

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

**BUREAU OF AIR**

**DIVISION of AIR POLLUTION CONTROL**

**PERMIT SECTION**

PROJECT SUMMARY for the  
DRAFT CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT

PQ Corporation  
340 East Grove Street  
Utica, Illinois 61373

Illinois EPA ID Number: 099833AAB

Application Number: 96030149

Application Type: CAAPP Renewal

Start of Public Comment Period: May 30, 2007

Close of Public Comment Period: June 29, 2007

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(This Project Summary generally describes the source and explains the draft permit. This document has been prepared pursuant to Section 39.5(8)(b) of the Illinois Environmental Protection Act, which requires "a statement that sets forth the legal and factual basis for the draft CAAPP permit conditions.")

## I. INTRODUCTION

This source has applied for a renewal of its Clean Air Act Permit Program (CAAPP) operating permit. The CAAPP is the program established in Illinois for operating permits for significant stationary sources as required by Title V of the federal Clean Air Act and Section 39.5 of Illinois' Environmental Protection Act. The conditions in a CAAPP permit are enforceable by the Illinois Environmental Protection Agency (Illinois EPA), the USEPA, and the public. This document is for informational purposes only and does not shield the Permittee from enforcement actions or its responsibility to comply with applicable regulations. This document shall not constitute a defense to a violation of the Act or any rule or regulation.

A CAAPP permit contains conditions identifying the applicable state and federal air pollution control requirements that apply to a source. The permit also establishes emission limits, appropriate compliance procedures, and specific operational flexibility. The appropriate compliance procedures may include monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the source is operating in accordance with the requirements of the permit. Further explanations of the specific provisions of the draft CAAPP permit are contained in the attachments to this document, which also identify the various emission units at the source.

There have been no major changes in the processes done at this site since the original CAAPP permit was issued in 2002.

## II. GENERAL SOURCE DESCRIPTION

### a. Nature of Source

The source manufactures sodium silicate, two types of metasilicate and Epsom salt. In addition, the source has fuel combustion emission units for producing process heat and steam.

### b. Ambient Air Quality Status for the Area

The source is located in an area that is currently designated attainment or unclassifiable for the National Ambient Air Quality Standards for all criteria pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, PM2.5, PM10, sulfur dioxide).

### c. Major Source Status

1. The source requires a CAAPP permit as a major source of PM and NO<sub>x</sub> emissions.

d. Source Emissions

The following table lists annual emissions of criteria pollutants from this source, as reported in the Annual Emission Reports sent to the Illinois EPA.

	<b>Annual Emissions (tons)</b>				
<b>Pollutant</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>
CO	7.59	7.69	7.19	8.14	8.45
NO <sub>x</sub>	80.89	80.98	75.30	79.80	101.10
PM	18.30	48.45	67.10	61.30	87.10
SO <sub>2</sub>	0.06	0.06	0.06	0.06	1.00
VOM	2.75	2.76	2.57	2.73	0.74

### III. NEW SOURCE REVIEW/TITLE I CONDITIONS

This draft permit contains terms and conditions that address the applicability of permit programs for new and modified sources under Title I of the Clean Air Act (CAA) and regulations promulgated thereunder, including 40 CFR 52.21, Prevention of Significant Deterioration (PSD) and 35 IAC Part 203, Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the draft permit by T1, T1R, or T1N. Any conditions established in a construction permit pursuant to Title I and not revised or deleted in this draft permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them. Where the source has requested that the Illinois EPA establish new conditions or revise such conditions in a Title I permit, those conditions are consistent with the information provided in the CAAPP application and will remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

This draft permit would establish new Title I requirements from a recent construction permit.

### IV. COMPLIANCE INFORMATION

The source has certified compliance with all applicable rules and regulations; therefore, a compliance schedule is not required for this source. In addition, the draft permit requires the source to certify its compliance status on an annual basis.

## V. PROPOSED ILLINOIS EPA ACTION/REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets the standards for issuance of a CAAPP permit. The Illinois EPA is therefore proposing to issue a CAAPP permit, subject to the conditions proposed in the draft permit.

Comments are requested by the Illinois EPA for the draft or proposed permit, pursuant to 35 IAC Part 252 and Sections 39.5(8) and (9) of the Illinois Environmental Protection Act. A final decision on the draft or proposed permit will not be made until the public, affected states, and USEPA have had an opportunity to comment. The Illinois EPA is not required to accept recommendations that are not based on applicable requirements. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 IAC Part 166.

## ATTACHMENT 1: Summary of Source-Wide Requirements

The following table indicates the source-wide emissions control programs and planning requirements that are applicable to this source. These programs are addressed in Sections 5 and 6 of the draft permit.

<b>Program/Plan</b>	<b>Applicable</b>
Emissions Reduction Market System (ERMS)	No
Nitrogen Oxides (NO <sub>x</sub> ) Trading Program	No
Acid Rain Program	No
Compliance Assurance Monitoring (CAM) Plan	Yes
Fugitive Particulate Matter (PM) Operating Program	Yes
Risk Management Plan (RMP)	No
PM <sub>10</sub> Contingency Measure Plan	No

1. Compliance Assurance Monitoring (CAM) is a program for pollutant-specific emission units which use an add-on control device to achieve compliance with an emission limitation or standard. A CAM plan is required for such units that have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than major source threshold levels, and are not specifically exempt by 40 CFR Part 64. Subject units and the CAM plans are identified in Attachment 3 of the draft permit.
2. The fugitive PM operating program is required to significantly reduce fugitive particulate matter emissions from certain affected locations and facilities (35 IAC Part 212.309 – 212.312). Normally, elements of this program include, but are not limited to, addressing normal traffic pattern roads, parking facilities, and material piles and handling through the use of water, oils, or chemical dust suppressants.

## ATTACHMENT 2: Summary of Requirements for Specific Emission Units

The following tables include information on the requirements that apply to significant emission units at this source. The requirements are found in Section 7 of the draft permit, which is further divided into subsection, i.e., Section 7.1, 7.2, etc., for the different categories of units at the source. A separate table is provided for each subsection in Section 7 of the draft permit. An explanation of acronyms and abbreviations is contained in Section 2 of the draft permit.

Table 1 (Section 7.1 of the draft permit)

<b>Emission Unit - Sodium Silicate Manufacturing Process</b>	
Description	Inorganic chemical process made by the reaction of sodium carbonate (soda ash) and sand (silica).
Date Constructed	Constructed in 1970 but modified in 1994.
Emission Control Equipment	Mist eliminator
<b>Applicable Rules and Requirements</b>	
Emission Standards	<ul style="list-style-type: none"> <li>• 35 IAC 212.321 for PM</li> <li>• 35 IAC 212.123 for opacity</li> <li>• 35 IAC 214.301 for SO<sub>2</sub></li> </ul>
Streamlining	N/A
Title I Conditions	<ul style="list-style-type: none"> <li>• The draft permit contains limits on operation and emissions in Conditions 7.1.5 and 7.1.6. These limits were incorporated from Permit 72100813 but where revised when the CAAPP permit was first issued.</li> </ul>
Non-applicability	<ul style="list-style-type: none"> <li>• 35 IAC 214.304: The reason was explained in detail in the permit itself.</li> <li>• 35 IAC 216.121: The reason was explained in detail in the permit itself.</li> <li>• 40 CFR 64 (CAM): The reason was explained in detail in the permit itself.</li> </ul>
<b>Periodic Monitoring (other than basic regulatory requirements)</b>	
Testing	N/A
Emissions Monitoring	
Operational Monitoring	<ul style="list-style-type: none"> <li>• Monthly observation for visible emissions from the demister pad. Normally there are no visible emissions.</li> </ul>

<b>Emission Unit - Sodium Silicate Manufacturing Process</b>	
Inspections	<ul style="list-style-type: none"> <li>• Quarterly inspections of demister pad</li> <li>• Semi-annual inspection of baghouse</li> </ul>
Recordkeeping	<ul style="list-style-type: none"> <li>• Inspections and monitoring results.</li> <li>• Process weight rate.</li> <li>• Percent sulfur in each shipment of fuel oil received.</li> </ul>
Other	
<b>Reporting</b>	
Prompt Reporting	<ul style="list-style-type: none"> <li>• Emissions exceeding the allowable of Condition 7.1.3.</li> <li>• Emissions exceeding the allowable of Condition 7.1.6.</li> </ul>
Other Reporting	
<b>Other Information</b>	
Footnotes	

Table 2 (Section 7.2 of the draft permit)

<b>Emission Unit - Metasilicate Manufacturing Process</b>	
Description	Beginning with the material produced in Section 7.1, two forms of metasilicate are produced, pentahydrate and anhydrous.
Date Constructed	Process was constructed in 1968 but two new small boilers were added in 2006.
Emission Control Equipment	Scrubber and dust collectors
<b>Applicable Rules and Requirements</b>	
Emission Standards	<ul style="list-style-type: none"> <li>• 35 IAC 212.321 for PM.</li> <li>• 35 IAC 212.123 for opacity.</li> <li>• 35 IAC 214.122(b)(2) for sulfur dioxide when burning oil.</li> <li>• 35 IAC 212.206 and 212.207 for PM when burning oil.</li> <li>• 35 IAC 216.121 for CO in air heater only.</li> </ul>
Streamlining	N/A
Title I Conditions	<ul style="list-style-type: none"> <li>• The draft permit contains limits on operation and emissions in Conditions 7.1.5 and 7.1.6. These limits were incorporated from Permit 03060075 and 06090053.</li> </ul>
Non-applicability	<ul style="list-style-type: none"> <li>• 35 IAC 217.141: The reason was explained in detail in the permit itself.</li> <li>• 40 CFR 60, Subparts Dc: The reason was explained in detail in the permit itself.</li> <li>• 35 IAC 216.121: The reason was explained in detail in the permit itself.</li> <li>• 40 CFR Part 64: The reason was explained in detail in the permit itself for certain units but one unit was subject.</li> </ul>
<b>Periodic Monitoring (other than basic regulatory requirements)</b>	
Testing	
Emissions Monitoring	
Operational Monitoring	<ul style="list-style-type: none"> <li>• CAM for baghouse MAC-06.</li> <li>• Daily observation for visible emissions from both the scrubber MC-08 and baghouse MC-09, which are not subject to CAM. Normally there are no visible emissions so visible emissions have been specified rather than opacity.</li> </ul>

<b>Emission Unit - Metasilicate Manufacturing Process</b>	
Inspections	<ul style="list-style-type: none"> <li>• Quarterly inspections of demister pad.</li> <li>• Semi-annual inspection of baghouses.</li> </ul>
Recordkeeping	<ul style="list-style-type: none"> <li>• Inspection results.</li> <li>• Visible emissions observations.</li> <li>• Sulfur content of fuel oil.</li> <li>• CAM records.</li> </ul>
Other	
<b>Reporting</b>	
Prompt Reporting	<ul style="list-style-type: none"> <li>• Emissions exceeding the limits in Condition 7.2.6.</li> <li>• Exceeding the limits in Condition 7.2.3.</li> <li>• Sulfur content of fuel oil or hours of operation of the boiler on fuel oil exceeding the limits in condition 7.2.5.</li> <li>• CAM reporting.</li> </ul>
Other Reporting	
<b>Other Information</b>	
Footnotes	

Table 3 (Section 7.3 of the draft permit)

<b>Emission Unit - Epsom Salt Manufacturing Process</b>	
Description	The product is a hydrated crystal and after the initial reaction there are drying and screening steps and then packaging of the product.
Date Constructed	Most of the process was built in 1989.
Emission Control Equipment	Mist eliminators and dust collectors or baghouses.
<b>Applicable Rules and Requirements</b>	
Emission Standards	<ul style="list-style-type: none"> <li>• 35 IAC 212.321 for PM.</li> <li>• 35 IAC 212.123 for opacity.</li> <li>• 35 IAC 214.303 for sulfuric acid.</li> <li>• NSPS, 40 CFR 60 Subpart UUU mineral industries).</li> <li>• 35 IAC 214.161 for sulfur dioxide when burning oil.</li> <li>• 35 IAC 212.206 and 212.207 for PM when burning oil.</li> <li>• 35 IAC 216.121 for CO.</li> </ul>
Streamlining	N/A
Title I Conditions	<ul style="list-style-type: none"> <li>• The draft permit contains limits on operation and emissions in Conditions 7.1.5 and 7.1.6. These limits were incorporated from Permits 89060059, 950050010, 02080010 and 96030149 when originally issued.</li> </ul>
Non-applicability	<ul style="list-style-type: none"> <li>• 40 CFR Part 60, Subpart OOO: The reason was explained in detail in the permit itself.</li> <li>• 40 CFR Part 64: The reason was explained in detail in the permit itself.</li> <li>• 35 IAC 217.141: The reason was explained in detail in the permit itself.</li> <li>• NSPS Subpart UUU (monitoring requirements) The reason was explained in detail in the permit itself.</li> </ul>
<b>Periodic Monitoring (other than basic regulatory requirements)</b>	
Testing	
Emissions Monitoring	
Operational Monitoring	<ul style="list-style-type: none"> <li>• CAM for dryer/cooler and bulk loading operations.</li> <li>• Triboflow bag break detector on dryer/cooler.</li> <li>• Opacity readings on all baghouses and dust collectors twice daily.</li> </ul>
Inspections	

<b>Emission Unit - Epsom Salt Manufacturing Process</b>	
Recordkeeping	<ul style="list-style-type: none"> <li>• Triboflow readings.</li> <li>• Opacity readings.</li> <li>• Sulfur content of fuel.</li> <li>• CAM records.</li> </ul>
Other	
<b>Reporting</b>	
Prompt Reporting	<ul style="list-style-type: none"> <li>• Emissions exceeding condition 7.3.6.</li> <li>• Exceeding the limits in Conditions 7.3.3 or 7.3.5.</li> </ul>
Other Reporting	<ul style="list-style-type: none"> <li>• CAM Reporting</li> </ul>
<b>Other Information</b>	
Footnotes	

### ATTACHMENT 3: Prompt Reporting of Deviations

Prompt reporting of deviations is critical in order to have timely notice of deviations and the opportunity to respond, if necessary. The effectiveness of the permit depends upon, among other important elements, timely and accurate reporting. The Illinois EPA, USEPA and the public rely on timely and accurate reports submitted by the permittee to measure compliance and to direct investigation and follow-up activities. Prompt reporting is evidence of a permittee's good faith in disclosing deviations and describing the steps taken to return to compliance and prevent similar incidents.

Any occurrence that results in an excursion from any emission limitation, operating condition, or work practice standard as specified in this CAAPP permit is a deviation subject to prompt reporting. Additionally, any failure to comply with any permit term or condition is a deviation of that permit term or condition and must be reported to the Illinois EPA as a permit deviation. The deviation may or may not be a violation of an emission limitation or standard. A permit deviation can exist even though other indicators of compliance suggest that no emissions violation or exceedance has occurred. Reporting permit deviations does not necessarily result in enforcement action. The Illinois EPA has the discretion to take enforcement action for permit deviations that may or may not constitute an emission limitation or standard or the like, as necessary and appropriate.

Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act, which mirrors 40 CFR 70.6(a)(3)(iii)(B), requires prompt reporting of deviations from the permit requirements. The permitting authority (in this case, Illinois EPA) has the discretion to define "prompt" in relation to the degree and type of deviation likely to occur. Furthermore, Section 39.5(7)(f)(i) of the Illinois Environmental Protection Act, which mirrors 40 CFR 70.6(a)(3)(iii)(A) requires that monitoring reports must be submitted at least every 6 months. Therefore, USEPA generally considers anything less than 6 months to be "prompt" as long as the selected time frame is justified appropriately (60 Fed. Reg. 36083, 36086 (July 13, 1995)).

The USEPA has stated that, for purposes of administrative efficiency and clarity, it is acceptable to define prompt in each individual permit. *Id.* The Illinois EPA has elected to follow this approach and defines prompt reporting on a permit by permit basis. In instances where the underlying applicable requirement contains "prompt" reporting, this frequency or a shorter frequency of reporting is the required timeframe used in this permit. Where the underlying applicable requirement fails to explicitly set forth the timeframe for reporting deviations, the Illinois EPA has developed a structured manner to determine the reporting approach used in this permit.

The Illinois EPA generally uses a time frame of 30 days to define prompt reporting of most deviations. Also, for certain permit conditions in individual permits, the Illinois EPA may require an alternate timeframe that is less than 30 days if the permit requirement justifies a shorter reporting time period. Under certain circumstances, EPA may establish a deviation reporting period longer than 30 days, but, in no event exceeding 6 months. Where it has

established a deviation reporting period other than 30 days in an individual permit (specifically Section 7.x.10), the Illinois EPA has explained the reason for the alternative timeframe. (See Attachment 2 of this Project Summary.)

The timing for certain deviation reporting may be different when a source or emission unit at a source warrants reporting to address operation, independent of the occurrence of any deviations. This is the case for a source that is required to perform continuous monitoring for the emission unit, for which quarterly or semi-annual “monitoring” reports are appropriate. Where appropriate, reporting of deviations has generally been combined in, or coordinated with these quarterly or semi-annual reports, so that the overall performance of the plant can be reviewed in a comprehensive fashion. This will allow a more effective and efficient review of the overall performance of the source by the Illinois EPA and other interested parties, as well as by the source itself.

At the same time, there are certain deviations for which quicker reporting is appropriate. These are deviations for which individual attention or concern may be warranted by the Illinois EPA, USEPA, and other interested parties. Under this scenario, emphasis has been placed primarily on deviations that could represent substantial violations of applicable emission standards or lapses in control measures at the source. For these purposes, depending on the deviation, immediate notification may be required and preceded by a follow-up report submitted within 15 days, during which time the source may further assess the deviation and prepare its detailed plan of corrective action.

In determining the timeframe for prompt reporting, the Illinois EPA assesses a variety of criteria such as:

- historical ability to remain in continued compliance,
- level of public interest in a specific pollutant and/or source,
- seriousness of the deviation and potential to cause harm,
- importance of applicable requirement to achieving environmental goals,
- designation of the area (i.e., non-attainment or attainment),
- consistency among industry type and category,
- frequency of required continuous monitoring reports (i.e., quarterly),
- type of monitoring (inspection, emissions, operational, etc.), and
- air pollution control device type and operation

These prompt reporting decisions reflect the Illinois EPA’s consideration of the possible nature of deviations by different emission units and the responses that might be required or taken for those different types of deviations. As a consequence, the conditions for different emission units may identify types of deviations which include but are not limited to: 1) Immediate (or very quick) notification; 2) Notification within 30 days as the standard; or 3) Notification with regular quarterly or semi-annual monitoring reports.

The Illinois EPA's decision to use the above stated prompt reporting approach for deviations as it pertains to establishing a shorter timeframe in certain circumstances reflects the criteria discussed as well as USEPA guidance on the topic.

- 40 CFR 71.6(a)(3)(iii)(B) specifies that certain potentially serious deviations must be reported within 24 or 48 hours, but provides for semi-annual reporting of other deviations. (Serious or severe consequences)
- FR Vol. 60, No. 134, July 13, 1995, pg. 36086 states that prompt should generally be defined as requiring reporting within two to ten days of the deviation, but longer time periods may be acceptable for a source with a low level of excess emissions. (intermediate consequences)
- Policy Statement typically referred to as the "Audit Policy" published by the USEPA defines prompt disclosure to be within 21 days of discovery. (Standard for most "pollutant limiting" related conditions)
- Responses to various States by USEPA regarding other States' definition of prompt.

As a result, the Illinois EPA's approach to prompt reporting for deviations as discussed herein is consistent with the requirements of 39.5(7)(f)(ii) of the Act as well as 40 CFR part 70 and the CAA. This reporting arrangement is designed so that the source will appropriately notify the Illinois EPA of those events that might warrant individual attention. The timing for these event-specific notifications is necessary and appropriate as it gives the source enough time to conduct a thorough investigation into the causes of an event, collecting any necessary data, and to develop preventative measures, to reduce the likelihood of similar events, all of which must be addressed in the notification for the deviation.

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