Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

To:	Interested Parties
Date:	September 29, 2016
From:	Matthew Stuckey, Chief Permits Branch Office of Air Quality
Source Name:	Kemira Water Solutions, Inc.
Permit Level:	Registration Administrative Amendment
Permit Number:	089-37481-00489
Source Location:	3761 Canal Street East Chicago, Indiana
Type of Action Taken:	Changes that are administrative in nature

Notice of Decision: Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

The final decision is available on the IDEM website at: http://www.in.gov/apps/idem/caats/
To view the document, select Search option 3, then enter permit 37481.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

(continues on next page)

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Gary Hale
Kemira Water Solutions, Inc
3761 Canal Street,
East Chicago, Indiana 46312

September 29, 2016

Re: 089-37481-00489
Administrative Amendment to
R089-21908-00489

Dear Gary:

Kemira Water Solutions, Inc was issued a Registration No. R089-21908-00489 on December 2, 2005 for a stationary source located at 3761 Canal Street, East Chicago, Indiana 46312. On August 05, 2016, the Office of Air Quality (OAQ) received an application from the source requesting to construct a new Hydrochloric acid trans-loading operation using scrubber as control device to facilitate HCL transfer from rail cars to truck trailers.

Pursuant to 326 IAC 2-5.5-6(d)(11), this change to the registration is considered administrative amendment because the registration is amended to incorporate a modification that consist of emission unit described under 326 IAC 2-1.1-3(e)(1) through 326 IAC 2-1.1-3(e)(31) (Exemptions).

The source shall continue to operate according to 326 IAC 2-5.5 (Registrations). All other conditions of the registration shall remain unchanged and in effect. Please find attached the entire registration as amended. The registration references the below listed attachments. Since these attachments have been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of these attachments with this amendment:

Attachment A: NSPS 40 CFR 60, Subpart JJJJ
Attachment B: NESHAP 40 CFR 63, Subpart ZZZZ

Previously issued approvals for this source containing these attachments are available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl.

A copy of the registration is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Vasantha Palakurti, at (800) 451-6027, press 0 and ask for Vasantha Palakurti or extension 4-9694, or dial (317) 234-9694.

Sincerely,

Tripurari P. Sinha

Tripurari P. Sinha, Ph.D., Section Chief
Permits Branch
Office of Air Quality

TS/PV

Attachment: Revised Registration and Appendix A (Emissions Calculations)

cc: File - Lake County
Lake County Health Department
Compliance and Enforcement Branch
IDEM Northwest Regional Office

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

REGISTRATION
OFFICE OF AIR QUALITY

Kemira Water Solutions, Inc.
3761 Canal Street
East Chicago, Indiana 46312

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 089-21908-00489	
Original signed by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: December 2, 2005

First Registration Notice-Only Change No. 089-24042-00489 issued on January 3, 2007
Second Registration Notice-Only Change No. 089-28818-00489, issued on January 22, 2010
Third Registration Notice-Only Change No. 089-30208-00489, issued on March 17, 2011
First Registration Revision No. 089-35726-00489, issued on June 01, 2015

Administrative Amendment No. 089-37481-00489	
Issued by: Tripurari Sinha Tripurari P. Sinha, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: September 29, 2016

SECTION A SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary facility to produce Ferrous Chloride ($FeCl_2$) and Ferric Chloride ($FeCl_3$).

Source Address:	3761 Canal Street, East Chicago, Indiana 46312
General Source Phone Number:	219-397-2646
SIC Code:	2819
County Location:	Lake County
Source Location Status:	Nonattainment for Ozone Attainment for all other criteria pollutants
Source Status:	Registration I of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

One (1) closed-loop Ferrous Chloride production Ferrous and Ferric Chloride, including the following:

(a) Tanks No. T310 and T311 for storing ferrous/ferric chloride and hydrochloric acid (HCl), constructed in 2004 with storage capacities of 20,000 gallons each.

(b) Tanks No. T101 and T111 for storing Spent Pickle Liquor (SPL), with storage capacities of 100,000 gallons each.

(c) Tanks T124 and T131, each storing Ferrous Chloride, each having a maximum capacity of 20,000 gallons, with a true vapor pressure of less than 3.5 kPa.

(d) Tank T121, storing Ferric Chloride, with a maximum capacity of 100,000 gallons, and a true vapor pressure of less than 3.5 kPa.

(e) Tanks T122 and T123, each storing Ferric Chloride, each with a maximum storage capacity of 20,000 gallons, and each with a maximum vapor capacity of less than 3.5 kPa.

(f) Scrap metal digesters where $FeCl_2$ is produced in a continuous reaction system, using SPL and scrap iron as raw materials and constructed in 2004.

(g) Three (3) chlorinators (204, 211, and 212) where reaction of $FeCl_2$ and Chlorine produces $FeCl_3$.

(h) One (1) wet scrubber for scrubbing HCl vapor and hydrogen gas produced, with a control efficiency of 80%, and flow rate of 15,000 cubic feet per minute.

(i) Two (2) filter presses for filtering ferrous chloride from the scrap metal digesters. Filtered material is then shipped offsite.

(j) One (1) natural gas-fired boiler, identified as B-1400, approved for construction in 2010, with a maximum heat input capacity of 8.4 MMBtu per hour, having no control device, and exhausting through stack CD-1408.

(k) One (1) induced draft wet cooling tower, identified as CT-400, constructed in 2005, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.

(l) One (1) induced draft wet cooling tower, identified as CT-1502, constructed in 2011, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.

(m) One (1) chlorine recovery column, identified as CRC-1 to capture chlorine gas from the emptying and filling of process vessels during batch operations.

(n) One (1) magnetite disolver identified as U-252.

(o) Six (6) additional storage tanks, each tank is 30,000 gallons and will be identified as T2500, T2501, T2502 T2600, T2601, and T2602.

(p) One (1) Cold Cleaner Degreaser/Parts Washer using 72 gallons of VOC solvent.

(q) One (1) natural gas fired Emergency Generator, manufactured by Generac, installed in 2011, with a maximum heat input of 0.123 MMBtu/hr, and a 48.28 hp engine.

Under 40 CFR 63, Subpart ZZZZ, this is a new affected source
Under 40 CFR 60, Subpart JJJJ, this is an affected source

(r) One (1) post chlorinator tank No. U-213.

(s) One (1) pre-chlorinator tank No. U-210.

(t) One (1) water holding/neutralization tank No. U-1.

(u) One (1) disengagement identified as tank No. U-203, cotaining water and caustic soda with a maximun capacity of 17,000 gallons, constructed in 2003, using scrubber (SC-1) as control device and exusting to stack.

(v) One (1) diesel tank having the capacity of 300 gallons for non-road going use.

(w) One (1) diesel tank having the capacity of 460 gallons for non-road going use.

(x) Iron Ore storage on site with maximum annual usage of 3,000 tons per year.

(y) One (1) HCL trans loading operation, identified as HCL trans-loader, approved in 2016 for construction, with a maximum capacity of 9,002,400 gallons, using a waste fume scrubber (SC-2) as control, and exhausting to stack.

(z) One (1) wet scrubber for scrubbing HCl vapor, identified as SC-2, approved in 2016 for construction with a control efficiency of 95% and flow rate of 10 gallons per minute.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this registration.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.

(d) For any cause which establishes in the judgment of the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to Registration No. 089-21908-00489 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

(a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.

(b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

(c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Registrant’s control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The Registrant shall implement the PMPs.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.

(c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this registration:

(a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)]

C.3 General Record Keeping Requirements [326 IAC 2-5.1-3(e)(2)]

(a) Records of all required monitoring data, reports and support information required by this registration shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Registrant, the Registrant shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this registration, for all record keeping requirements not already legally required, the Registrant shall be allowed up to ninety (90) days from the date of registration issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.4 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-5.1-3(e)(2)] [IC 13-14-1-13]

(a) Reports required by conditions in Section D of this registration shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) Unless otherwise specified in this registration, any notice, report, or other submission required by this registration shall be considered timely if the date postmarked on the

envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The first report shall cover the period commencing on the date of issuance of this registration or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this registration. For the purpose of this registration, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1 OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(a) Tanks No. T310 and T311 for storing ferrous/ferric chloride and hydrochloric acid (HCl), with storage capacities of 20,000 gallons each.

(b) Tanks No. T101 and T111 for storing Spent Pickle Liquor (SPL), with storage capacities of 100,000 gallons each.

(c) Tanks T124 and T131, each storing Ferrous Chloride, each having a maximum capacity of 20,000 gallons, with a true vapor pressure of less than 3.5 kPa.

(d) Tank T121, storing Ferric Chloride, with a maximum capacity of 100,000 gallons, and a true vapor pressure of less than 3.5 kPa.

(e) Tanks T122 and T123, each storing Ferric Chloride, each with a maximum storage capacity of 20,000 gallons, and each with a maximum vapor capacity of less than 3.5 kPa.

(f) Scrap metal digesters where $FeCl_2$ is produced in a continuous reaction system, using SPL and scrap iron as raw materials.

(g) Three (3) chlorinators (204, 211, and 212) where reaction of $FeCl_2$ and Chlorine produces $FeCl_3$.

(h) One (1) wet scrubber for scrubbing HCl vapor and hydrogen gas produced, with a control efficiency of 80%, and flow rate of 15,000 cubic feet per minute.

(i) Two (2) filter presses for filtering ferrous chloride from the scrap metal digesters. Filtered material is then shipped offsite.

(j) One (1) natural gas-fired boiler, identified as B-1400, approved for construction in 2010, with a maximum heat input capacity of 8.4 MMBtu per hour, having no control device, and exhausting through stack CD-1408.

(k) One (1) induced draft wet cooling tower, identified as CT-400, constructed in 2005, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.

(l) One (1) induced draft wet cooling tower, identified as CT-1502, constructed in 2011, having a maximum capacity of 2,395,860 gallons per year (273.5 gallons per hour), using no controls.

(m) One (1) chlorine recovery column, identified as CRC-1 to capture chlorine gas from the emptying and filling of process vessels during batch operations.

(n) One (1) magnetite disolver identified as U-252.

(o) Six (6) additional storage tanks, each tank is 30,000 gallons and will be identified as T2500, T2501, T2502, T2600, T2601, and T2602.

(q) One (1) natural gas fired Emergency Generator, manufactured by Generac, installed in

2011, with a maximum heat input of 0.123 MMBtu/hr, and a 48.28 hp engine.

Under 40 CFR 63, Subpart ZZZZ, this is a new affected source
Under 40 CFR 60, Subpart JJJJ, this is an affected source

(r) One (1) post chlorinator tank No. U-213.

(s) One (1) pre-chlorinator tank No. U-210.

(t) One (1) water holding/neutralization tank No. U-1.

(u) One (1) disengagement identified as tank No. U-203, cotaining water and caustic soda with a maximun capacity of 17,000 gallons, constructed in 2003, using scrubber (SC-1) as control device and exusting to stack.

(x) Iron Ore storage on site with maximum annual usage of 3,000 tons per year.

(y) One (1) HCL trans loading operation, identified as HCL trans-loader, approved in 2016 for construction, with a maximum capacity of 9,002,400 gallons, using a waste fume scrubber (SC-2) as control, and exhausting to stack.

(z) One (1) wet scrubber for scrubbing HCl vapor, identified as SC-2, approved in 2016 for construction with a control efficiency of 95% and flow rate of 10 gallons per minute.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate Emissions [326 IAC 6.8-1-2]

(a) Pursuant to 326 IAC 6.8-1-2(a), the particulate matter emissions from the non-combustion sources listed above, shall not exceed 0.03 grain per dry standard cubic foot.

(b) Pursuant to 326 IAC 6.8-1-2(b)(3), the particulate matter emissions from boiler B1400 shall not exceed 0.1 grain per dry standard cubic foot.

D.1.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

SECTION D.2 OPERATION CONDITIONS

Emission Unit Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(v) One (1) diesel tank having the capacity of 300 gallons for non-road going use.

(w) One (1) diesel tank having the capacity of 460 gallons for non-road going use.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Record Keeping and Reporting Requirement [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.2.1 Volatile Organic Liquid Storage Vessels [326 IAC 8-9-6]

(a) The following records shall be maintained for the life of the vessel and shall be submitted to the department containing the following information for each vessel:

(1) The vessel identification number.

(2) The vessel dimensions.

(3) The vessel capacity.

(b) Section C - General Record Keeping Requirements of this registration contains the Registrant's obligations with regard to the records required by this condition.

D.2.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

SECTION D.3 OPERATION CONDITIONS

Emission Unit Description [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

(p) One (1) Cold Cleaner Degreaser/Parts Washer using 72 gallons of VOC solvent.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.3.1 Cold Cleaner Degreaser Control Equipment and Operating Requirements [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Degreaser Control and Equipment Operating Requirements), the Permittee shall:

(a) Ensure the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a device for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(5) Provide a permanent, conspicuous label that lists the operating requirements in subdivisions (3), (4), (6), and (7).

(6) Store waste solvent only in closed containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) Ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
(B) A water cover when solvent used is insoluble in, and heavier than, water.
(C) A refrigerated chiller.
(D) Carbon adsorption.
(E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:
(A) must be a solid, fluid stream; and
(B) shall be applied at a pressure that does not cause excessive splashing.

D.3.2 Material Requirements for Cold Cleaner Degreasers [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), on and after January 1, 2015, the Permittee shall not operate a cold cleaning degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

D.3.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for cold cleaning degreaser and its associated control device. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Record Keeping and Reporting Requirement [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.3.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.3, on and after January 1, 2015, the Permittee shall maintain the following records for each purchase of solvent used in the cold cleaner degreasing operations. These records shall be retained on-site or accessible electronically for the most recent three (3) year period and shall be reasonably accessible for an additional two (2) year period.

(1) The name and address of the solvent supplier.

(2) The date of purchase.

(3) The type of solvent purchased.

(4) The total volume of the solvent purchased.

(5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(b) Section C - General Record Keeping Requirements of this registration contains the Registrant’s obligations with regard to the records required by this condition.

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(q) One (1) natural gas fired Emergency Generator, manufactured by Generac, installed in 2011, with a maximum heat input of 0.123 MMBtu/hr, and a 48.28 hp engine.

Under 40 CFR 63, Subpart ZZZZ, this is a new affected source
Under 40 CFR 60, Subpart JJJJ, this is an affected source

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements

E.1.1 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR 63, Subpart ZZZZ] [326 IAC 20-82]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, the Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ), which are incorporated by reference as 326 IAC 20-82 (included as Attachment A of this permit), for the above listed emissions units, as specified as follows.

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585
(3) 40 CFR 63.6590(a)(2)(iii) and (c)(1)
(4) 40 CFR 63.6665
(5) 40 CFR 63.6670
(6) 40 CFR 63.6675

SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(q) One (1) natural gas fired Emergency Generator, manufactured by Generac, installed in 2011, with a maximum heat input of 0.123 MMBtu/hr, and a 48.28 hp engine.

Under 40 CFR 63, Subpart ZZZZ, this is a new affected source
Under 40 CFR 60, Subpart JJJJ, this is an affected source

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements

E.2.1 General Provisions Relating to New Source Performance [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the above listed emissions units, except as otherwise specified in 40 CFR Part 60, Subpart JJJJ.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.2.2 New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion [40 CFR Part 60, Subpart JJJJ] [326 IAC 12]

Pursuant to 40 CFR 60, Subpart JJJJ, the Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart JJJJ, which are incorporated by reference as 326 IAC 12 (included as Attachment B of this permit), for the above listed emission unit as specified as follows.

(1) 40 CFR 60.4230(a)(4)(iv)
(2) 40 CFR 60.4233(d)
(3) 40 CFR 60.4234
(4) 40 CFR 60.4237(c)
(5) 40 CFR 60.4243(b), (d), (f), (g)
(6) 40 CFR 60.4245
(7) 40 CFR 60.4246
(8) 40 CFR 60.4248
(9) Table 1

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

REGISTRATION
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Kemira Water Solutions, Inc.
Address:	3761 Canal Street
City:	East Chicago, Indiana 46312
Phone Number:	219-397-2646
Registration No.:	089-21908-00489

I hereby certify that Kemira Water Solutions, Inc. is :
- ☐ still in operation.
- ☐ no longer in operation.

I hereby certify that Kemira Water Solutions, Inc. is :
- ☐ in compliance with the requirements of Registration No. 089-21908-00489.
- ☐ not in compliance with the requirements of Registration No. 089-21908-00489.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Administrative Amendment

Source Description and Location

Source Name:	**Kemira Water Solutions, Inc.**
Source Location:	**3761 Canal Street, East Chicago, Indiana 46312**
County:	**Lake County**
SIC Code:	**2819 (Industrial Inorganic Chemicals, NEC)**
Registration No.:	**089-21908-00489**
Registration Issuance Date:	**December 2, 2005**
Administrative Amendment No.:	**089-37481-00489**
Permit Reviewer:	**Vasantha Palakurti**

On August 5, 2016, the Office of Air Quality (OAQ) received an application from Kemira Water Solutions, Inc. related to a modification to an existing facility to produce Ferrous Chloride ($FeCl_2$) and Ferric Chloride ($FeCl_3$).

Existing Approvals

The source was issued Registration No. 089-21908-00489 on December 2, 2005. The source has since received the following approvals:

(a) Notice-Only Change No. 089-24042-00489, issued on January 3, 2007;

(b) Notice-Only Change No. 089-28818-00489, issued on January 22, 2010;

(c) Notice-Only Change No. 089-30208-00489, issued on March 17, 2011; and

(d) Registration Revision No. 089-35726-00489, issued on June 01, 2015

County Attainment Status

The source is located in Lake County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of East Chicago bounded by Columbus Drive on the north; the Indiana Harbor Canal on the west; 148th Street, if extended, on the south; and Euclid Avenue on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of East Chicago and Lake County.
O_3	On June 11, 2012, the U.S. EPA designated Lake County nonattainment, for the 8-hour ozone standard. [12]
$PM_{2.5}$	Unclassifiable or attainment effective February 6, 2012, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Attainment effective March 11, 2003, for the cities of East Chicago, Hammond, Whiting, and Gary. Unclassifiable effective November 15, 1990, for the remainder of Lake County.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

[1]The U. S. EPA has acknowledged in both the proposed and final rulemaking for this redesignation that the anti-backsliding provisions for the 1-hour ozone standard no longer apply as a result of the redesignation under the 8-hour ozone standard. Therefore, permits in Lake County are no longer subject

Pollutant	Designation
to review pursuant to Emission Offset, 326 IAC 2-3 for the 1-hour standard. [2]The department has filed a legal challenge to U.S. EPA's designation in 77 FR 34228.	

(a) Ozone Standards
U.S. EPA, in the Federal Register Notice 77 FR 112 dated June 11, 2012, has designated Lake County as nonattainment for ozone. On August 1, 2012, the air pollution control board issued an emergency rule adopting the U.S. EPA's designation. This rule became effective August 9, 2012. IDEM does not agree with U.S. EPA's designation of nonattainment. IDEM filed a suit against U.S. EPA in the U.S. Court of Appeals for the DC Circuit on July 19, 2012. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's designation. Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Therefore, VOC and NO_x emissions were evaluated pursuant to the requirements of Emission Offset, 326 IAC 2-3.

(b) $PM_{2.5}$
Lake County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Lake County has been classified as attainment or unclassifiable in Indiana for SO2, Co, PM2.5, PM10, PB. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants, and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) applicability.

Status of the Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed amendment, after consideration of all enforceable limits established in the effective permits:

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Amendment (tons/year)*								
	PM	PM10*	PM2.5*	SO_2	NOx	VOC	CO	Total HAPs	Worst Single HAP
Boiler	0.07	0.27	0.27	0.02	3.61	0.20	3.03	0.07	0.06
Emergency Generator	0.005	0.01	0.01	0.00	0.51	0.02	0.47	0.01	0.01
HCl Scrubber	5.74	5.74	5.74	0	0	0	0	2.63	2.63
CRC-1	0	0	0	0	0	0	0	0.003	0.003
Degreaser	0	0	0	0	0	0.30	0	0	0
HCl & SPL Storage Tanks	0	0	0	0	0	0	0	1.75	1.75
Storage and Process Tanks	0	0	0	0	0	negl.	0	negl.	negl.
Cooling Towers	2.74	2.74	2.74	0	0	0	0	0	0
Fugitive Dust Iron Ore Storage & Handling	1.66	1.66	0.17	0	0	0	0	0	0
Fugitive Dust Roads	0.45	0.11	0.01	0	0	0	0	0	0
Total PTE of Entire Source	**10.66**	**10.53**	**8.94**	**0.02**	**4.12**	**0.51**	**3.50**	**4.46**	**2.63 HCl**
Exemptions Levels	<5	<5	<5	<10	<10	<10	<25	<25	<10
Registration Levels	<25	<25	<25	<25	<25	<25	<100	<25	<10

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".

Description of Proposed Amendment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Kemira Water Solutions, Inc. on August 5, 2016, relating to construction of a new Hydrochloric acid trans-loading operation using scrubber as control device to facilitate HCL transfer from rail cars to truck trailers.
The following is a list of the new emission units and pollution control device:

(a) One (1) HCL trans loading operation, identified as HCL trans-loader, approved in 2016 for construction, with a maximum capacity of 9,002,400 gallons, using a waste fume scrubber as control, and exhausting to stack.

(b) One (1) wet scrubber for scrubbing HCl vapor, identified as SC-2, approved in 2016 for construction with a control efficiency of 95% and flow rate of 10 gallons per minute.

Enforcement Issues

There are no pending enforcement actions related to this Amendment.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Administrative Amendment

The following table is used to determine the appropriate revision level under 326 IAC 2-5.5-6. This table reflects the PTE before controls of the proposed amendment.

Process/ Emission Unit	PTE of Proposed Amendment (tons/year)								
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	Total HAPs	Worst Single HAP
HCL Trans-loader with srcubber (SC-2)	1.44	1.44	1.44	0	0	0	0	1.58	1.58 HCL
Total PTE of Proposed Amendment	1.44	1.44	1.44	0	0	0	0	1.58	1.58 HCL

negl. = negligible

This Registration is being revised through an Administrative Amendment pursuant to 326 IAC 2-5.5-6(d), because the amendment involves the construction of with a modification with total potential to emit (PTE) PM, PM2.5 and PM10 less than the thresholds in 326 IAC 2-1.1-3(e)(1) (Exemptions).

PTE of the Entire Source After Issuance of the Administrative Amendment

The table below summarizes the potential to emit of the entire source after issuance of this amendment, reflecting all limits, of the emission units.

	Potential To Emit of the Entire Source with the Amendment (tons/year)								
Process/ Emission Unit	PM	PM10 *	PM2.5*	SO_2	NOx	VOC	CO	Total HAPs	Worst Single HAP
HCL Trans-loader with srcubber (SC-2)	**1.44**	**1.44**	**1.44**	**0**	**0**	**0**	**0**	**1.58**	**1.58 HCL**
Boiler	0.07	0.27	0.27	0.02	3.61	0.20	3.03	0.07	0.06
Emergency Generator	0.005	0.01	0.01	0.00	0.51	0.02	0.47	0.01	0.01
HCl Scrubber	5.74	5.74	5.74	0	0	0	0	2.63	2.63
CRC-1	0	0	0	0	0	0	0	0.003	0.003
Degreaser	0	0	0	0	0	0.30	0	0	0
HCl & SPL Storage Tanks	0	0	0	0	0	0	0	1.75	1.75
Storage and Process Tanks	0	0	0	0	0	negl.	0	negl.	negl.
Cooling Towers	2.74	2.74	2.74	0	0	0	0	0	0
Fugitive Dust Iron Ore Storage & Handling	1.66	1.66	0.17	0	0	0	0	0	0
Fugitive Dust Roads	0.45	0.11	0.01	0	0	0	0	0	0
Total PTE of Entire Source	~~19.27~~ **12.10**	~~19.15~~ **11.97**	~~17.55~~ **10.38**	0.02	4.12	0.51	3.50	~~4.46~~ **6.04**	2.63 HCl
Exemptions Levels	5	5	5	10	10	10	25	25	10
Registration Levels	<25	<25	<25	<25	<25	<25	<100	<25	<10

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

The table below summarizes the potential to emit of the entire source after issuance of this amendment, reflecting all limits, of the emission units.

Process/ Emission Unit	Potential To Emit of the Entire Source with the Amendment(tons/year)								
	PM	PM10*	PM2.5*	SO_2	NOx	VOC	CO	Total HAPs	Worst Single HAP
HCL Trans-loader with srcubber	1.44	1.44	1.44	0	0	0	0	1.58	1.58 HCL
Boiler	0.07	0.27	0.27	0.02	3.61	0.20	3.03	0.07	0.06
Emergency Generator	0.005	0.01	0.01	0.00	0.51	0.02	0.47	0.01	0.01
HCl Scrubber	5.74	5.74	5.74	0	0	0	0	2.63	2.63
CRC-1	0	0	0	0	0	0	0	0.003	0.003
Degreaser	0	0	0	0	0	0.30	0	0	0
HCl & SPL Storage Tanks	0	0	0	0	0	0	0	1.75	1.75
Storage and Process Tanks	0	0	0	0	0	negl.	0	negl.	negl.
Cooling Towers	2.74	2.74	2.74	0	0	0	0	0	0
Fugitive Dust Iron Ore Storage & Handling	1.66	1.66	0.17	0	0	0	0	0	0
Fugitive Dust Roads	0.45	0.11	0.01	0	0	0	0	0	0
Total PTE of Entire Source	**12.10**	**11.97**	**10.38**	**0.02**	**4.12**	**0.51**	**3.50**	**6.04**	**2.63 HCl**
Exemptions Levels	5	5	5	10	10	10	25	25	10
Registration Levels	<25	<25	<25	<25	<25	<25	<100	<25	<10

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

(a) This amendment will not change the registration status of the source, because the uncontrolled/unlimited potential to emit of PM, PM2.5 and PM10 from the entire source will still be within the ranges listed in 326 IAC 2-5.5-1(b)(1) and the PTE of all other regulated criteria pollutants will still be less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source will still be subject to the provisions of 326 IAC 2-5.5 (Registrations).

(b) This amendment will not change the minor status of the source, because the uncontrolled/unlimited potential to emit of any single HAP will still be less than ten (10) tons per year and the PTE of a combination of HAPs will still be less than twenty-five (25) tons per year.

Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

The federal rules applicable to the existing emission units at this source will not change as a result of this amendment.

The federal rule applicability for this amendment is as follows:

New Source Performance Standards (NSPS)

(a) The requirements of the New Source Performance Standard for Storage Vessels Of Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb, are not included for this proposed amendment, since HCL trans-loader does not store VOCs. Therefore, the requirements of 40 CFR 60, Subparts Kb do not apply.

(b) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this proposed amendment.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Hydrochloric Acid Production, 40 CFR 63, Subpart NNNNN, are not included for this proposed amendment, since this source is not a major source of HAPs.

(d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included for this proposed amendment.

Compliance Assurance Monitoring (CAM)

(e) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the registration, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The state rules applicable to the existing emission units at this source will not change as a result of this amendment.

The following state rules are applicable to the proposed amendment:

(a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.

(b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The proposed amendment is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the (new/modified unit(s)) is less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

(c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is located in Lake County, it has actual emissions of NOx and VOC of less than twenty-five (25) tons per year, and it does not emit lead

into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

(d) 326 IAC 5-1 (Opacity Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this registration:

(1) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

(e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

(f) 326 IAC 6.8-10 (Lake County: Fugitive Particulate Matter)
Pursuant to 326 IAC 6.8-10(a), the requirements under 326 IAC 6.8-10-3 and 326 IAC 6.8-10-4 do not apply since the the source is not listed and existing roads and new HCL trans-loader have potential fugitive particulate emissions less than 5 tons per year.

(g) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

(h) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

HCL Trans-Loading Operation

(i) 326 IAC 6.8-1-2 (Particulate Emission Limitations; Modification by Commissioner) and 326 IAC 6.8-2 (Lake County: PM10 Emission Requirements)
Sources or facilities in Lake County shall comply with the emission limits in 326 IAC 6.8-1-2 and meet the requirements in 326 IAC 6.8-2 if specifically listed. 326 IAC 6.8-1-2 applies if the source or facility is not specifically listed but has the potential to emit one hundred (100) tons or more or actual emissions of ten (10) tons or more of particulate matter per year. Kemira Water Solutions, Inc. is not specifically listed in 326 IAC 6.8-2. The source however, has actual emissions greater than 10 tons per year and is therefore subject to PM limitations in 326 IAC 6.8-1-2.

Pursuant to 326 IAC 6.8-1-2(a) particulate matter (PM) emissions from the HCL Trans-Loading Operation shall be limited to 0.03 grain per dry standard cubic foot of exhaust air.

(j) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The proposed amendment is not subject to the requirements of 326 IAC 8-1-6, since there are no VOC potential emissions from this unit.

(k) There are no other 326 IAC 8 Rules that are applicable to the unit.

(l) 326 IAC 20-76-1 (Hydrochloric Acid Production)
The proposed amendment is not subject to the requirements of 326 IAC 20-76, since this unit does not apply to 40CFR 63.8953, Subpart NNNNN.

Proposed Changes

The following changes listed below are due to the proposed amendment. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text:

A.2 Emission Units and Pollution Control Equipment Summary
This stationary source consists of the following emission units and pollution control devices:

***

(u) One (1) disengagement tank**, identified as tank** No. U-203 **cotaining water and caustic soda with a maximun capacity of 17,000 gallons, constructed in 2003, using scrubber (SC-1) as control device and exusting to stack.**

(y) One (1) HCL trans loading operation, identified as HCL trans-loader, approved in 2016 for construction, with a maximum capacity of 9,002,400 gallons, using a waste fume scrubber (SC-2) as control, and exhausting to stack.

(z) One (1) wet scrubber for scrubbing HCl vapor, identified as SC-2, approved in 2016 for construction with a control efficiency of 95% and flow rate of 10 gallons per minute.

SECTION D.1 OPERATION CONDITIONS

Emission Unit Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

***

(u) One (1) disengagement tank**, identified as tank** No. U-203 **cotaining water and caustic soda with a maximun capacity of 17,000 gallons, constructed in 2003, using scrubber (SC-1) as control device and exusting to stack.**

***

(y) One (1) HCL trans loading operation, identified as HCL trans-loader, approved in 2016 for construction, with a maximum capacity of 9,002,400 gallons, using a waste fume scrubber (SC-2) as control, and exhausting to stack.

(z) One (1) wet scrubber for scrubbing HCl vapor, identified as SC-2, approved in 2016 for construction with a control efficiency of 95% and flow rate of 10 gallons per minute.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

SECTION D.2 OPERATION CONDITIONS

Emission Unit Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(v) One (1) diesel tank having the capacity of 300 gallons for non-road going use.

(w) One (1) diesel tank having the capacity of 460 gallons for non-road going use.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

***

~~D.2.2 Particulate Emissions [326 IAC 6.8-1-2]~~

~~Pursuant to 326 IAC 6.8-1-2(a), the particulate matter emissions from the diesel storage tanks shall not exceed 0.03 grain per dry standard cubic foot.~~

D.2.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

SECTION D.3 OPERATION CONDITIONS

Emission Unit Description [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

(p) One (1) Cold Cleaner Degreaser/Parts Washer using 72 gallons of VOC solvent.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

***

D.3.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for cold cleaning degreaser and its associated control device. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

~~D.3.3~~ **D.3.4** Record Keeping Requirements

***

Conclusion and Recommendation

Unless otherwise stated, information used in this amendment was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on August 5, 2016.

The construction and operation of this proposed amendment shall be subject to the conditions of the attached proposed Administrative Amendment No. 089-37481-00489. The staff recommends to the Commissioner that this Administrative Amendment be approved.

IDEM Contact

(a) Questions regarding this proposed registration can be directed to Vasantha Palakurti at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) - 234 - 9694 or toll free at 1-800-451-6027 extension 4 - 9694.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Appendix A: Emissions Calculations
Emissions Summary

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-37481-00489
Reviewer: Vasantha Palakurti

Total Source Emissions (tons per year)										
Emissions Units	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**Total HAPs**	**Worst Single HAP**	
HCL Trans-loader w/ Scrubber	1.44	1.44	1.44	-	-	-	-	1.580	1.580	HCL
Boiler	0.07	0.27	0.27	0.02	3.61	0.20	3.03	0.07	0.06	Hexane
Emergency Generator	0.005	0.01	0.01	0.00	0.51	0.02	0.47	0.01	0.01	Formaldehyde
HCl Scrubber	14.35	14.35	14.35	-	-	-	-	2.63	2.63	HCl
CRC-1	-	-	-	-	-	-	-	0.003	0.003	Chlorine
Degreaser	-	-	-	-	-	0.30	-	-	-	
HCl & SPL Storage Tanks	-	-	-	-	-	-	-	1.75	1.75	HCl
Storage and Process Tanks	-	-	-	-	-	Negl.	-	Negl.	Negl.	
Cooling Towers	2.74	2.74	2.74	-	-	-	-	-	-	
Dust Iron Ore Storage & Handling	1.66	1.66	0.17	-	-	-	-	-	-	
Fugitive Dust Roads	0.45	0.11	0.01	-	-	-	-	-	-	
Total Emissions	**20.71**	**20.59**	**18.99**	**0.02**	**4.12**	**0.51**	**3.50**	**6.04**	**2.63**	Hexane

Appendix A: Emissions Calculations
New Emission Units Summary

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-37481-00489
Reviewer: Vasantha Palakurti

New Units Emissions (tons per year)										
Emissions Units	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**Total HAPs**	**Worst Single HAP**	
HCL Trans Loader w/ Scrubber	1.44	1.44	1.44	-	-	-	-	1.580	1.580	HCL
Total Emissions	**1.44**	**1.44**	**1.44**	**0.00**	**0.00**	**0.00**	**0.00**	**1.58**	**1.58**	**0.00**

Appendix A: Emissions Calculations
HCL Trans-loader and Scrubber (SC-2)

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-37481-00489
Reviewer: Vasantha Palakurti

	Losses				After control
Trans-loading HCl tank	Working Loss	Breathing Loss	HAP (HCl) lbs	HAP (HCl) tpy	HAP (HCl) tpy
Potential Emission from transfer	3033.26	128.01	3161.26	1.58	0.08

Trans-loader Scrubber (SC-2)	Pollutant		
	PM*	PM10*	PM2.5*
Potential Emission in tons/yr	**1.44**	**1.44**	**1.44**

Tank	
Shell Length (ft)	38
Diameter (ft)	4.8
Volume (gallons)	5448
Turnovers	1652
Net Throughput (gal/yr)	9002400

3.59

Pollutant Mass Emission Rate, PMR, lbs./hr.	
PM=PM10 (g)	0.0252
PM (mg)	25.2
PMR	1.3107

Scrubber

Efficiency	95%	
Capacity	10	GPM
SC-1 capacity	40	GPM
	8760	hr

Methology

HCL Emission Calculations:

The emissions estimates are based on TANKS 4.0.9d calculations

PM Emission Calculations

The source performed an engineering emissions test on scrubber SC-1 unit to validate the currently permitted emission factors. Emission rates for the transloader unit scrubber were calculated using the SC-1 emission factor applied to 8760 hr of operation. The transloader unit scrubber is rated at a maximum capacity of 10 gallons per minute, this is 25% or 4 times lower than the capacity of the existing HCL scrubber. This difference has been incorporated into out emissions calculations for the transloading scrubber.

The PM, PM10, PM2.5 emission rates were sourced from this recent engineering test intially permitted in 089-35726-00489

PM=PM10

Transloader scrubber capacity (GPM): 40/10=4

PMR x 8760/2000 / 4= PM tpy

PM (mg) x 14371.85 Qstd x 60/(3654.96% VmStd x 1000 x 453.59 = PMR

The scubber does not control particulate emissions

Emissions Calculations
Existing HCl Scrubber (SC-1)

Company Name: **Kemira Water Solutions, Inc.**
Address City IN Zip: **3761 Canal Street, East Chicago, Indiana 46312**
Permit Number: **089-37481-00489**
Reviewer: **Vasantha Palakurti**

Pollutant Mass Emission Rate, PMR	
PM=PM10/PM2.5 (g)	0.0252
*Mn (mg)	25.2
PMR (lb/hr)	1.3107

HCl	
0.6	lb/hr

* As determined per 40 CFR Part 60 Appendix A-3, Method 5, Mn = Total amount of particulate matter collected, mg.

Potential Emissions Before HCl Scrubber (SC-1)	Pollutant			
	PM	PM10	PM2.5	HCl
Potential Emission before controls in tons/yr	**14.35**	**14.35**	**14.35**	**2.63**

Potential Emissions After HCl Scrubber (SC-1)	Pollutant			
	PM	PM10	PM2.5	HCl
Emission Factor after controls in mg/hr				0.72
Emission Factor after controls in lb/hr	1.3107	1.3107	1.3107	1.59E-06
Potential Emission after controls in tons/yr	**5.74**	**5.74**	**5.74**	**0.00001**

Methology

Potential HCL Emission Before Contols:
The emissions estimates are based on actual tests conducted on the HCl scrubber at a similar Kemira facility located in California.
0.6 lb/hr x 8760 hr/yr x 1 ton/2000 lb = 2.63 tpy

Potential HCL Emission After Controls:
0.72mg/hr * 0.0000022046 lb/mg * 8760 hr/yr * 1 ton/2000lbs = 1.0 E-5 tpy

Potential PM Emission After Controls:
The source recently performed an engineering emissions test on this unit to validate the currently permitted emission factors.
The PM, PM10, PM2.5 emission rates were sourced from this recent engineering test.
PM=PM10/PM2.5
Mn (mg) x 14371.85 Qstd x 60/(3654.96% VmStd x 1000 x 453.59) = PMR
PMR x 8760/2000 = PM tpy

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Kemira Water Solutions, Inc.**
Address City IN Zip: **3761 Canal Street, East Chicago, Indiana 46312**
Permit Number: **089-37481-00489**
Reviewer: **Vasantha Palakurti**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
8.4	1020	72.1

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.07	0.27	0.27	0.02	3.61	0.20	3.03

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	7.575E-05	4.328E-05	2.705E-03	6.493E-02	1.226E-04	**6.787E-02**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.804E-05	3.968E-05	5.050E-05	1.371E-05	7.575E-05	**1.977E-04**

Methodology is the same as above.
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Total HAPs	**6.807E-02**
Worst HAP	**6.493E-02**

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas

36 kW Emergency Generator
Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-37481-00489
Reviewer: Vasantha Palakurti

Maximum Output Horsepower Rating (Btu/hr)*	503,000
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	252
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.25

*Based on specification sheet worse case 100% rated load: (Btu content = 503 cubic feet NG per hour X 1000)

	Pollutant						
Criteria Pollutants	PM**+	PM10**+	PM2.5**+	SO2+	NOx++	VOC+	CO+
Emission Factor (lb/MMBtu)	3.84E-02	4.83E-02	4.83E-02	5.88E-04	4.08E+00	1.20E-01	3.72E+00
Potential Emissions (tons/yr)	0.0048	0.01	0.01	0.000	0.51	0.02	0.47

**PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 plus condensable PM. PM2.5 emission factor is filterable PM2.5 plus condensable PM.
Criteria Pollutant Emission Factors are from AP-42 (Supplement F, July 2000), Tables 3.2-1 through 3.2-3 (wrorst case EF was chosen for each pollutant). Where: Table 3.2-1 = +, Table 3.2-2 = ++, and Table 3.2-3 = +++

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde++	8.36E-03	0.0011
Acrolein+	7.78E-03	0.0010
Benzene+	1.94E-03	0.0002
1,3-Butadiene+	8.20E-04	0.0001
Formaldehyde+	5.52E-02	0.0069
Methanol+++	3.06E-03	0.0004
Hexane+++	1.10E-03	0.0001
2,2,4-Trimethylpentane+	8.46E-04	0.0001
Toluene+	9.63E-04	0.0001
	Total	**0.01**

HAP pollutants consist of the nine highest HAPs included in AP-42 Tables 3.2-1 through 3.2-3 (wrorst case EF was chosen for each pollutant).
Where: Table 3.2-1 = +, Table 3.2-2 = ++, and Table 3.2-3 = +++
**PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Methodology
Potential Fuel Usage (MMBtu/yr) = [Maximum Output Horsepower Rating (hp)] * [Brake Specific Fuel Consumption (Btu/hp-hr)] * [Maximum Hours Operated per Year (hr/yr)] / [1000000 Btu/MMBtu]

Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]
Note: Informaiton submitted for the 450 HP emg generator dids not include the Brake Specific Fuel Consumption (BSFC) or engine specification for output at 100% load and maximum speed. Therefore the BSFC was assumed to be 7600 Btu/hp-hr for purposes of applying emission factors.

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide

Emissions Calculations
Batch Operations Emission Calculations
Chlorine Recovery Column (CRC-1)
Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-37481-00489
Reviewer: Vasantha Palakurti

Potential Backflow Capacity per Cycle							
Tank ID	Tank Capacity (Gal)	Vapor Space (% of Tank Capacity)	Cl^2% of Tank Volume	Gallons/Ft^3	Ft^3/mole (STP)	Lbs/mole Cl^2	Potential Backflow (lbs/Cl^2)/Batch
U-204	17,500	90.00%	4.00%	7.48	359	71	16.66

Potential Discharge / Emission Rate							
Process ID	Tank Capacity (Gal)	Tank Fill Rate (gal/min)	Potential Backflow (lbs/Cl^2)/Batch	Cl^2 Concentration (lbs/gal)	Cl^2 Discharge Rate (lbs/min)	Cl^2 Discharge Time (min)	Cl^2 Potential Emission Rate (lbs/hr)
Batch	17,500	300	16.66	0.0010	0.29	58.33	17.13

Uncontrolled Potential Emissions							
Cl^2 Input					CRC-1	Cl^2 Emissions	
Process ID	Potential Backflow (lbs/Cl^2)/ Batch	Maximum Batch Cycles per Week	Cl^2 (lbs/yr)	Cl^2 (tons/yr)	Recovery (%)	Cl^2 Emissions (lbs/yr)	Cl^2 Emissions (tons/yr)
Batch	16.66	7.00	6063.23	3.03	99.90%	6.06	0.003

Only 1 in 3 batches can force out vapors from dome.

Controlled Potential Emissions (SC-1 as control)					
Process ID	Cl^2 Emissions (lbs/yr)	Cl^2 Emissions (tons/yr)	SC-1 Control Efficiency (%)	Cl^2 Emissions (lbs/yr)	Cl^2 Emissions (tons/yr)
Batch	6.06	0.00	50.00%	3.03	0.002

Methodology
Potential Backflow = Tank Capacity (17,500)/7.48 (gallns/cu.ft.)/359 (cu.ft./mole)*71 (lbs. per mole of Cl2)
Cl2 Concentration (lbs/gal) = Potential Backflow/Tank Capacity (17,500)
Cl2 (lbs/yr) = Potential Backflow (lbs/Cl2)/Batch*Maximum Batch cycles per week*52(weeks per year)
Cl2 (tons/yr) = Cl2 (lbs/yr)/2000 (lbs/ton)
Uncontrolled Cl2 emissions (lbs/yr) = Cl2 (lbs/yr) * (1-Recovery % (99.9))
Uncontrolled Cl2 emissions (tons/yr) = Cl2 emissions (lbs/yr)/2000 (lbs/ton)
The chlorine control efficiency of SC-1 has been conservativley estimated at 50%.

Emissions Calculations
Cold Cleaner Degreaser

Company Name: **Kemira Water Solutions, Inc.**
Address City IN Zip: **3761 Canal Street, East Chicago, Indiana 46312**
Permit Number: **089-37481-00489**
Reviewer: **Vasantha Palakurti**

Emission units	Density (Lb/Gal)	Weight % Organics	Volume % Water	Annual Throughput of Solvent (Gals/yr)	Potential VOC (pounds per year)	Potential VOC (tons per year)
Parts Washer	8.2	100.0%	0.0%	72.0	590.40	0.30
			Total:		**590.40**	**0.30**

Note:
The annual throughput of solvent, provided by the source was 20 gallons twice a year

METHODOLOGY
Potential VOC (Pounds per year) = Annual throughput of solvent (gals/year) * density (lbs/gal)
Potential VOC Tons per year) = Annual throughput of solvent (gals/year) * density (lbs/gal)/2000 (lbs/ton)

Appendix A: Emission Calculations
Two (2) 20kgal HCl Tanks (T310 and T311) and Two (2) 100kgal Spent Liquior (SPL) Tanks (T101 and T111)
Volatile Organic Compound (VOC)

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-37481-00489
Reviewer: Vasantha Palakurti

Volatile Organic Compound (VOC) Emissions From Storage Tanks (Working and Breathing Losses) Using US EPA TANKS Version 4.09 program
Source: AP-42, Chapter 7.1, Table 7.1-7, November 2006

Storage Tank ID	Product Stored	Tank Type	Tank Color/Shade	Tank Dimensions	Maximum Liquid Volume (gallons)	Product Throughput (gallons/yr)	HAP Working Losses (lbs/yr)	HAP Standing Losses (lbs/yr)	Total HAP Losses (lbs/yr)	VOC Working Losses (lbs/yr)	VOC Standing Losses (lbs/yr)	Total HAP Losses (lbs/yr)	VOC/HAP Working Losses (tons/yr)	VOC/HAP Standing Losses (tons/yr)	Total Losses (tons/yr)
T310	HCl	AST/ Vertical	White	24' X 12'	20,000	1,500,000	558.57	17.87	576.44	-	-	-	0.28	0.01	0.29
T311	HCl	AST/ Vertical	White	24' X 12'	20,000	1,500,000	558.57	17.87	576.44	-	-	-	0.28	0.01	0.29
T101	SPL*	AST/ Vertical	White	27.75' X 15.5'	100,000	3,500,000	1,156.75	25.80	1,182.55	-	-	-	0.58	0.01	0.59
T111	SPL*	AST/ Vertical	White	27.75' X 15.5'	100,000	3,500,000	1,156.75	4.78	1,161.53	-	-	-	0.58	0.00	0.58
T124, T131, T121, T122, T123	**	AST/ Vertical	White	various	30,000		-	-	-	-	-	-	-	-	Negl.
T2500, T2501, T2502, T2600, T2601, T2602	**	AST/ Vertical	White	various	30,000		-	-	-	-	-	-	-	-	Negl.
300 gallon tank	diesel	AST/ Vertical	White	5' X 3' 5"	300	5,000	-	-	-	0.08	0.05	0.13	0.00	0.00	0.00
460 gallon tank	diesel	AST/ Vertical	White	5' X 4' 3"	460	7,000	-	-	-	0.11	0.08	0.19	0.00	0.00	0.00
Chlorinators - 204, 211, and 212	**	AST/ Vertical	White	various	various		-	-	-	-	-	-	-	-	Negl.
Process tanks - U-252, U-213, U210, U-1, U-203	**	AST/ Vertical	White	various	various		-	-	-	-	-	-	-	-	Negl.
								Totals	**3,496.96**						**1.75**

* The spent pickle liquor (SPL) is contains only a portion of HCl. As a worse case the HCl was assumed to be 100%.

** The other storage tanks and process tanks store liquids that are not VOCs or HAP, have negligible concentrations of HAP, or have HCl emission represented by the HCl Scrubber calculations.

Methodology
Loss Calculations (HAP Emissions)
Standing Storage LS (lb/yr) = 365 (WV)(VV)(KE)(KS)
Working Loss LW (lb/yr) = 0.0010 (MV)(PVA)(Q)(KN)(KP)
Total Loss LT (lb/yr) = LS + LW

Tanks T310 & T311 Where:

W_V =	0.01	Vapor Density in lb/cubic feet (with a molecular wt of 36.46)
V_V =	198.32	Vapor Space Volume in cubic feet
K_E =	0.05	Vapor Space Expansion Factor
K_S =	0.93	Vented Vapor Space Saturation Factor
M_V =	36.46	Molecular Weight of the Vapor in lb/lb-mole
P_{VA} =	0.77	Total Mixture Pressure in psi
Q =	35,714.29	bbl/yr
K_N =	0.56	(Working Loss Turnover Factor) = (180 + N) / 6N for more than 36 turnovers per year, AP-42, Chapter 7.1, Eq. 1-29. (Working Loss Turnover Factor) = 1.0 for 36 or less turnovers per year, AP-42, Chapter 7.1, Eq. 1-29 N = The number of annual turnovers per year
K_P =	1.00	(Working Loss Product Factor) = 0.75 for crude oils and 1.0 for all other organic, AP-42, Chapter 7.1, Eq. 1-31

Standing Storage Loss LS (lb/yr) = 365 (0.005)(198.32)(0.05)(0.93) = 17.87 lb/yr
Working Loss LW (lb/yr) = 0.0010 (36.46)(0.77)(35714.29)(0.555)(1) = 558.57 lb/yr

Tanks 101 and T111 Where:

WV =	0.01	Vapor Density in lb/cubic feet - See Sheet 7 for Calculation
VV =	283.70	Vapor Space Volume in cubic feet - See Sheet 1 for Calculation
KE =	0.05	Vapor Space Expansion Factor - See Sheet 8 for Calculation
KS =	0.94	Vented Vapor Space Saturation Factor - See Above for Calculation
MV =	36.46	Molecular Weight of the Vapor in lb/lb-mole - See Sheet 7 for Calculation
PVA =	0.77	Total Mixture Pressure in psi - See Sheet 6 for Calculation
Q =	83,333.33	bbl/yr - See Sheet 1 for Calculation
KN =	0.49	(Working Loss Turnover Factor) = (180 + N) / 6N for more than 36 turnovers per year, AP-42, Chapter 7.1, Eq. 1-29. (Working Loss Turnover Factor) = 1.0 for 36 or less turnovers per year, AP-42, Chapter 7.1, Eq. 1-29 N = The number of annual turnovers per year
KP =	1.00	(Working Loss Product Factor) = 0.75 for crude oils and 1.0 for all other organic, AP-42, Chapter 7.1, Eq. 1-31

Standing Storage Loss LS (lb/yr) = 365 (0.005)(283.7)(0.05)(0.94) = 25.80 lb/yr
Working Loss LW (lb/yr) = 0.0010 (36.46)(0.77)(83333.33)(0.49)(1) = 1,156.75 lb/yr
Total Loss LT (lb/yr) = (25.8) + (1156.75) = 1,182.55 lb/yr

Cooling Towers Identified as CT-400 and CT-1502

Company Name: **Kemira Water Solutions, Inc.**
Address City IN Zip: **3761 Canal Street, East Chicago, Indiana 46312**
Permit Number: **089-37481-00489**
Reviewer: **Vasantha Palakurti**

CT-400 (capacity 273.5 gal/hr)	Pollutant		
Emissions Factor (lb./ 1000 gallons)	PM	PM10	PM2.5
	0.019	0.019	0.019
Potential to Emit (lb/hr)	0.31	0.31	0.31
Potential to Emit (lb/day)	7.48	7.48	7.48
Potential to Emit (tons/yr)	1.37	1.37	1.37

CT-1502 (capacity 273.5 gal/hr)	Pollutant		
Emissions Factor (lb./ 1000 gallons)	PM	PM10	PM2.5
	0.019	0.019	0.019
Potential to Emit (lb/hr)	0.31	0.31	0.31
Potential to Emit (lb/day)	7.48	7.48	7.48
Potential to Emit (tons/yr)	1.37	1.37	1.37

Total	**2.74**	**2.74**	**2.74**

Methodology for above tables:
Emission Factors from AP-42, Chapter 13, Table 13.4-1
Maximum gallons of water used is equivalent to the maximum gallons of water evaporated.
Gallons per hour is the maximum capacity per year, divided by 8,760 hours per year.
Emission factor is pounds PM per 1,000 gallons capacity usage.
Potential to emit (lb/hr) = gallons per hour / 1000 gallons * emission factor
Potential to emit (lb/day) = lb/hr emissions * 24 hours /day
Potential to emit (tons per year) = lb/hour * 8760 hours/year / 2000 lbs/ton.

Emissions Calculations
Iron Ore Material Storage and Handling Consisting of Magnet or Shovel Loading and Unloading

Company Name: Kemira Water Solutions, Inc.
Address City IN Zip: 3761 Canal Street, East Chicago, Indiana 46312
Permit Number: 089-37481-00489
Reviewer: Vasantha Palakurti

		Emission Factor (ton/ha/year)			Uncontrolled Emissions		
Emission Unit	**Storage Area (acres)**	**PM**	**PM10**	**PM2.5**	**PM TPY**	**PM10 TPY**	**PM2.5 TPY**
iron ore loading and unloading	1	4.10	4.10	0.41	1.66	1.66	0.17

Ore Processed	
tons/yr	3000
tons/week	50
tons/hr	0.298
lbs/hr	596

Methodology
Emission factors listed are per ton of material processed.
Potential Emission in tons/yr = (storage area (acres) * emission factor (ton/ha/yr))/2.47105 acres
1 ha = 2.47105 acres
Emission factors were calculated from NFR 2.C.7.d Storage, Handling, and Transport of Metal Products
Emission factors for storage and handling of metal products based on measurements and methodology developed by the Netherlands (Peutz, 2006) and USA (US EPA, 2006).
The present EFs only consider iron ore which is raw material used for production of iron.

Appendix A: Emissions Calculations
Fugitive Dust - Unpaved Roads

Company Name: **Kemira Water Solutions, Inc.**
Address City IN Zip: **3761 Canal Street, East Chicago, Indiana 46312**
Permit Number: **089-37481-00489**
Reviewer: **Vasantha Palakurti**

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Security/Rail-Car Switching	Pick-Up Truck	17.0	22.4	39.4	1.8E+03	7.2E+04	1000	0.189	345.6
	Total					**7.2E+04**			**3.5E+02**

Average Vehicle Weight Per Trip = 3.0 tons/trip
Average Miles Per Trip = 0.189 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	9.7	9.7	9.7	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	3.0	3.0	0.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365]
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	4.22	1.24	0.00	lb/mile
Mitigated Emission Factor, Eext =	4.19	1.23	0.00	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Security/Rail-Car Switching	Pick-Up Truck	0.45	0.11	0.01	0.29	0.07	0.01	0.15	0.04	0.00
	Totals	**0.45**	**0.11**	**0.01**	**0.29**	**0.07**	**0.01**	**0.15**	**0.04**	**0.00**

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PM2.5 = PM10
PTE = Potential to Emit

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Gary Hale
Kemira Water Solutions, Inc.
3761 Canal Street
East Chicago, IN 46312

DATE: September 29, 2016

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Registration Administrative Amendment
089-37481-00489

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Marius Peter, M3V, LLC
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

An Equal Opportunity Employer

A State that Works

Recycled Paper

Mail Code 61-53

IDEM Staff	VHAUN 9/29/2016 Kemira Water Solutions, Inc. 089-37481-00489 FINAL		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Gary Hale Kemira Water Solutions, Inc. 3761 Canal St East Chicago IN 46312 (Source CAATS) VIA CERTIFIED MAIL USPS									
2		East Chicago City Council 4525 Indianapolis Blvd East Chicago IN 46312 *(Local Official)*									
3		Lake County Health Department-Gary 1145 W. 5th Ave Gary IN 46402-1795 *(Health Department)*									
4		WJOB / WZVN Radio 6405 Olcott Ave Hammond IN 46320 *(Affected Party)*									
5		Lowell Town Council and Town Manager PO Box 157, 501 East Main Street Lowell IN 46356 *(Local Official)*									
6		Shawn Sobocinski 1814 Laporte Street Portage IN 46368-1217 *(Affected Party)*									
7		Mr. Dennis Hahney Pipefitters Association, Local Union 597 1461 East Summit St Crown Point IN 46307 *(Affected Party)*									
8		Craig Hogarth 7901 West Morris Street Indianapolis IN 46231 *(Affected Party)*									
9		Lake County Commissioners 2293 N. Main St, Building A 3rd Floor Crown Point IN 46307 *(Local Official)*									
10		Anthony Copeland 2006 E. 140th Street East Chicago IN 46312 *(Affected Party)*									
11		Barbara G. Perez 506 Lilac Street East Chicago IN 46312 *(Affected Party)*									
12		Mr. Robert Garcia 3733 Parrish Avenue East Chicago IN 46312 *(Affected Party)*									
13		Ms. Karen Kroczek 8212 Madison Ave Munster IN 46321-1627 (Affected Party)									
14		Joseph Hero 11723 S Oakridge Drive St. John IN 46373 *(Affected Party)*									
15		Gary City Council 401 Broadway # 209 Gary IN 46402 *(Local Official)*									

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
14			

FACSIMILIE OF PS Form 3877

Mail Code 61-53

IDEM Staff	VHAUN 9/29/2016 Kemira Water Solutions, Inc. 089-37481-00489 FINAL		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Larry Davis 268 South, 600 West Hebron IN 46341 (Affected Party)									
2		Ryan Dave 939 Cornwallis Munster IN 46321 *(Affected Party)*									
3		Mark Coleman PO Box 85 Beverly Shores IN 46301-0085 *(Affected Party)*									
4		Marlus Peter M3V, LLC 11925 East 65th Street Indianapolis IN 46236 *(Consultant)*									
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
4			

FACSIMILIE OF PS Form 3877