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| Minnesota Pollution Control Agency (MPCA), 520 Lafayette Road North, St. Paul, MN 55155-4194 | OR-01  Conditional ambient monitoring off-ramp request  Air Quality Permit Program  Doc Type: Permit Application |

Instructions:This form is intended for Permittees currently subject to ambient air monitoring permit requirements for the pollutants listed in Table B. This form must be submitted as a major amendment. **Forms that are submitted without an authorized signature and attachments will be returned.**

If the Permittee wishes to use modeling to demonstrate compliance with ambient air standards in lieu of monitoring, please visit <https://www.pca.state.mn.us/business-with-us/air-quality-modeling> for instructions on how to prepare and submit an air modeling protocol.

Please review the instructions of this form and answer the following questions to assist the Minnesota Pollution Control Agency (MPCA) in determining if you meet the eligibility criteria and qualify for a conditional monitoring off-ramp.

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| Eligibility Criteria Questions   1. Was the monitoring conducted in accordance with an approved monitoring plan? Any data collected before a monitor plan is approved will not be analyzed for off-ramping purposes.   Yes.  No, you are not eligible. |
| 1. Does the data satisfy the completeness criteria found in Table B?   Yes.  No, you are not eligible. |
| 1. Have all state and federal monitor and data audits been completed and approved by the MPCA?   Yes.  No, you are not eligible. |
| 1. Is the probability that your monitor(s) will exceed 80% of the applicable National Ambient Air Quality Standards (NAAQS) or Minnesota Ambient Air Quality Standards (MAAQS) during the next three years less than 10%? See instructions for determining eligibility. Record the design value (DV) for at least the number of years required for three DV according to Table B, then use the provided equation to calculate an upper confidence limit and enter the relevant values in the table below.   Yes, the 90% upper confidence limit is less than 80% of the applicable ambient air standards for all monitors.  No, you are not eligible.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | **Site** | **Pollutant** | **DV Year 1** | **DV Year 2** | **DV Year 3** | **DV Year 4** | **DV Year 5** | **Avg. DV ()** | **Stand. Dev. (*s*)** | ***t*** | ***n*** | **90% Upper Confidence Limit** | **80% of Applicable Standard** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

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| 1. For the monitored pollutant, were total facility actual emissions greater than or equal to 80% of the permit allowable potential to emit? Include a comparison of total facility actual and limited potential emissions in the table below. Include all supporting information such as editable limited potential-to-emit spreadsheets and emissions inventory data as attachments to this application.   Yes.  No.  If no, please describe and propose operational or other limits (with supporting monitoring and recordkeeping) that will reduce total facility limited potential-to-emit to be within 20% of total facility actual emissions for the monitored pollutant. Refer to the MPCA website at [https://www.pca.state.mn.us/air/synthetic-minor-permit-limits](https://www.pca.state.mn.us/air/synthetic-minor-permit-limits%20) for information on determining and proposing limits. If actual emissions are unknown and have not been calculated for emissions inventory purposes, please provide an estimate based on actual operational conditions during the years monitored. Attach all supporting information.     |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **Monitoring Year 1** | **Monitoring Year 2** | **Monitoring Year 3** | **Monitoring Year 4** | **Monitoring Year 5** | | **Total Facility Actual Emissions (tpy)** |  |  |  |  |  | | **Total Facility Limited Potential-to-Emit (tpy)** |  |  |  |  |  | | **Percent of allowable emissions emitted** |  |  |  |  |  | |

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| 1. Are there any current or recent (within the last five years) enforcement actions against the Permittee?   Yes.  No.  If yes, describe below:     1. Are you currently in compliance with your air emissions permit?   Yes.  No, you are not eligible. |
| **Meeting the above criteria does not guarantee the approval of monitor off-ramping. The agency will consider additional data in the approval process. Please answer the following:** |
| 1. Are you aware of any community concerns from neighbors or the public that have been expressed to the Permittee?   Yes.  No.  If yes, describe below: |
| 1. Is your facility located in or near (within one mile) of an area of Environmental Justice concern? <https://www.pca.state.mn.us/about-mpca/environmental-justice>   Yes.  No. |
| 1. Please describe the proximity of the facility to schools, daycares, parks, hospitals, residents, or other sensitive properties/locations. |
| 1. Is the facility located in a State Implementation Plan (SIP), non-attainment, or maintenance area?   Yes.  No. |
| 1. Are any modifications that will increase emissions of the monitored pollutant planned or expected in the next five years? 10 years? If so, please describe the estimated increase below. |

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 responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Additionally, I certify this submittal with the understanding that ambient air monitoring can be required by the MPCA at any time.”*

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| Printed name: |  | | Title: |  | |
| Authorized signature: | |  | Date (mm/dd/yyyy): | |  |

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

Instructions for determining eligibility

The Permittee may request a conditional monitoring off-ramp if they meet the following criteria:

1. The monitoring was conducted in accordance with an approved monitoring plan. Any data collected before a monitor plan is approved will not be analyzed for off-ramping purposes;
2. The data satisfies the completeness criteria;
3. All state and federal monitor and data audits have been completed and are approved by the MPCA;
4. The probability that the monitor will exceed 80% of the applicable NAAQS or MAAQS during the next three years is less than 10% based on the concentrations, trends, and variability observed in the data collected by the industrial monitors (see instructions for Table A2);
5. The facility has been operating the under conditions that are representative of permit allowable emissions (total facility actual emissions greater than or equal to 80% of limited potential-to-emit). If not, the Permittee is willing to accept limits to reduce total facility limited potential-to-emit to be more representative of actual monitored emissions;
6. There are no current or recent enforcement actions against the Permittee; and
7. The Permittee is in compliance with its current air emissions permit.

Meeting the above criteria does not guarantee the approval of monitor off-ramping. The MPCA will consider additional data in the approval process, including:

1. Existing community concerns or concerns that arise during the public comment period;
2. Environmental Justice Areas of Concern;
3. Proximity to schools, daycares, parks, hospitals, residents, or other sensitive properties/locations;
4. Facility is located or it is anticipated to be located in a SIP, non-attainment, or maintenance area.

Instructions for calculating the upper confidence limit

There are several ways to calculate the confidence limit necessary for determining eligibility. The following is an example derived from *Ambient Air Monitoring Network Assessment Guidance* from the Environmental Protection Agency. It requires the use of three design values (3 DV) for the pollutants listed in Table B. Alternate methods are acceptable if approved by the MPCA.

Eligibility criteria 4 states that for a monitor to be considered for off ramping, the probability that the monitor will exceed 80% of the applicable NAAQS or MAAQS during the next three years is less than 10% based on the concentrations, trends, and variability observed in the data collected by the industrial monitors. The following equation can be used to determine if a site meets eligibility criteria 4.

Where:

* is the average design value for all years of data available
* t is the student’s t value for n-1 degrees of freedom at the 90% confidence level
* s is the sample standard deviation of the design value
* n is the number of design values

Table B provides the values for 80% of the standards. Use Table A1 to determine *n* and *t* in the above equation. Design values mean and standard deviation will need to be calculated separately by the facility.

Table A1

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| **Degrees of Freedom (n-1)** | **Student’s t value for 90% confidence** |
| 1 | 6.314 |
| 2 | 2.920 |
| 3 | 2.353 |
| 4 | 2.132 |
| 5 | 2.015 |
| 6 | 1.943 |
| 7 | 1.895 |

**Table A2 provides examples of this calculation using different standards and years of data.**

Table A2

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Site** | **Pollutant** | **DV Year 1** | **DV Year 2** | **DV Year 3** | **DV Year 4** | **DV Year 5** | **Avg. DV ()** | **Stand. Dev. (*s*)** | ***t*** | ***n*** | **90% Upper Confidence Limit** | **80% of Applicable Standard** |
| 1 | CO/8-hr | 6.8 | 7.2 | 9.6 | 6.3 | 6.4 | 7.26 | 1.35 | 2.132 | 5 | 8.6 | 7.2 |
| 2 | PM2.5/annual | 8.6 | 9.8 | 7.5 |  |  | 8.633 | 0.939 | 2.920 | 3 | 10.217 | 9.6 |
| 2 | PM2.5/annual | 8.6 | 9.8 | 7.5 | 7.4 | 8 | 8.260 | 0.880 | 2.132 | 5 | 9.099 | 9.6 |

In the examples from Table A2, Site 1 does not meet the criteria and may not be eligible for the industrial monitor offramp. From Table B, the 8-hr CO NAAQS is 9 ppm. 80% of this standard is 7.2 ppm. The 90% upper confidence limit is larger than 80% of the NAAQS in this case.

Monitoring at Site 2 for 2015, 2016, and 2017 did not meet the criteria and may not be eligible for an off-ramp. From Table B, the PM2.5 Annual NAAQS is 12.0 µg/m3. 80% of the annual PM2.5 NAAQS is 9.6 µg/m3. The 90% upper confidence limit is larger than 80% of the NAAQS in this. However, if monitoring continued for two additional years, as shown in row 3, the new 90% upper confidence limit becomes lower than 80% of the NAAQS and this monitor may now be eligible for an off-ramp if other criteria are also met.

Table B: Table of design value (DV) and data completeness requirements

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| --- | --- | --- | --- | --- | --- | --- |
| Pollutant | Years for 1 DV | Years of data needed for 3 DV | Standard | 80% of Standard | Data Completeness | How DV is calculated |
| Annual PM2.5 ([40 CFR §50.18](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.18)) | 3 | 5 | 12.0 µg/m3 | 9.6 µg/m3 | A year meets data completeness requirements when quarterly data capture rates for all four quarters are at least 75 percent. | The design value is the annual mean concentration, averaged over 3 consecutive years. |
| 24-hour PM2.5 ([40 CFR §50.18](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.18)) | 3 | 5 | 35 µg/m3 | 28 µg/m3 | A year meets data completeness requirements when quarterly data capture rates for all four quarters are at least 75 percent. | The design value is the annual 98th percentile concentration, averaged over 3 consecutive years. |
| PM10 [(40 CFR §50.6)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.6) | 3 | 5 | 150 µg/m3 | 120 µg/m3 | A minimum of 75 percent of the scheduled PM10 samples per quarter are required. | The NAAQS metric is the annual estimated number of exceedances, averaged over 3 consecutive years. |
| TSP Annual Primary [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 75 µg/m3 | 60 µg/m3 | As specified in monitoring plan. | Annual geometric mean concentration does not exceed standard. |
| TSP Annual Secondary [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 60 µg/m3 | 48 µg/m3 | As specified in monitoring plan. | Annual geometric mean concentration does not exceed standard. |
| TSP 24-hour primary [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 260 µg/m3 | 208 µg/m3 | As specified in monitoring plan. | Annual second-high 24-hour concentration does not exceed standard. |
| TSP 24-hour secondary [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 150 µg/m3 | 120 µg/m3 | As specified in monitoring plan. | Annual second-high 24-hour concentration does not exceed standard. |
| H2S 30 ppb [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 0.03 ppmv | 0.024 ppmv | 75% (as specified in monitoring plan) | 30-minute average not to be exceeded more than two times in 5 consecutive days. |
| H2S 50 ppb [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 0.05 ppmv | 0.04 ppmv | 75% (as specified in monitoring plan) | 30-minute average not to be exceeded more than two times in a year. |
| Lead [(40 CFR §50.16)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.16) | 3 | 5 | 0.15 µg/m3 | 0.12 µg/m3 | 3-month parameter mean is considered valid (*i.e.*, meets data completeness requirements) if the average of the data capture rate of the three constituent monthly means (*i.e.*, the  3-month data capture rate) is greater than or equal to 75 percent. | The design value is the maximum rolling 3-month lead-TSP average over a 3-year period. |
| CO 8-hour [(40 CFR §50.8)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.8) | 2 | 4 | 9 ppm | 7.2 ppm | An 8-hour average shall be considered valid if at least 75 percent of the hourly average for the 8-hour period are available. | The level of the 1971 8-hour NAAQS for carbon monoxide is 9 parts per million (ppm) not to be exceeded more than once per year. The design value is evaluated over a 2-year period. Specifically, the design value is the higher of each year's annual second maximum, non-overlapping 8-hour average. |
| CO 1-hour [(40 CFR §50.8)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.8) | 2 | 4 | 35 ppm | 28 ppm | A year meets data completeness requirements when all 4 quarters are complete. A quarter is complete when at least 75 percent of the sampling days for each quarter have complete data. A sampling day has complete data if 75 percent of the hourly concentration values have complete data. | The level of the 1971 1-hour NAAQS for carbon monoxide is 35 parts per million (ppm) not to be exceeded more than once per year. The design value is evaluated over a 2-year period. Specifically, the design value is the higher of each year's annual second maximum, non-overlapping 1-hour average. |
| 8-hour Ozone [(40 CFR § 50.19)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.19) | 3 | 5 | 0.070 ppm | 0.056 ppm | Data completeness requirements are met for a 3-year period at a site if valid daily maximum 8-hour average O3 concentrations are available for at least 90% of the days within the O3 monitoring season, on average, for the 3-year period, with a minimum of at least 75% of the days within the O3 monitoring season in any one year. | The primary and secondary O3 design value statistic is the annual fourth-highest daily maximum 8-hour O3 concentration, averaged over 3 years, expressed in ppm. |
| SO2 1-hour [(40 CFR § 50.17)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.17) | 3 | 5 | 75 ppb | 60 ppb | A year meets data completeness requirements when all 4 quarters are complete. A quarter is complete when at least 75 percent of the sampling days for each quarter have complete data. A sampling day has complete data if 75 percent of the hourly concentration values have complete data. | The level of the 1-hour NAAQS for sulfur dioxide is 75 ppb. The design value is the annual 99th percentile of the daily maximum 1-hour concentration values, averaged over 3 consecutive years. |
| SO2 3-hours [(40 CFR § 50.17)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.17) | 1 | 3 | 0.5 ppm | 0.4 ppm | To demonstrate attainment, the second-highest 3-hour average must be based upon hourly data that are at least 75 percent complete in each calendar quarter. A 3-hour block average shall be considered valid only if all 3-hourly averages for the 3-hour period are available. | The level of the 3-hour standard is 0.5 parts per million (ppm), not to be exceeded more than once per calendar year. |
| SO2 annual average [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 30 ppbv | 24 ppbv | As specified in monitoring plan. | Annual average concentration does not exceed standard. |
| SO2 24-hour [(Minn. R. 7009.0080)](https://www.revisor.mn.gov/rules/7009.0080/) | 1 | 3 | 140 ppb | 112 ppb | As specified in monitoring plan. | Annual second-high 24-hour concentration does not exceed standard. |
| NO2 1-year [(40 CFR § 50.11)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.11) | 1 | 3 | 53 ppb | 42.4 ppb | An annual primary standard design value is valid when at least 75 percent of the hours in the year are reported. | Annual average concentration in a calendar year is less than or equal to 53 ppb. |
| NO2 1-hour [(40 CFR § 50.11)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.11) | 3 | 5 | 100 ppb | 80 ppb | A year meets data completeness requirements when all 4 quarters are complete. A quarter is complete when at least 75 percent of the sampling days for each quarter have complete data. A sampling day has complete data if 75 percent of the hourly concentration values have complete data. | The 3-year arithmetic mean of the annual 98thpercentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb. |