

**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

AKJ Industries, Inc.

20<sup>th</sup> & State Streets  
Granite City, Illinois 62040

Illinois EPA ID Number: 119040AEB

Application Number: 06050113

Application Type: Initial CAAPP

Start of Public Comment Period: October 15, 2008

Public Hearing Date: December 2, 2008

Close of Public Comment Period: January 2, 2009

Permit Engineer/Technical Contact: Anatoly Belogorsky, 217/782-2113

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(This document 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 the new operating permit under the Clean Air Act Permit Program (CAAPP). 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.

## **II. GENERAL SOURCE DESCRIPTION**

The AKJ process is used to convert coal tar decanter sludge into a pumpable fuel with alternative uses within an integrated steel plant (U.S. Steel). The source is located on the property of U.S. Steel.  
at 20<sup>th</sup> & State Streets, Granite City, Illinois.

## **III. MAJOR OPERATIONS DESCRIPTION**

Tar Decanter Sludge (TDS) Conversion Process

AKJ Industries, Inc. operates a patented process that is used to convert coal tar decanter sludge into a pumpable fuel with an alternative use within an integrated steel plant. The process collects coal tar decanter sludge into a primary processing tank, adds a prescribed amount of diluent (light cycle oil), where it is impacted, sheared, and heated to bring the finished material into a homogeneous liquid mixture with the appropriate viscosity. The finished product is returned to U.S. Steel Plant.

## **IV. LOCATION DESCRIPTION**

- a. Ambient air quality status for the area

The source is located in an area that, as of the date of permit issuance, is designated nonattainment for the National Ambient Air Quality Standards for ozone (moderate nonattainment), PM<sub>10</sub> (moderate nonattainment) and PM<sub>2.5</sub>, and attainment or unclassifiable for all other criteria pollutants (CO, lead, NO<sub>2</sub>, SO<sub>2</sub>).

b. Major source status

For purposes of the CAAPP, AKJ Industries, Inc is considered a single source with U.S.Steel (I.D. 119813AAI), located at 20<sup>th</sup> Street and Edwardsville in Granite City. Although this source itself is not a major source for any regulated air pollutant and HAPs, it is treated by the proposed permit as a major source considering the single source status of all co-located sources operated at U.S.Steel property in Granite City.

c. Single source/support facilities status

In addition to AKJ Industries, Inc the following independent operators/Permittees are considered a single source with U.S.Steel:

- i. Stein Steel Mill Services (I.D. 119813AAD) located at 20<sup>th</sup> Street and Edwardsville in Granite City. The Permittee have elected to obtain a separate CAAPP permit for it operations.
- ii. Granite City Slag, LLC (I.D. 119040ATF) located at 20<sup>th</sup> Street and Edwardsville in Granite City. The Permittee have elected to obtain a separate CAAPP permit for it operations.
- iii. Gateway Energy & Coke Co LLC (I.D. 119040ATN) located at Edwardsville Road in Granite City. Gateway Energy & Coke Co LLC shall obtain a separate CAAPP permit within 12 months after construction of a new heat recovery coke manufacturing plant.
- iv. Tube City IMS (I.D.119040ATL) located at 2500 East 23<sup>rd</sup> Street in Granite City. The Permittee have elected to obtain a separate CAAPP permit for it operations.
- v. Oil Technology Inc (I.D. 119040ATG) located at Rte 203 in Granite City. The Permittee have elected to obtain a separate CAAPP permit for it operations.

d. Ambient air monitoring network in the Granite City area

The following network sites are currently operated by the Illinois EPA:

City	Site/Address	Pollutants
Granite City	Fire Station #1, 23 <sup>rd</sup> & Madison	PM <sub>2.5</sub> PM <sub>10</sub>
Granite City	Air Products, 15 <sup>th</sup> & Madison	PM PM <sub>10</sub> Pb
Granite City	Gateway Regional Medical Center, 2100 Madison	PM <sub>2.5</sub>

**V. ANNUAL EMISSION REPORT SUMMARY**

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

Pollutant	Annual Emissions (tons)				
	2002	2003	2004	2005	2006
CO	-	-	-	-	-
NOx	-	-	-	-	-
PM	-	-	-	-	-
SO <sub>2</sub>	-	-	-	-	-
VOM	2.25	1.72	1.02	1.2	0.03

**VI. SUMMARY OF DRAFT CAAPP PERMIT**

a. Equipment Listing (other than insignificant)

Unit/Operations	Description	Emission Control Equipment	Subsection
Conversion Process of Coal Tar Decanter Sludge (TDS)	Process Tank; Storage Tank	None None	7.1

b. Insignificant Activities Listing

Storage tanks of any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

**VII. 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. The latest inspection reports

and annual emission reports have been reviewed and do not indicate any non-compliance.

### **VIII. 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

- a. 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)	N/A
Nitrogen Oxides (NO <sub>x</sub> ) Trading Program	N/A
Acid Rain Program	N/A
Fugitive Particulate Matter (PM) Operating Program	N/A
Risk Management Plan (RMP)	N/A
PM <sub>10</sub> Contingency Measure Plan	N/A

- b. The following table indicates source-wide site-specific requirements addressed in Section 5 of the draft permit.

<b>Non-Applicable Rules and Requirements w/justification</b>
<ul style="list-style-type: none"> <li>The following source-wide state non-applicability rules (with certain exemptions) being established in the proposed permit (See Condition 5.4 for more details):</li> <li>35 IAC 212.324</li> <li>35 IAC 212.309(a)</li> <li>35 IAC 212.700</li> </ul>
<b>Title I Conditions and/or Synthetic Minor Limits</b>
<ul style="list-style-type: none"> <li>N/A</li> </ul>
<b>Control Requirements and Work Practices</b>
<ul style="list-style-type: none"> <li>N/A</li> </ul>
<b>Testing, Monitoring, Recordkeeping, and Reporting</b>
<ul style="list-style-type: none"> <li>Reports on the deviations from the conditions of the permit</li> </ul>

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</b>	
Name	Tar Decanter Sludge (TDS) Conversion Process
Description	AKJ Industries, Inc. operates a patented process that is used to convert coal tar decanter sludge into a pumpable fuel with an alternative use within an integrated steel plant. The process collects coal tar decanter sludge into a primary processing tank, adds a prescribed amount of diluent (light cycle oil), where it is impacted, sheared, and heated to bring the finished material into a homogeneous liquid mixture with the appropriate viscosity. The finished product is returned to U.S. Steel Plant.
Date Constructed	1993
Emission Control Equipment	None
<b>Applicable Rules and Requirements</b>	
Emission Standards	<ul style="list-style-type: none"> <li>• IAC 212.321(a): Process weight rule</li> <li>• 35 IAC 219.301: 8 lbs VOM/hour rule</li> <li>• 35 IAC 219.108: submerged loading pipe</li> </ul>
Streamlining	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Title I Conditions	<ul style="list-style-type: none"> <li>• VOM emission are limited to less than 1.0 t/yr through the production limitations</li> </ul>

Non-applicability	<ul style="list-style-type: none"> <li>• 40 CFR Part 61 Subpart FF: benzene waste generated on site from the by-products operations (owned and operated by U.S.Steel) is less than 10 Mg/yr (11 ton/yr)</li> <li>• 35 IAC 212.324: not applicable to the affected operations. Pursuant to 35 IAC 212.324(c)(3), the affected operations are subject to the emission limitations of 35 IAC Part 212, Subpart R, “Primary and Fabricated Metal Products and Machinery Manufacture”</li> <li>• 35 IAC Part 219, Subpart TT: VOM emissions from the affected operation are less than 2.5 t/yr, therefore exempt from control requirements pursuant to 35 IAC 219.980(c)</li> <li>• CAM Rules (40 CFR Part 64) are not applicable to any unit/operation operated without any air pollution control device(s).</li> </ul>
<b>Periodic Monitoring (other than basic regulatory requirements)</b>	
Testing	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Emissions Monitoring	<ul style="list-style-type: none"> <li>• The recordkeeping and reporting requirements are sufficient for periodic monitoring because the emissions are negligible and the units have never exceeded these limits in the past. The likelihood of an exceedance is small.</li> </ul>
Inspections	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Recordkeeping	<ul style="list-style-type: none"> <li>• Monthly and annual production rates</li> <li>• Calculations and records on emissions being released</li> </ul>
<b>Reporting</b>	
Prompt Reporting	<ul style="list-style-type: none"> <li>• See also Attachment 3 for Prompt Reporting of Deviations</li> </ul>
Other Reporting	<ul style="list-style-type: none"> <li>• Exceedance of applicable emission standards to be reported</li> </ul>

### 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.