d) – total duration of monitor downtime (3i)) multiplied by 100

Please note: Include all periods of excess emissions as defined prior to the start of these instructions. Periods of exemption must be included as part of the total, but can then be further identified using columns 4h) and 2f).

3. Duration of monitor downtime:

Only report times when the emission unit was operating without the monitor. *Do not report monitor downtime when the emission unit was also down.*

Specific CMS downtime is reported as follows since there are no partial time periods of downtime

CEMS: Report downtime in multiples of whole one-hour periods.

COMS: Report downtime in multiples of whole six-minute blocks.

a) **Monitor ID No.:** Identify each monitor and monitoring system with the same numbering system as stated in your permit (example: MR042, CM001)

b) **Pollutant or Parameter Monitored:** Specify which pollutant or parameter was required to be monitored.

c) **Emission Unit being Monitored:** Identify the emission unit being monitored with the same ID number as stated in your permit

d) **Beginning Time and Date of Downtime:** Provide the date and time the downtime began.

e) **End Date and Time of Downtime:** Provide the date and time the downtime ended.

f) **Duration of Downtime:** Indicate the total length of time of monitor downtime for the monitor during the reporting period. Please specify the appropriate time measurement. (minutes = min., hours = hr.)

g) **Reason for Monitor Downtime:** Using the following categories, explain in detail why the monitor was down:

Monitor Malfunction: breakdown of monitor component which caused monitor to go "down"

Non-monitor Malfunction: power outage at the facility which rendered the monitor inoperative

QA Calibration: time to conduct daily calibrations, cylinder gas audits, relative accuracy test audits and calibration error tests (opacity monitors) where the monitor is bypassed

Please note: All QA periods for the quarter may be summed and reported as one entry per quarter. See the example tab.

Other Known Causes: Example: routine maintenance and data acquisition system malfunction

Unknown Causes: Times where the monitor is not recording representative data and the cause is unknown

Total Duration: Indicate the total amount of monitor downtime during the period covered in the report.

h) **Corrective Action Taken:** Describe the repairs made to bring the monitoring system back on line.

i) **Total Duration of Downtime:** Indicate the total length of time of the downtime for the monitor. Please specify the appropriate time measurement. (minutes = min., hours = hr.)

4. Duration of Excess Emissions:

COMS: Report each six-minute block and as multiples of whole six-minute blocks. (Examples: 0, 6, 12, 18...)

CEMS: *Emission limits with block averages:*

Report as multiples of the averaging period (Examples: three-hour block average, report as 0, 3, 6, 9...)

CEMS: *Emission limits with rolling averages:*

Report as multiples of whole one-hour periods (Examples: 0, 1, 2, 3...)

CEMS: *Emission limits with geometric averages:*

Report as multiples of the averaging period (Examples: for a 24-hour geometric average, report as 0, 24, 48, 72...)

Please note: Include all periods of excess emission as defined prior to the start of these instructions.

- a) **Emission Unit ID No.:** Indicate the emission unit that is being monitored.
- b) **Monitor ID No.:** Identify each monitor and monitoring system with the same numbering system as stated in your permit (example: MR042, CM001) See additional instructions under Item 2.
- c) **Pollutant or Parameter Monitored:** Indicate the pollutant or parameter which is being monitored.
- d) **Beginning Time and Date of Excess Emissions:** Provide the date and time the excess emission began.
- e) **End Date and Time of Excess Emissions:** Provide the date and time the excess emission ended.
- f) **Emission Limit and Averaging Period:** List the emission limits and averaging periods being monitored (Example: 20 ppm SO₂ with a four-hour rolling average)
- g) **Highest Reading of Excess Emissions with Units:** Indicate the highest reading of emissions during the excess emission with the reading's unit of measurement (Examples: %, lb/hr,...)
- h) **Duration of Exempt Excess Emissions:** Indicate the length of time of the exempt excess emissions.
Please note: The above value is a subset of the total duration of all excess emissions and must be included as part of the Total in Column 4i as well.
- i) **Total Duration of All Excess Emissions:** Indicate the length of time of all exempt emissions as defined prior to the start of the instructions. This includes all periods of exempt excess emissions (Examples: startup, shutdown, malfunction,...)
- j) **Cause of Excess Emissions:** Using the following categories, describe in detail why the excess emissions occurred:
Startup/Shutdown: excess emissions due to startup or shutdown of the emission unit
Control Equipment: excess emissions due to problems with the control equipment
Process Problems: excess emissions due to irregularities in operation of the process.
Other Known Causes: excess emissions that do not fit into any of the previous categories are of known origin.
Unknown Causes: excess emissions of unknown origin
Please note: Additional information explaining the cause of the excess emission may be supplied (Example: control equipment/ESP not working)
- k) **Corrective Action:** Describe how the problem causing the excess emission was corrected and how future excess emissions will be avoided. If no corrective action required (Examples: startup, shutdown,...) then explain.
- l) **Cumulative Duration of Exempt Excess Emissions:** Provide the summed duration of the exempt excess emissions (Examples: startup, shutdown, malfunction,...).
Please note: The above value is a subset of the cumulative total duration of all excess emission and must be included as part of the Cumulative total in 4m) as well
- m) **Cumulative Total Duration of All Excess Emissions:** Provide the total summed duration of all excess emissions.

5. Monitor bypass:

- a) **Monitor ID No.:** Identify the monitor which was bypassed when the emission unit was operating. Use the same numbering system as stated in your permit (Example: MR003) See additional instructions under Item 2.
- b) **Emission Unit and Limit Required to be Monitored:** Identify the emission unit and limit which would have been monitored if the monitor was not bypassed.
- c) **Pollutant or Parameter Required to be Monitored:** Specify the pollutant or parameter which was required to be monitored.
- d) **Date and Time of Beginning of Bypass Period:** Indicate the date and time when the monitor bypass began.
- e) **Date and Time of End of Bypass Period:** Indicate the date and time when the monitor bypass period ended.
- f) **Duration of Monitor Bypass:** Indicate the length of time of the bypass.
- g) **Was Pollution Control Equipment Operating during the Monitor Bypass Period?** State whether or not any pollution control equipment, which is required to be operating in conjunction with the monitored emission unit, was operating during the monitor bypass period.
- h) **Duration of Allowable Bypass:** Indicate the length of time of the allowable bypass.
- i) **Reason for Monitor Bypass and Corrective Action Taken:** Explain why the monitor was bypassed.
- j) **Corrective Action Taken:** Explain actions taken to prevent similar bypass periods in the future.
- k) **Total Duration of Allowable Bypass:** Indicate the total length of time of the allowable bypasses.

6. Certification:

The form must be signed by a responsible official, as defined in Minn. R. 7007.0100, subp. 21. Please be sure to indicate the date that the form was signed and print the name and title of the person signing the form.

Example: All QA periods for the quarter may be summed and reported as one entry per quarter

3a)	3b)	3c)	3d)	3e)	3f)	3g)	3h)
Monitor ID No.	Pollutant or Parameter Monitored	Emission Unit being Monitored	Beginning Date and Time of Downtime	End Date and Time of Downtime	Total Duration of Downtime	Reason for Monitor Downtime (clarifying comments)	Corrective Action Taken (clarifying comments)
MR 042	Opacity	EU 020	01/01/06 0806	3/30/2006 818	1080 (min)	12-minute daily calibration for 90 operating days (12x90=1080 min.)	No corrective action required