



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: September 14, 2012

RE: Univertical Corp and Univertical Chemical / 151-32197-00047

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

## 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 enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

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.

Enclosures  
FNPER-AM.dot12/3/07



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Chris Pontorno  
Univertical Corporation and Univertical Chemical Company  
203 Weatherhead St  
Angola, IN 46703

September 14, 2012

Re: F151-32197-00047  
First Administrative Amendment to  
F151-23662-00047

Dear Mr. Pontorno:

Univertical Corporation and Univertical Chemical Company was issued a Federally Enforceable State Operating Permit (FESOP) Second Renewal No. F151-23662-00047 on March 5, 2008 for a stationary copper, tin, and solder die casting and chemical reaction process plant located at 203 Weatherhead Street, Angola, Indiana 46703. On August 10, 2012, the Office of Air Quality (OAQ) received an application from the source requesting that the permit be amended to add an emissions unit, subject to 326 IAC 2-1.1-3 (Exemptions), at the request of the Permittee. This change to the permit is considered an administrative amendment pursuant to 326 IAC 2-8-10(a)(13).

The following are the new emission units:

- (a) One (1) silver electroplating line, approved for construction in 2012, with a maximum capacity of 2,000 pounds of copper metal per hour, with emissions controlled by one (1) packed-bed atomizing scrubber, identified as PBB-1, exhausting to one (1) stack, identified as PBB-2, and including the following:
  - (1) One (1) potassium hydroxide electrocleaning process tank, identified as PBB-T1, with a rectifier capacity of 500 Ampere (A), and with a maximum volume of 120 gallons;
  - (2) One (1) acid activation tank, identified as PBB-T2, using either sulfuric acid or peroxide, or sodium persulfate, and with a maximum volume of 60 gallons;
  - (3) One (1) potassium cyanide pre-dip tank, identified as PBB-T3, with a maximum volume of 60 gallons;
  - (4) One (1) potassium silver cyanide silver strike tank, identified as PBB-T4, with a rectifier capacity of 50 Ampere (A), and a maximum volume of 60 gallons;
  - (5) One (1) potassium silver cyanide silver plate tank, identified as PBB-T5, with a maximum of four (4) rectifiers, with each rectifier having a capacity of 500 Ampere (A), and a total maximum tank volume of 450 gallons;
  - (6) Nine (9) water rinse tanks;
  - (7) One (1) hot water rinse tank;
  - (8) One (1) anti-tarnish tank;

- (9) One (1) silver reclaim operation;
- (10) One (1) wastewater train, with a maximum daily volume of 7,200 gallons, including:
  - (A) One (1) 1,500 gallon non-cyanide rinse tank;
  - (B) One (1) 200 gallon spent solution tank;
  - (C) One (1) 1,000 gallon cyanide rinse tank;
  - (D) One (1) 360 gallon Reactor 2 tank;
  - (E) One (1) 360 gallon cyanide destruct tank;
  - (F) One (1) 360 gallon pH adjustment tank;
  - (G) One (1) flocculator/clarifier and one (1) filter press;
- (b) One (1) silver cyanide production operation, approved for construction in 2012, producing a maximum of 100 tons per month or 274 pounds per hour of silver cyanide, using potassium cyanide, nitric acid, water, and reclaimed silver metal, with emissions controlled by one (1) packed-bed atomizing scrubber.

Note: The one (1) packed-bed atomizing scrubber is controlling emissions from emission units (a) and (b).

The PTE of the emission units is as follows:

Process/ Emission Unit	PTE of Proposed Modification (tons/year)									
	PM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e	Total HAPs	Worst Single HAP
Silver Electroplating	1.84 E-03	1.84 E-03	1.84 E-03	-	-	-	-	-	1.84 E-03	1.84E-03 Cyanide Compounds
Silver Cyanide Production	1.20	1.20	1.20	-	-	-	-	-	1.20	1.20 Cyanide Compounds
<b>Total PTE of Proposed Modification</b>	<b>1.20</b>	<b>1.20</b>	<b>1.20</b>	-	-	-	-	-	<b>1.20</b>	<b>1.20 Cyanide Compounds</b>

The entire source will continue to limit PM, PM10 and PM2.5 emissions to less than 100 tons per twelve (12) consecutive month period, rendering the requirements of 326 IAC 2-7 and 326 IAC 2-2 not applicable. The change in operation will not cause the source's potential to emit to be greater than the threshold levels specified in 326 IAC 2-2 (PSD), 326 IAC 2-3 (Emission Offset) or 326 IAC 2-7 (Part 70). (See Appendix A for the calculations).

No new state rules are applicable to this source due to the addition of the emission unit.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

(a) Silver Electroplating

The PM Emissions of the Silver Electroplating operation are less than 0.551 lbs/hour (see Appendix A); therefore, pursuant to 326 IAC 6-3-1(b)(14), this operation is exempt from the requirements of 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).

(b) Silver Cyanide Production

The PM Emissions of the Silver Cyanide Production operation are less than 0.551 lbs/hour (see Appendix A); therefore, pursuant to 326 IAC 6-3-1(b)(14), this operation is exempt from the requirements of 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes). However, the packed bed atomizing scrubber will be required to operate because the potential to emit was based on its specifications.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) or National Emission standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 20 and 40 CFR Part 61, 63) included in this administrative amendment.

- (a) This new silver electroplating operation is not subject to the requirements of 40 CFR 63 Subpart N - National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. This source performs only silver electroplating and does not perform any hard chromium electroplating, decorative chromium electroplating, or chromium anodizing.
- (b) This new silver electroplating operation is not subject to the requirements of 40 CFR 63 Subpart WWWW—National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations. While this electroplating operation is electroplating other than chromium electroplating (i.e., non-chromium electroplating), and this source is an area source of HAP emissions, this plating and polishing facility does not use or have emissions of compounds from one or more plating and polishing metal HAP, which means any compound of any of the following metals: cadmium, chromium, lead, manganese, and nickel, as defined in 40 CFR 63.11511.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for (40 CFR 63 Subpart VVVVV (6V)) for Chemical Manufacturing Area Sources for this source are still not included in this permit because the source does not operate a chemical manufacturing process unit (CMPU).
- (d) The requirements of NSPS Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984 are not included in this permit for the new silver electroplating and silver cyanide production tanks. Each new tank with this revision is not a storage vessel with a storage capacity greater than 151,416 liters (40,000 gallons) that is used to store petroleum liquids for which construction is commenced after May 18, 1978.

Note that this source is classified as a Chemical Process Plant, and it is considered one of the twenty-eight (28) listed source categories. This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no attainment regulated pollutant is emitted at a rate of 100 tons per year or

more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).

Pursuant to the provisions of 326 IAC 2-8-10, the permit is hereby administratively amended as follows with the deleted language as ~~strikeouts~~ and new language **bolded**:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

...

- (h) **One (1) silver electroplating line, approved for construction in 2012, with a maximum capacity of 2,000 pounds of copper metal per hour, with emissions controlled by one (1) packed-bed scrubber, identified as PBB-1, exhausting to one (1) stack, identified as PBB-2, and including the following:**
- (1) **One (1) potassium hydroxide electrocleaning process tank, identified as PBB-T1, with a rectifier capacity of 500 Ampere (A), and with a maximum volume of 120 gallons;**
  - (2) **One (1) acid activation tank, identified as PBB-T2, using either sulfuric acid or peroxide, or sodium persulfate, and with a maximum volume of 60 gallons;**
  - (3) **One (1) potassium cyanide pre-dip tank, identified as PBB-T3, with a maximum volume of 60 gallons;**
  - (4) **One (1) potassium silver cyanide silver strike tank, identified as PBB-T4, with a rectifier capacity of 50 Ampere (A), and a maximum volume of 60 gallons;**
  - (5) **One (1) potassium silver cyanide silver plate tank, identified as PBB-T5, with a maximum of four (4) rectifiers, with each rectifier having a capacity of 500 Ampere (A), and a total maximum tank volume of 450 gallons;**
  - (6) **Nine (9) water rinse tanks;**
  - (7) **One (1) hot water rinse tank;**
  - (8) **One (1) anti-tarnish tank;**
  - (9) **One (1) silver reclaim operation;**
  - (10) **One (1) wastewater train, with a maximum daily volume of 7,200 gallons, including:**
    - (A) **One (1) 1,500 gallon non-cyanide rinse tank;**
    - (B) **One (1) 200 gallon spent solution tank;**
    - (C) **One (1) 1,000 gallon cyanide rinse tank;**
    - (D) **One (1) 360 gallon Reactor 2 tank;**
    - (E) **One (1) 360 gallon cyanide destruct tank;**
    - (F) **One (1) 360 gallon pH adjustment tank;**

**(G) One (1) flocculator/clarifier and one (1) filter press;**

- (i) One (1) silver cyanide production operation, approved for construction in 2012, producing a maximum of 100 tons per month or 274 pounds per hour of silver cyanide, using potassium cyanide, nitric acid, water, and reclaimed silver metal, with emissions controlled by one (1) packed-bed atomizing scrubber.**

**Note: The one (1) packed-bed atomizing scrubber is controlling emissions from emission units (h) and (i).**

...

**SECTION D.5**

**EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description:**

- (i) One (1) silver cyanide production operation, approved for construction in 2012, producing a maximum of 100 tons per month or 274 pounds per hour of silver cyanide, using potassium cyanide, nitric acid, water, and reclaimed silver metal, with emissions controlled by one (1) packed-bed atomizing scrubber.**

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

**Compliance Determination Requirements [326 IAC 2-8-5(a)(1)]**

**D.5.1 Particulate Matter**

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**In order to ensure that the silver cyanide is exempted from 326 IAC 6-3, the packed-bed atomizing scrubber for particulate control shall be in operation and control emissions from the silver cyanide production operation at all times that the facilities are in operation.**

...

<b>PTE of the Entire Source After Issuance of the FESOP Administrative Amendment</b>
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The table below summarizes the potential to emit of the entire source, with updated emissions shown as **bold** values and previous emissions shown as ~~strike through~~ values.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of the FESOP Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e***	Total HAPs	Worst Single HAP
Copper Bar Finishing Line (Abrasive Blasting)	11.19	11.19**	11.19**	negl.	0.26	0.01	0.22	<b>311</b>	negl.	negl.
Copper Anode Process Line (Shaft Melter and Continuous Casting)	<del>44.88</del> <b>44.88</b>	<del>45.08</del> <b>45.08</b>	<del>45.08</del> <b>45.08</b>	0.02	3.59	0.20	3.01	<b>4,329</b>	0.07	negl.
Die Casting Line	0.17	0.21	0.21	negl.	0.69	0.04	0.58	<b>817</b>	0.01	negl.
Nickel Sulfate Dryer	2.19	2.19	2.19	negl.	0.04	negl.	0.04	<b>52</b>	2.19	2.19 Nickel Sulfate
Copper Sulfate Dryer	2.19	2.19	2.19	negl.	0.17	0.01	0.14	<b>207</b>	0.01	negl.
Sodium Cyanide Granulator	1.75	1.75	1.75	-	-	-	-	-	negl.	negl.
Hydrochloric Acid Tank	1.43	1.43	1.43	-	-	-	-	-	negl.	negl.
Natural Gas-fired Boilers	0.09	0.38	0.38	0.03	4.98	0.27	4.18	<b>6,014</b>	0.09	0.09 Hexane
Storage Tanks	negl.	negl.	negl.	-	-	0.16	-	-	negl.	negl.
Welding Operation	0.40	0.40	0.40	-	-	-	-	-	0.01	negl.
Batch Reaction Tanks	negl.	negl.	negl.	-	-	negl.	-	-	negl.	negl.
Upcaster Line/UC-1	16.29	16.29	16.29	-	-	-	-	-	-	-
Upcaster Line/UC-3	16.29	16.29	16.29	-	-	-	-	-	-	-
<b>Silver Electroplating</b>	<b>1.84 E-03</b>	<b>1.84 E-03</b>	<b>1.84 E-03</b>	-	-	-	-	-	<b>1.84 E-03</b>	<b>1.84E-03 Cyanide Compounds</b>
<b>Silver Cyanide Production</b>	<b>1.20</b>	<b>1.20</b>	<b>1.20</b>	-	-	-	-	-	<b>1.20</b>	<b>1.20</b>
<b>Total PTE of Entire Source</b>	<del><b>96.87</b></del> <b>98.07</b>	<del><b>97.4</b></del> <b>98.60</b>	<del><b>97.4</b></del> <b>98.60</b>	<b>0.06</b>	<b>9.73</b>	<b>0.70</b>	<b>8.17</b>	<b>11,729</b>	<del><b>5.56</b></del> <b>6.77</b>	<b>2.19 Nickel Sulfate</b>
Title V Major Source Thresholds**	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	100	100	100	100	100	100	100	100,000	NA	NA

negl. = negligible  
\*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".  
\*\*PTE Before Control.  
\*\*\*The 100,000 CO<sub>2</sub>e 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 revision, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP permit revision, and only to the extent that the effect of the control equipment is made practically enforceable in the permit. (Note: the table below was generated from the above table, with bold text un-bolded and strikethrough text deleted).

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of the FESOP Administrative Amendment (tons/year)									
	PM	PM10*	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e***	Total HAPs	Worst Single HAP
Copper Bar Finishing Line (Abrasive Blasting)	11.19	11.19**	11.19**	negl.	0.26	0.01	0.22	311	negl.	negl.
Copper Anode Process Line (Shaft Melter and Continuous Casting)	44.88**	45.08**	45.08**	0.02	3.59	0.20	3.01	4,329	0.07	negl.
Die Casting Line	0.17	0.21	0.21	negl.	0.69	0.04	0.58	817	0.01	negl.
Nickel Sulfate Dryer	2.19	2.19	2.19	negl.	0.04	negl.	0.04	52	2.19	2.19 Nickel Sulfate
Copper Sulfate Dryer	2.19	2.19	2.19	negl.	0.17	0.01	0.14	207	0.01	negl.
Sodium Cyanide Granulator	1.75	1.75	1.75	-	-	-	-	-	negl.	negl.
Hydrochloric Acid Tank	1.43	1.43	1.43	-	-	-	-	-	negl.	negl.
Natural Gas-fired Boilers	0.09	0.38	0.38	0.03	4.98	0.27	4.18	6,014	0.09	0.09 Hexane
Storage Tanks	negl.	negl.	negl.	-	-	0.16	-	-	negl.	negl.
Welding Operation	0.40	0.40	0.40	-	-	-	-	-	0.01	negl.
Batch Reaction Tanks	negl.	negl.	negl.	-	-	negl.	-	-	negl.	negl.
Upcaster Line/UC-1	16.29	16.29	16.29	-	-	-	-	-	-	-
Upcaster Line/UC-3	16.29	16.29	16.29	-	-	-	-	-	-	-
Silver Electroplating	1.84 E-03	1.84 E-03	1.84 E-03	-	-	-	-	-	1.84 E-03	1.84E-03 Cyanide Compounds
Silver Cyanide Production	1.20	1.20	1.20	-	-	-	-	-	1.20	1.20
<b>Total PTE of Entire Source</b>	<b>98.07</b>	<b>98.60</b>	<b>98.60</b>	<b>0.06</b>	<b>9.73</b>	<b>0.70</b>	<b>8.17</b>	<b>11,729</b>	<b>6.77</b>	<b>2.19 Nickel Sulfate</b>
Title V Major Source Thresholds**	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	100	100	100	100	100	100	100	100,000	NA	NA

negl. = negligible  
\*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".  
\*\*PTE Before Control.  
\*\*\*The 100,000 CO<sub>2</sub>e 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.

**Additional Changes**

IDEM, OAQ has decided to make additional revisions to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions.

The permit is revised as follows with the deleted language as ~~strikeouts~~ and new language **bolded**:

(1) IDEM, OAQ has revised Section C.2 Overall Source Limit as follows.

**C.2 Overall Source Limit [326 IAC 2-8]**


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The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM) **and greenhouse gases (GHGs)**, from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e) per twelve (12) consecutive month period.**

...

(2) On October 27, 2010, the Indiana Air Pollution Control Board issued revisions to 326 IAC 2. These revisions resulted in changes to the rule sites listed in the permit. These changes are not changes to the underlining provisions. The change is only to site of these rules in Section B - Operational Flexibility. IDEM, OAQ has clarified the rule sites for the Preventive Maintenance Plan.

**B.11 Preventative Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][~~326 IAC 2-8-5(a)(1)~~]**

...

**B.19 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]**

- 
- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) **and (c)** ~~through (d)~~ without a prior permit revision, if each of the following conditions is met:
- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
  - (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
  - (3) The changes do not result in emissions which exceed the limitations provided in

this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

- (4) The Permittee notifies the:

Indiana Department of Environmental Management  
Permit Administration and Support Section, 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, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15 ~~(b)(2), (c)(1), and (d)~~ **(b)(1) and (c)**. The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15 ~~(b)(2), (c)(1), and (d)~~ **(b)(1) and (c)**.

- (b) Emission Trades [326 IAC 2-8-15 ~~(e)~~ **(b)**]  
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15 ~~(e)~~ **(b)**.
- (c) Alternative Operating Scenarios [326 IAC 2-8-15 ~~(d)~~ **(c)**]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

...

- (3) IDEM, OAQ has clarified the Permittee's responsibility with regards to record keeping.

C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. **Support information includes the following:**

- (AA) All calibration and maintenance records.
- (BB) All original strip chart recordings for continuous monitoring instrumentation.
- (CC) Copies of all reports required by the FESOP.

**Records of required monitoring information include the following:**

- (AA) The date, place, as defined in this permit, and time of sampling or measurements.
- (BB) The dates analyses were performed.
- (CC) The company or entity that performed the analyses.
- (DD) The analytical techniques or methods used.
- (EE) The results of such analyses.
- (FF) The operating conditions as existing at the time of sampling or measurement.

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 Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

...

- (4) IDEM, OAQ has clarified the interaction of the Quarterly Deviation and Compliance Monitoring Report and the Emergency Provisions.

**C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]**

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. **Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph.** Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

...

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

...

This report shall be submitted quarterly based on a calendar year. **Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting.** Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

...

All other conditions of the permit shall remain unchanged and in effect. Attached please find the entire revised permit.

A copy of the permit 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's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

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 Sarah Street, of my staff, at 317-232-8427 or 1-800-451-6027, and ask for extension 2-8427.

Sincerely,



Iryn Calilung, Section Chief  
Permits Branch  
Office of Air Quality

Attachments: Updated Permit  
Appendix A - Emissions Calculations

IC/ss

cc: File - Steuben County  
Steuben County Health Department  
U.S. EPA, Region V  
Compliance and Enforcement Branch  
Billing, Licensing and Training Section



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
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FEDERALLY ENFORCEABLE STATE OPERATING
PERMIT RENEWAL
OFFICE OF AIR QUALITY

Univertical Corporation and Univertical Chemical Company
203 Weatherhead Street
Angola, Indiana 46703

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Table with 2 columns: Issued by (Matthew Stuckey, Deputy Branch Chief, Permits Branch, Office of Air Quality) and Issuance/Expiration Dates (March 5, 2008 / March 5, 2018). Includes Operation Permit No.: F151-23662-00047.

First Significant Permit Revision No.: F151-27603-00047, issued June 19, 2009
Second Significant Permit Revision No.: F151-30151-00047, issued July 22, 2011

Table with 2 columns: Issued by (Iryn Calilung, Section Chief, Permits Branch, Office of Air Quality) and Issuance/Expiration Dates (September 14, 2012 / March 5, 2018). Includes First Administrative Amendment No.: F151-32197-00047.

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## SECTION A SOURCE SUMMARY

This permit 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 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee 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 Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-8-3(b)]

---

The Permittee owns and operates a stationary copper, tin, and solder die casting and chemical reaction process plant.

Source Address:	203 Weatherhead Street, Angola, Indiana 46703
General Source Phone Number:	260-665-7832
SIC Code:	3351 (Rolling, Drawing and Extruding of Copper), 2819 (Industrial Inorganics, Not Elsewhere Classified)
County Location:	Steuben
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD Rules Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

---

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

- (a) One (1) copper bar finishing line, constructed in 1997, with a maximum process rate of 3,000 pounds of copper bars per hour, including the following:
  - (1) One (1) Wheelabrator abrasive blasting machine (Shotblast), with a maximum process rate of 2,000 pounds of copper shot per hour, controlled by a baghouse, and exhausting through stack #DC-1.
  - (2) One natural gas-fired washing machine, identified as Washer #1, with a maximum capacity of 3,000 pounds per hour of copper bars and maximum heat input capacity of 0.6 MMBtu/hr, using a nontoxic alkaline soap, and exhausting through stack #BW-1;
  - (3) One (1) cold cut-off saw, identified as Saw #2, with a maximum capacity of 3,000 pounds per hour of copper bars, and exhausting to building ventilation; and
  - (4) One (1) end drill and tap machine, identified as EDT, with a maximum capacity of 3,000 pounds per hour of copper bars, and exhausting to building ventilation.
- (b) One (1) copper anode process line, constructed in 1997, with a maximum capacity of 4,000 pounds of pure copper per hour, including the following:
  - (1) One (1) natural gas-fired shaft melter furnace, identified as Melter #1, with a maximum capacity of 4000 lbs/hr of pure copper and maximum heat input of 8 MMBtu/hr, and exhausting through stack #SM1.

- (2) One (1) natural gas-fired tumbler, identified as Tumbler #1, with a maximum capacity of 4,000 lbs/hr of pure copper and maximum heat input of 0.35 MMBtu/hr, and exhausting to building ventilation.
  - (3) One (1) electric induction reheat furnace (Reheat), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (4) One (1) electric induction holding furnace (Holder), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (5) One (1) three inch billet continuous casting machine (Caster), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (6) One (1) cold cut-off saw, identified as Saw #1, with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (7) One (1) continuous rolling machine (Roller), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
- (c) One (1) nickel sulfate dryer equipped with an integral cyclone, constructed in 1997, with a maximum input capacity of 3,050 lbs/hr of wet nickel sulfate crystal and a maximum heat input of 0.1 MMBtu/hr, using a scrubber as control, and exhausting through stack #10.
  - (d) One (1) copper sulfate rotary dryer, identified as CSC-3, approved for construction in 2009, with a maximum input capacity of 5,000 lbs/hr of copper sulfate crystal and a maximum heat input of 0.4MMBtu/hr, using scrubber CSC-2 as particulate control, and exhausting through stack CSC-1.
  - (e) One (1) sodium cyanide granulator, constructed in 1997, with a maximum capacity of 4,000 lbs/hr of sodium cyanide brick, using a water spray scrubber as control, and exhausting through stack #9.
  - (f) One (1) hydrochloric acid storage tank, constructed in 1997, identified as Tank 201, with a maximum capacity of 6,100 gallons and a maximum throughput rate of 160 lbs/hr or 67.5 gal/hr of hydrochloric acid, using an acid scrubber as control, and exhausting through stack/vent ID #201.
  - (g) Two (2) Upcaster lines, identified as UC-1 and UC-3, approved for construction in 2011, each with a maximum input capacity of 1728 lbs/hr of copper and each using an electric induction heating system, using no controls, and exhausting through vents UC-2 and UC-4, respectively.
  - (h) One (1) silver electroplating line, approved for construction in 2012, with a maximum capacity of 2,000 pounds of copper metal per hour, with emissions controlled by one (1) packed-bed scrubber, identified as PBB-1, exhausting to one (1) stack, identified as PBB-2, and including the following:
    - (1) One (1) potassium hydroxide electrocleaning process tank, identified as PBB-T1, with a rectifier capacity of 500 Ampere (A), and with a maximum volume of 120 gallons;
    - (2) One (1) acid activation tank, identified as PBB-T2, using either sulfuric acid or peroxide, or sodium persulfate, and with a maximum volume of 60 gallons;
    - (3) One (1) potassium cyanide pre-dip tank, identified as PBB-T3, with a maximum volume of 60 gallons;

- (4) One (1) potassium silver cyanide silver strike tank, identified as PBB-T4, with a rectifier capacity of 50 Ampere (A), and a maximum volume of 60 gallons;
- (5) One (1) potassium silver cyanide silver plate tank, identified as PBB-T5, with a maximum of four (4) rectifiers, with each rectifier having a capacity of 500 Ampere (A), and a total maximum tank volume of 450 gallons;
- (6) Nine (9) water rinse tanks;
- (7) One (1) hot water rinse tank;
- (8) One (1) anti-tarnish tank;
- (9) One (1) silver reclaim operation;
- (10) One (1) wastewater train, with a maximum daily volume of 7,200 gallons, including:
  - (A) One (1) 1,500 gallon non-cyanide rinse tank;
  - (B) One (1) 200 gallon spent solution tank;
  - (C) One (1) 1,000 gallon cyanide rinse tank;
  - (D) One (1) 360 gallon Reactor 2 tank;
  - (E) One (1) 360 gallon cyanide destruct tank;
  - (F) One (1) 360 gallon pH adjustment tank;
  - (G) One (1) flocculator/clarifier and one (1) filter press;
- (i) One (1) silver cyanide production operation, approved for construction in 2012, producing a maximum of 100 tons per month or 274 pounds per hour of silver cyanide, using potassium cyanide, nitric acid, water, and reclaimed silver metal, with emissions controlled by one (1) packed-bed atomizing scrubber.

Note: The one (1) packed-bed atomizing scrubber is controlling emissions from emission units (h) and (i).

### A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million Btu per hour:
  - (1) One (1) natural gas-fired boiler, identified as Boiler #1, constructed in 1946, with a maximum heat capacity of 4.2 MMBtu/hr, and exhausting through stack #B1. [326 IAC 6-2]
  - (2) One (1) natural gas-fired boiler, identified as Boiler #2, constructed in 1979, with a maximum heat capacity of 4.2 MMBtu/hr, and exhausting through stack #B1. [326 IAC 6-2]

- (3) One (1) natural gas-fired boiler, identified as Chem-Boiler 3, constructed in 1999, with a maximum heat capacity of 1.1 MMBtu/hr, and exhausting through stack B3. [326 IAC 6-2]
- (4) One (1) natural gas-fired boiler, identified as Boiler #4, constructed in 2006, with a maximum heat input capacity of 2.10 MMBtu per hour. [326 IAC 6-2]
- (b) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons:
  - (1) One (1) diesel fuel storage tank, with a maximum capacity of 550 gallons and maximum annual throughput of 100 gallons, exhausting through a tank vent.
  - (2) One (1) gasoline storage tank, with a maximum capacity of 500 gallons and maximum annual throughput of 2000 gallons, exhausting through a tank vent.
- (c) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (d) Other emission units, not regulated by a NESHAP, with PM10 and SO<sub>2</sub> emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) tons per year of any combination of HAPs:
  - (1) One (1) batch reaction tank, identified as Tank 22, producing nickel acetate at a maximum rate of 375 lbs/hr, and exhausting through stack/vent ID #22.
  - (2) Three (3) batch reaction tanks, identified as Tank 70, Tank 71, and Tank 72 producing nickel sulfamate at a maximum rate of 300 lbs/hr, and exhausting through stack/vent ID #70.
  - (3) One (1) batch reaction tank, identified as Tank 118, producing nickel bromide at a maximum rate of 1,800 lbs/hr, and exhausting through stack/vent ID #118.
  - (4) One (1) batch reaction tank, identified as Tank 13, producing cuprous chloride at a maximum rate of 7,000 lbs/hr, and exhausting through stack/vent ID #13.
  - (5) One (1) batch reaction tank, identified as Tank 14, producing cuprous cyanide at a maximum rate of 750 lbs/hr, and exhausting through stack/vent ID #13.
  - (6) One (1) batch reaction tank, identified as Tank 17, producing sodium zinc cyanide at a maximum rate of 5,000 lbs/hr, and exhausting through stack/vent ID #17.
  - (7) Two (2) batch reaction tanks, identified as Tanks 16 and 19, producing sodium copper cyanide at a maximum rate of 32,000 lbs/hr, and exhausting through stack/vent ID #16 and 19, respectively.
  - (8) One (1) batch reaction tank, identified as Tank 20, producing sodium cyanide at a maximum rate of 100 lbs/hr, and exhausting through stack/vent ID #20.
  - (9) One (1) batch reaction tank, identified as Tank 5, producing wet nickel sulfate crystal at a maximum rate of 700 lbs/hr, and exhausting through stack/vent ID #5.

- (10) Forty (40) miscellaneous storage tanks, storing non-volatile, non-hazardous liquids and powders.
- (e) One (1) die casting process line, constructed in 1997, with a maximum capacity of 1,000 lbs/hr of pure tin or solder, containing the following equipment:
  - (1) One (1) natural gas-fired melting pot furnace (Tin Pot), with a maximum capacity of 500 lbs/hr of pure tin and maximum heat input of 0.35 MMBtu/hr, and exhausting to building ventilation.
  - (2) One natural gas-fired melting pot furnace (Solder Pot), with a maximum capacity of 500 lbs/hr of pure solder and maximum heat input of 0.35 MMBtu/hr, and exhausting to building ventilation.
  - (3) One (1) natural gas fired die casting machine, identified as DC #1, with a maximum capacity of 500 lbs/hr of pure solder or tin and maximum heat input of 0.475 MMBtu/hr, and exhausting to building ventilation.
  - (4) Two (2) natural gas-fired die casting machines, identified as DC #2 and DC #3, each with a maximum capacity of 500 lbs/hr of pure solder or tin and a maximum heat input of 0.2 MMBtu/hr, and exhausting to building ventilation.

A.4 FESOP Applicability [326 IAC 2-8-2]

---

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) to renew a Federally Enforceable State Operating Permit (FESOP).

## **SECTION B GENERAL CONDITIONS**

### **B.1 Definitions [326 IAC 2-8-1]**

---

Terms in this permit 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 2-7) shall prevail.

### **B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]**

- 
- (a) This permit, F151-23662-00047, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

### **B.3 Term of Conditions [326 IAC 2-1.1-9.5]**

---

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

### **B.4 Enforceability [326 IAC 2-8-6]**

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Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

### **B.5 Severability [326 IAC 2-8-4(4)]**

---

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

### **B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]**

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This permit does not convey any property rights of any sort or any exclusive privilege.

### **B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]**

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- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

- (a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:
- (i) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and
  - (ii) the certification is based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) The Permittee may use the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 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, Indiana 46204-2251

- (b) The annual compliance certification report required by this permit 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 annual compliance certification report shall include the following:
- (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether compliance was continuous or intermittent;
  - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
  - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

- (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.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit 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 Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee 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 PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a) by "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) 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 Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

**B.12 Emergency Provisions [326 IAC 2-8-12]**

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- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and Northern Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or

Telephone Number: 317-233-0178 (ask for Compliance Section)

Facsimile Number: 317-233-6865

Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile 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

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
- (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
- (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
- (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
- (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to F151-23662-00047 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 permit.

**B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]**

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The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.15 Reserved.

**B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination  
[326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]**

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(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

- (1) That this permit contains a material mistake.
- (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
- (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

**B.17 Permit Renewal [326 IAC 2-8-3(h)]**

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(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management  
Permit Administration and Support Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
- (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
  - (2) 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) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management  
Permit Administration and Support Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.19 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management  
Permit Administration and Support Section, 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, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b)(1) and (c). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(1) and (c).

- (b) Emission Trades [326 IAC 2-8-15(b)]  
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(b).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:  
  
Indiana Department of Environmental Management  
Permit Administration and Support Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
  
The application which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

**B.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]**

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For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

### Emission Limitations and Standards [326 IAC 2-8-4(1)]

#### C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

#### C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e) per twelve (12) consecutive month period.

(b) The potential to emit particulate matter (PM) from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

#### C.3 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of forty percent (40%) 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.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

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The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

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The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

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

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The Permittee 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).

C.7 Stack Height [326 IAC 1-7]

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The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

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- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
  - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
  - (2) If there is a change in the following:
    - (A) Asbestos removal or demolition start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications 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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) Procedures for Asbestos Emission Control  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) Demolition and Renovation  
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) Indiana Licensed Asbestos Inspector  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

### Testing Requirements [326 IAC 2-8-4(3)]

#### C.9 Performance Testing [326 IAC 3-6]

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- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, 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
- no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted

by IDEM, OAQ if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

### **Compliance Requirements [326 IAC 2-1.1-11]**

#### **C.10 Compliance Requirements [326 IAC 2-1.1-11]**

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The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

### **Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]**

#### **C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]**

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Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee 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

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meet the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

#### **C.12 Reserved**

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#### **C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]**

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- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

### **Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]**

#### **C.14 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]**

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If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

#### **C.15 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]**

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Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

- (a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but are not limited to, the following:
  - (1) initial inspection and evaluation;
  - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
  - (3) any necessary follow-up actions to return operation to normal or usual manner of operation.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
  - (1) monitoring results;
  - (2) review of operation and maintenance procedures and records; and/or
  - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall record the reasonable responses steps taken.

#### **C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]**

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- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.
- (b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

**C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]**

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- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following:

- (AA) All calibration and maintenance records.
- (BB) All original strip chart recordings for continuous monitoring instrumentation.
- (CC) Copies of all reports required by the FESOP.

Records of required monitoring information include the following:

- (AA) The date, place, as defined in this permit, and time of sampling or measurements.
- (BB) The dates analyses were performed.
- (CC) The company or entity that performed the analyses.
- (DD) The analytical techniques or methods used.
- (EE) The results of such analyses.
- (FF) The operating conditions as existing at the time of sampling or measurement.

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 Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

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

**C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]**

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- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit 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

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit 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.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

### **Stratospheric Ozone Protection**

#### **C.19 Compliance with 40 CFR 82 and 326 IAC 22-1**

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Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) One (1) copper bar finishing line, constructed in 1997, with a maximum process rate of 3,000 pounds of copper bars per hour, including the following:
- (1) One (1) Wheelabrator abrasive blasting machine (Shotblast), with a maximum process rate of 2,000 pounds of copper shot per hour, controlled by a baghouse, and exhausting through stack #DC-1.
  - (2) One natural gas-fired washing machine, identified as Washer #1, with a maximum capacity of 3,000 pounds per hour of copper bars and maximum heat input capacity of 0.6 MMBtu/hr, using a nontoxic alkaline soap, and exhausting through stack #BW-1;
  - (3) One (1) cold cut-off saw, identified as Saw #2, with a maximum capacity of 3,000 pounds per hour of copper bars, and exhausting to building ventilation; and
  - (4) One (1) end drill and tap machine, identified as EDT, with a maximum capacity of 3,000 pounds per hour of copper bars, and exhausting to building ventilation.
- (b) One (1) copper anode process line, constructed in 1997, with a maximum capacity of 4,000 pounds of pure copper per hour, including the following:
- (1) One (1) natural gas-fired shaft melter furnace, identified as Melter #1, with a maximum capacity of 4000 lbs/hr of pure copper and maximum heat input of 8 MMBtu/hr, and exhausting through stack #SM1.
  - (2) One (1) natural gas-fired tumbler, identified as Tumbler #1, with a maximum capacity of 4,000 lbs/hr of pure copper and maximum heat input of 0.35 MMBtu/hr, and exhausting to building ventilation.
  - (3) One (1) electric induction reheat furnace (Reheat), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (4) One (1) electric induction holding furnace (Holder), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (5) One (1) three inch billet continuous casting machine (Caster), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (6) One (1) cold cut-off saw, identified as Saw #1, with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
  - (7) One (1) continuous rolling machine (Roller), with a maximum capacity of 4,000 lbs/hr of pure copper, and exhausting to building ventilation.
- (g) Two (2) Upcaster lines, identified as UC-1 and UC-3, approved for construction in 2011, each with a maximum input capacity of 1728 lbs/hr of copper and each using an electric induction heating system, using no controls, and exhausting through vents UC-2 and UC-4, respectively.

(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 2-8-4(1)]**

**D.1.1 Particulate Matter (PM) [326 IAC 2-2]**

In order to render the requirements of 326 IAC 2-2 not applicable:

- (a) The PM emissions from the copper bar finishing line (Abrasive Blasting) shall not exceed 2.55 pounds per hour.
- (b) The PM emissions from the copper anode process line shall not exceed 10.25 pounds per hour.
- (c) The PM emissions from the Upcaster Line, UC-1, shall not exceed 3.72 pounds per hour.
- (d) The PM emissions from the Upcaster Line, UC-3, shall not exceed 3.72 pounds per hour.

Compliance with these limits, combined with the limited PM emissions from other emission units at this source, will limit source-wide PM emissions to less than 100 tons per year and render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

**D.1.2 FESOP and PSD Minor Limits [326 IAC 2-8-4][326 IAC 2-2]**

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

- (a) The Upcaster Lines, UC-1 and UC-3, shall not exceed 7,568.64 tons of copper processed per twelve (12) consecutive month period with compliance determined at the end of each month, each.
- (b) The PM10 emissions from the Upcaster Line, UC-1, shall not exceed 4.3 pounds per ton of copper processed.
- (c) The PM10 emissions from the Upcaster Line, UC-3, shall not exceed 4.3 pounds per ton of copper processed.
- (d) The PM2.5 emissions from the Upcaster Line, UC-1, shall not exceed 4.3 pounds per ton of copper processed.
- (e) The PM2.5 emissions from the Upcaster Line, UC-3, shall not exceed 4.3 pounds per ton of copper processed.

Compliance with these limits, combined with the limited potential to emit PM10 and PM2.5 from all other emission units at the source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) not applicable.

**D.1.3 Particulate Emissions [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the processes listed in the table below shall be limited by the following:

Emission Unit	Process Weight Rate (lbs/hr)	Allowable PM Limit (lbs/hr)
Copper Bar Finishing Line (Abrasive Blasting)	3,000	5.38
Upcaster UC-1	1,728	3.72
Upcaster UC-3	1,728	3.72

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour.}$$

#### D.1.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

### Compliance Determination Requirements

#### D.1.5 Particulate Control

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- (a) In order to comply with Conditions D.1.1(a) and D.1.3, the baghouse for particulate control shall be in operation and control emissions from the abrasive blasting machine at all times that the abrasive blasting machine is in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

#### D.1.6 Testing Requirements [326 IAC 2-1.1-11]

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- (a) In order to demonstrate compliance with Condition D.1.1, the Permittee shall perform PM testing for the blasting machine utilizing methods as approved by the Commissioner before July 14, 2009. This test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.
- (b) In order to demonstrate compliance with Conditions D.1.1, D1.2 and D.1.3, the Permittee shall perform a one-time test for PM, PM10 and PM2.5 for one of the Upcaster Lines utilizing methods as approved by the Commissioner, no later than 180 days after start up of the Upcaster Lines. Testing shall be conducted in accordance with Section C - Performance Testing.

### Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

#### D.1.7 Visible Emissions Notations

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- (a) Daily visible emission notations of the baghouse stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

#### D.1.8 Parametric Monitoring

---

The Permittee shall record the pressure drop across the baghouse used in conjunction with the abrasive blasting machine at least once per day when the abrasive blasting machine is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

#### D.1.9 Broken or Failed Bag Detection

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- (a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit have been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse=s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

### **Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

#### D.1.10 Record Keeping Requirement

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- (a) To document the compliance status with Condition D.1.2, the Permittee shall maintain monthly records of the total copper throughput for the two (2) Upcaster Lines, UC-1 and UC-3.
- (b) To document the compliance status with Condition D.1.7, the Permittee shall maintain records of daily visible emission notations of the baghouse stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (c) To document the compliance status with Condition D.1.8, the Permittee shall maintain daily records of the pressure drop. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

- (d) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (c) One (1) nickel sulfate dryer equipped with an integral cyclone, constructed in 1997, with a maximum input capacity of 3,050 lbs/hr of wet nickel sulfate crystal and a maximum heat input of 0.1 MMBtu/hr, using a scrubber as control, and exhausting through stack #10.

(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 2-8-4(1)]

#### D.2.1 Hazardous Air Pollutants (HAP) [326 IAC 2-8]

Pursuant to 326 IAC 2-8, the nickel sulfate emissions from this dryer shall not exceed 0.50 pounds per hour.

Compliance with this limit, combined with the limited emissions from other emission units at this source, shall limit emissions of any single HAP from the entire source to less than ten (10) tons per year and emissions of any combination of HAPs from the entire source to less than twenty-five (25) tons per year, and will render the requirements of 326 IAC 2-7 (Part 70 Permit Program) not applicable.

#### D.2.2 Particulate Matter (PM) [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 not applicable, the PM emissions from the nickel sulfate dryer shall not exceed 0.50 pounds per hour.

Compliance with this PM limit, combined with the limited PM emissions from other emission units at this source, shall limit PM emissions from the entire source to less than one hundred (100) tons per year, and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

#### D.2.3 FESOP Limitations [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable:

- (1) PM10 emissions from the nickel sulfate dryer shall not exceed 0.50 pounds per hour.
- (2) PM2.5 emissions from the nickel sulfate dryer shall not exceed 0.50 pounds per hour.

Compliance with these limitations, combined with the limited PM10 and PM2.5 from other emission units at this source, shall limit the PM10 and PM2.5 emissions from the entire source to less than one hundred (100) tons per year and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

#### D.2.4 Particulate Emissions [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emission rate from the nickel sulfate dryer shall not exceed 5.44 pounds per hour when operating at a process weight rate of 3,050 pounds per hour. The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and  
P = process weight rate in tons per hour.

#### D.2.5 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

### Compliance Determination Requirements

#### D.2.6 Particulate and HAP Control

---

In order to comply with Conditions D.2.1, D.2.2, D.2.3, and D.2.4 the cyclone and the scrubber shall be in operation and control emissions from the nickel sulfate dryer at all times that the nickel sulfate dryer is in operation.

#### D.2.7 Testing Requirements [326 IAC 2-1.1-11]

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In order to demonstrate compliance with Condition D.2.1, the Permittee shall perform HAP testing for the nickel sulfate dryer utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

### Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

#### D.2.8 Visible Emissions Notations

---

- (a) Daily visible emission notations of the scrubber stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

#### D.2.9 Parametric Monitoring

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The Permittee shall monitor and record the pressure drop and flow rate of the scrubber, at least once per day when the nickel sulfate dryer is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 3.5 and 5.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 5.0 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum, is not a deviation from this permit. Failure to take response steps in

accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The instruments used for determining the pressure and flow rate shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

#### D.2.10 Scrubber Failure Detection

In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

### **Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

#### D.2.11 Record Keeping Requirement

- (a) To document the compliance status with Condition D.2.8, the Permittee shall maintain records of daily visible emission notations of the scrubber stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (b) To document the compliance status with Condition D.2.9, the Permittee shall:
  - (1) Maintain records of the pressure drop for each scrubber once per day during normal operation. The Permittee shall include in its records when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
  - (2) Maintain records of the flow rate for each scrubber once per day during normal operation. The Permittee shall include in its records when a flow rate reading is not taken and the reason for the lack of a flow rate reading (e.g. the process did not operate that day).
- (c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

## SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (d) One (1) copper sulfate rotary dryer, identified as CSC-3, approved for construction in 2009, with a maximum input capacity of 5,000 lbs/hr of copper sulfate crystal and a maximum heat input of 0.4MMBtu/hr, using scrubber CSC-2 as particulate control, and exhausting through stack CSC-1.

(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 2-8-4(1)]

#### D.3.1 Particulate Matter (PM) [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 not applicable, the PM emissions from the copper sulfate dryer shall not exceed 0.50 pounds per hour.

Compliance with this PM limit, combined with the limited PM emissions from other emission units at this source, shall limit PM emissions from the entire source to less than one hundred (100) tons per year, and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

#### D.3.2 FESOP Limitations [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and not applicable:

- (1) PM10 emissions from the copper sulfate dryer shall not exceed 0.50 pounds per hour.
- (2) PM2.5 emissions from the copper sulfate dryer shall not exceed 0.50 pounds per hour.

Compliance with these limitations, combined with the limited PM10 and PM2.5 from other emission units at this source, shall limit the PM10 and PM2.5 emissions from the entire source to less than one hundred (100) tons per year and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

#### D.3.3 Particulate Emissions [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emission rate from the copper sulfate dryer shall not exceed 7.58 pounds per hour when operating at a process weight rate of 5,000 pounds per hour. The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour.}$$

#### D.3.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

## Compliance Determination Requirements

### D.3.5 Particulate Control

---

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

### D.3.6 Testing Requirements [326 IAC 2-1.1-11]

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- (a) Within sixty (60) days after achieving maximum capacity, but not later than one hundred and eighty (180) days after startup, in order to demonstrate compliance with Conditions D.3.1 and D.3.3, the Permittee shall perform PM testing of the copper sulfate dryer utilizing methods approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.
- (b) In order to demonstrate compliance with Condition D.3.2, the Permittee shall perform PM<sub>2.5</sub> and PM<sub>10</sub> testing on the copper sulfate dryer within 180 days of publication of the new or revised condensible PM test method(s) referenced in the U.S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM<sub>2.5</sub>), signed on May 8th, 2008 or within 180 days after initial startup, whichever is later. This testing shall be conducted utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM<sub>10</sub> and PM<sub>2.5</sub> includes filterable and condensible PM.

## Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

### D.3.7 Visible Emissions Notations

---

- (a) Daily visible emission notations of the scrubber stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

### D.3.8 Parametric Monitoring

---

The Permittee shall monitor and record the pressure drop and flow rate of the scrubber, at least once per day when the copper sulfate dryer is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 3.5 and 5.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any

one reading, the flow rate of the scrubber is less than the normal minimum of 5.0 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum, is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The instruments used for determining the pressure and flow rate shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

#### **D.3.9 Scrubber Failure Detection**

---

In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

### **Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

#### **D.3.10 Record Keeping Requirement**

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- (a) To document the compliance status with Condition D.3.7, the Permittee shall maintain records of daily visible emission notations of the scrubber stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (b) To document the compliance status with Condition D.3.8, the Permittee shall:
  - (1) Maintain records of the pressure drop for each scrubber once per day during normal operation. The Permittee shall include in its records when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).
  - (2) Maintain records of the flow rate for each scrubber once per day during normal operation. The Permittee shall include in its records when a flow rate reading is not taken and the reason for the lack of a flow rate reading (e.g. the process did not operate that day).
- (c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition

## SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million Btu per hour:
- (1) One (1) natural gas-fired boiler, identified as Boiler #1, constructed in 1946, with a maximum heat capacity of 4.2 MMBtu/hr, and exhausting through stack #B1. [326 IAC 6-2]
  - (2) One (1) natural gas-fired boiler, identified as Boiler #2, constructed in 1979, with a maximum heat capacity of 4.2 MMBtu/hr, and exhausting through stack #B1. [326 IAC 6-2]
  - (3) One (1) natural gas-fired boiler, identified as Chem-Boiler 3, constructed in 1999, with a maximum heat capacity of 1.1 MMBtu/hr, and exhausting through stack B3. [326 IAC 6-2]
  - (4) One (1) natural gas-fired boiler, identified as Boiler #4, constructed in 2006, with a maximum heat input capacity of 2.10 MMBtu per hour. [326 IAC 6-2]

(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 2-8-4(1)]

#### D.4.1 Particulate Matter (PM) [326 IAC 6-2-3]

- 
- (a) Pursuant to 326 IAC 6-2-3(d), particulate matter emissions from Boiler #1 shall be less than 0.8 lb per MMBtu heat input.
  - (b) Pursuant to 326 IAC 6-2-3(e), particulate matter emissions from Boiler #2 shall be less than 0.6 lb per MMBtu heat input.
  - (c) Pursuant to 326 IAC 6-2-4(a), particulate matter emissions from Chem-Boiler 3 shall be less than 0.6 lb per MMBtu heat input.
  - (d) Pursuant to 326 IAC 6-2-4(a), particulate matter emissions from Boiler #4 shall be less than 0.58 lb per MMBtu heat input.

## SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (i) One (1) silver cyanide production operation, approved for construction in 2012, producing a maximum of 100 tons per month or 274 pounds per hour of silver cyanide, using potassium cyanide, nitric acid, water, and reclaimed silver metal, with emissions controlled by one (1) packed-bed atomizing scrubber.

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

### Compliance Determination Requirements [326 IAC 2-8-5(a)(1)]

#### D.5.1 Particulate Matter

---

In order to ensure that the silver cyanide is exempted from 326 IAC 6-3, the packed-bed atomizing scrubber for particulate control shall be in operation and control emissions from the silver cyanide production operation at all times that the facilities are in operation.

## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY

### FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Univertical Corporation and Univertical Chemical Company  
Source Address: 203 Weatherhead Street, Angola, Indiana 46703  
Mailing Address: 203 Weatherhead Street, Angola, Indiana 46703  
FESOP Permit No.: F151-23662-00047

**This certification shall be included when submitting monitoring, testing reports/results  
or other documents as required by this permit.**

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)\_\_\_\_\_
- Report (specify)\_\_\_\_\_
- Notification (specify)\_\_\_\_\_
- Affidavit (specify)\_\_\_\_\_
- Other (specify)\_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
Phone: 317-233-0178  
Fax: 317-233-6865**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
EMERGENCY OCCURRENCE REPORT**

Source Name: Univertical Corporation and Univertical Chemical Company  
Source Address: 203 Weatherhead Street, Angola, Indiana 46703  
Mailing Address: 203 Weatherhead Street, Angola, Indiana 46703  
FESOP Permit No.: F151-23662-00047

**This form consists of 2 pages**

**Page 1 of 2**

- |   |
|---|
| <input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none"><li>• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and</li><li>• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16</li></ul> |
|---|

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency?    Y    N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

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

**FESOP Quarterly Report**

Source Name: Univertical Corporation/Univertical Chemical Company  
Source Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP Permit No.: F151-30151-00047  
Facility: Upcaster line UC-1  
Parameter: Copper Usage  
Limit: ≤ 7,568.64 tons of Copper per 12 consecutive month period

YEAR:

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

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

**FESOP Quarterly Report**

Source Name: Univertical Corporation/Univertical Chemical Company  
Source Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP Permit No.: F151-30151-00047  
Facility: Upcaster line UC-3  
Parameter: Copper Usage  
Limit: ≤ 7,568.64 tons of Copper per 12 consecutive month period

YEAR:

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

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

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
 QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Univertical Corporation and Univertical Chemical Company  
 Source Address: 203 Weatherhead Street, Angola, Indiana 46703  
 Mailing Address: 203 Weatherhead Street, Angola, Indiana 46703  
 FESOP Permit No.: F151-23662-00047

**Months:** \_\_\_\_\_ **to** \_\_\_\_\_ **Year:** \_\_\_\_\_

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C- General Reporting. Any deviation from the requirements, of this permit the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Appendix A: Emission Calculations  
Summary**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Plt ID: 151-00047  
Reviewer: Sarah Street**

Unlimited / Uncontrolled PTE (tons/yr)									
	PM	PM10	PM2.5 <sup>γ</sup>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e	Total HAPs
Copper Finishing <sup>δ</sup>	111.69	11.19	11.19	1.55E-03	0.26	0.01	0.22	311	4.87E-03
Copper Anode Line <sup>δ</sup>	44.88	45.08	45.08	0.02	3.59	0.20	3.01	4,329	0.07
Die Casting <sup>δ</sup>	0.17	0.21	0.21	4.14E-03	0.69	0.04	0.58	817	0.01
Nickel Sulfate Dryer <sup>δ</sup>	39.42	39.42	39.42	2.58E-04	0.04	2.36E-03	0.04	52	39.42
Copper Sulfate Dryer <sup>αδ</sup>	-	-	-	1.03E-03	0.17	9.45E-03	0.14	207	3.24E-03
Sodium Cyanide Granulator <sup>δ</sup>	1.75	1.75	1.75	-	-	-	-	-	1.75
Hydrochloric Acid Tank <sup>δ</sup>	1.43	1.43	1.43	-	-	-	-	-	1.43
Natural Gas-fired Boilers <sup>δ</sup>	0.09	0.38	0.38	0.03	4.98	0.27	4.18	6,014	0.09
Storage Tanks <sup>β</sup>	-	-	-	-	-	0.16	-	-	-
Welding	0.40	0.40	0.40	-	-	-	-	-	0.01
Reaction Tanks <sup>δ</sup>	Negligible	Negligible	Negligible	-	-	Negligible	-	-	Negligible
Upcaster Process Line/EU-1	26.37	26.37	26.37	-	-	-	-	-	-
Upcaster Process Line/EU-3	26.37	26.37	26.37	-	-	-	-	-	-
Silver Electroplating	1.84E-03	1.84E-03	1.84E-03	-	-	-	-	-	1.84E-03
Silver Cyanide Production	1.20	1.20	1.20	-	-	-	-	-	1.20
<b>Total</b>	<b>253.77</b>	<b>153.79</b>	<b>153.79</b>	<b>0.06</b>	<b>9.73</b>	<b>0.70</b>	<b>8.17</b>	<b>11,729</b>	<b>44.00</b>

Limited PTE (tons/yr)									
	PM	PM10	PM2.5 <sup>γ</sup>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e	Total HAPs
Copper Finishing <sup>δ</sup>	11.19	11.19	11.19	1.55E-03	0.26	0.01	0.22	311	4.87E-03
Copper Anode Line	44.88	45.08	45.08	0.02	3.59	0.20	3.01	4,329	0.07
Die Casting <sup>δ</sup>	0.17	0.21	0.21	4.14E-03	0.69	0.04	0.58	817	0.01
Nickel Sulfate Dryer <sup>δ</sup>	2.19	2.19	2.19	2.58E-04	0.04	2.36E-03	0.04	52	2.19
Copper Sulfate Dryer <sup>αδ</sup>	2.19	2.19	2.19	1.03E-03	0.17	9.45E-03	0.14	207	3.24E-03
Sodium Cyanide Granulator <sup>δ</sup>	1.75	1.75	1.75	-	-	-	-	-	1.75
Hydrochloric Acid Tank <sup>δ</sup>	1.43	1.43	1.43	-	-	-	-	-	1.43
Natural Gas-fired Boilers <sup>δ</sup>	0.09	0.38	0.38	0.03	4.98	0.27	4.18	6,014	0.09
Storage Tanks <sup>β</sup>	-	-	-	-	-	0.16	-	-	-
Welding	0.40	0.40	0.40	-	-	-	-	-	0.01
Reaction Tanks <sup>δ</sup>	Negligible	Negligible	Negligible	-	-	Negligible	-	-	Negligible
Upcaster Process Line/UC-1	16.29	16.29	16.29	-	-	-	-	-	-
Upcaster Process Line/UC-3	16.29	16.29	16.29	-	-	-	-	-	-
Silver Electroplating	0.0018	0.0018	0.0018	-	-	-	-	-	0.00
Silver Cyanide Production	1.20	1.20	1.20	-	-	-	-	-	1.20
<b>Totals After Revisions</b>	<b>98.07</b>	<b>98.60</b>	<b>98.60</b>	<b>0.06</b>	<b>9.73</b>	<b>0.70</b>	<b>8.17</b>	<b>11,729</b>	<b>6.77</b>

**Notes:**

Assumed PM10 = PM2.5

α - Unlimited Particulate PTE not determined for the Copper Sulfate Dryer, estimated emissions after controls provided by source are approximately 0.08 tons/yr.

β - The emissions from the fuel storage tanks are from TANKS version 3.0 and were provided for the original FESOP 151-7295-00047, issued June 17, 1997.

γ - Assume PM10 =PM2.5

δ - Emissions from FESOP 151-27603-00047, issued June 16, 2009.

Emissions from Upcaster Process Lines from FESOP Significant Permit Revision, issued July 22, 2011

**Appendix A: Emission Calculations  
Emissions from Upcaster #1 and #3 Process Lines**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Plt ID: 151-00047  
Reviewer: Sarah Street**

<b>Uncontrolled Potential to Emit</b>				
Emission Unit	Copper Throughput (tons/hour)	PM Emission Factor (lbs/ton of metal processed)**	PTE Before Controls (lbs/hour)*	PTE Before Controls (tons/year)**
Upcaster #1/UC-1	0.86	7.00	6.02	26.37
Upcaster #2/UC-3	0.86	7.00	6.02	26.37
<b>Total:</b>				<b>52.74</b>

<b>Limited Potential to Emit</b>				
Emission Unit	Copper Throughput (tons/hour)	Emission Factor Limit (lb/hr) <sup>a</sup>	Limited Emissions (lbs/ton) $\alpha$	Limited Emissions (tons/year)
Upcaster #1/UC-1	0.864	3.72	4.30	16.29
Upcaster #2/UC-3	0.864	3.72	4.30	16.29
<b>Totals:</b>				<b>32.59</b>

**Note:**

\*Emission Factor are from WebFIRE, SCC 3-04-003-40 [12/05]

Copper is heated using a Electric Induction Heating System.

\*\* Upcaster process uses no controls.

$\alpha$  PM Limited Emission Factor is equal to the 326 IAC 6-3-2 allowable emission of 3.72 lb/hr.

The emission factor was lowered from 7 lb/ton to 4.3 lb/ton, such that the source can comply with 326 IAC 6-3 (see below).

**Methodology:**

PTE of PM/PM10/PM2.5 (lbs/hour) = Copper Throughput (tons/hour) x Emission Factor (lbs/ton of metal processed)

PTE of PM/PM10/PM2.5 (tons/year) = Copper Throughput (tons/hour) x Emission Factor (lbs/ton of metal processed) x (8760 hrs/1 year) X (1 ton/2000 lbs)

Limited PTE of PM/PM10/PM2.5 (lbs/hr) = 3.72

Limited PTE of PM/PM10/PM2.5 (tons/year) = Emission Factor (lbs/hr) x (8760 hours/ 1 year) x (1 ton/2000 lbs)

Allowable Rate of Emissions

Unit ID	Process Weight Rate (tons/hr)	Allowable Emissions (lbs/hr)
Upcaster UC-1	0.86	3.71
Upcaster UC-3	0.86	3.71

Based on calculations, the two (2) upcaster Lines cannot comply with this limit.

**Methodology:**

Allowable Emissions = 4.10(Process Weight Rate(tons/hour))\*0.67

**Appendix A: Emission Calculations  
Emissions from the Copper Finishing Process Line**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Pit ID: 151-00047  
Reviewer: Sarah Street**

Emissions from the copper finishing process line are mainly from the abrasive blasting machine.

**1. Potential emissions from the abrasive blasting machine:**

Copper Throughput (tons/hour)	Pollutant	Emission Factor (lbs/ton of metal processed)	Control Efficiency %	PTE Before Controls (tons/year)	PTE After Controls* (tons/year)
1.50	PM	17.0	99.5%	111.69	0.56
1.50	PM10	1.70	99.5%	11.17	0.06

**Note:**

Emission Factors are from WebFIRE, SCC 3-04-003-40 [12/05] Assume PM10=PM2.5

This abrasive blasting machine uses copper shot.

\*Control is by baghouse and the control efficiency is reported by the source.

**Methodology:**

PTE of PM/PM10 Before Controls (tons/year) = Copper Throughput (tons/hour) x Emission Factor (lbs/ton of metal processed) x 8,760 hours/year x 1 ton/2,000 lbs

PTE of PM/PM10 After Controls (tons/year) = PTE Before Controls (tons/year) x (1-Control Efficiency (%))

**2. Combustion emissions from the natural gas-fired washing machine:**

Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMSCF/yr)
0.60	5.15

Emission Factor (lb/MMSCF)	Pollutant						
	PM*	PM10*	SO <sub>2</sub>	NO <sub>x</sub> **	VOC	CO	HAPs
	1.9	7.6	0.6	100	5.5	84.0	1.89
Potential to Emit (tons/yr)	4.90E-03	0.02	1.55E-03	0.26	1.42E-02	0.22	4.87E-03

\*PM emission factor is for filterable PM. PM10 emission factor is for condensable and filterable PM combined.

\*\*Emission Factor for NO<sub>x</sub>: Uncontrolled = 100

Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3 (7/98)

All Emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology:**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu

Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations  
Emissions from the Copper Anode Process Line**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Plt ID: 151-00047  
Reviewer: Sarah Street**

**1. From Shaft Melter:**

Copper Input (lbs/hr)	Potential Throughput (tons/yr)					
4,000	17,520					
	Pollutant					
Emission Factor (lb/ton)	PM*	PM10*	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
	5.1	5.1	NA	NA	NA	NA
Potential to Emit (tons/yr)	44.68	44.68	-	-	-	-

\* Assume PM = PM10.  
Emission Factor is from AP-42, Chapter 12.9, Table 12.9-2, SCC #3-04-002-14 (reverberatory furnace for copper, 11/94).

**Methodology**

Potential Throughput (tons/yr) = Copper Input (lbs/hr) x 8,760 hrs/yr x 1 ton/2,000 lbs  
Potential to Emit (tons/yr) = Potential Throughput (tons/yr) x Emission Factor (lb/ton) x 1 lb/2,000 tons

**2. From Shaft Melter Combustion (8.0 MMBtu/hr) and Tumbler Combustion (0.35 MMBtu/hr)**

Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMSCF/yr)						
8.35	71.7						
	Pollutant						
Emission Factor (lb/MMSCF)	PM*	PM10*	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	HAPs
	1.9	7.6	0.6	100	5.5	84.0	1.89
Potential to Emit (tons/yr)	0.07	0.27	0.02	3.59	0.20	3.01	0.07

\*PM emission factor is for filterable PM. PM10 emission factor is for condensable and filterable PM combined.

\*\*Emission Factor for NO<sub>x</sub>: Uncontrolled = 100  
Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3 (7/98)  
All Emission factors are based on normal firing.  
MMBtu = 1,000,000 Btu  
MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu  
Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF) x 1 ton/2,000 lbs

**3. From Continuous Casting:**

Copper Input (lbs/hr)	Potential Throughput (tons/yr)					
4,000	17,520					
	Pollutant					
Emission Factor (lb/ton)	PM*	PM10*	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
	0.015	0.015	NA	NA	NA	NA
Potential to Emit (tons/yr)	0.13	0.13	-	-	-	-

\* Assume PM = PM10.  
Emission factors are from FIRE Version 6.25, SCC 3-04-002-39 (Copper Casting Operation).

**Methodology**

Potential Throughput (tons/yr) = Copper Input (lbs/hr) x 8,760 hrs/yr x 1 ton/2,000 lbs  
Potential to Emit (tons/yr) = Potential Throughput (tons/yr) x Emission Factor (lb/ton) x 1 ton/2,000 lbs

**4. Total Potential to Emit from the Copper Anode Process Line:**

Pollutant	PM	PM10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	HAPs
<b>Total Potential to Emit (tons/yr)</b>	<b>44.88</b>	<b>45.08</b>	<b>0.02</b>	<b>3.59</b>	<b>0.20</b>	<b>3.01</b>	<b>0.07</b>

**Appendix A: Emission Calculations**  
**Emissions from the Die Casting Process Line (Insignificant)**

**Company Name: Univertical Corporation and Univertical Chemical Corporation**  
**Address: 203 Weatherhead Street, Angola, IN 46703**  
**FESOP AA: 151-32197-00047**  
**Plt ID: 151-00047**  
**Reviewer: Sarah Street**

**1. From Tin Melting Pot Furnace:**

Tin Input (tons/hr)	Potential Throughput (tons/yr)					
0.25	2,190					
	Pollutant					
Emission Factor (lb/ton)	PM*	PM10*	SO <sub>2</sub>	NOx	VOC	CO
	0.03	0.03	NA	NA	NA	NA
Potential to Emit (tons/yr)	0.03	0.03	-	-	-	-

\* Assume PM = PM10.  
 Emission factor is from AP-42, Table 12.11-2, SCC #3-04-004-26 (kettle refining for lead, 01/95).  
 This is the only available emission factor for melting of refined (pure) metal process in AP-42.

**Methodology**

Potential Throughput (tons/yr) = Tin Input (tons/hr) x 8,760 hrs/yr  
 Potential to Emit (tons/yr) = Potential Throughput (tons/yr) x Emission Factor (lb/ton) x 1 ton/2,000 lbs

**2. From Solder Melting Pot Furnace:**

Solder Input (tons/hr)	Potential Throughput (tons/yr)					
0.25	2,190					
	Pollutant					
Emission Factor (lb/ton)	PM*	PM10*	SO <sub>2</sub>	NOx	VOC	CO
	0.03	0.03	NA	NA	NA	NA
Potential to Emit (tons/yr)	0.03	0.03	-	-	-	-

\* Assume PM = PM10.  
 Emission factor is from AP-42, Table 12.11-2, SCC #3-04-004-26 (kettle refining for lead, 01/95).  
 This is the only available emission factor for melting of refined (pure) metal process in AP-42.

**Methodology**

Potential Throughput (tons/yr) = Solder Input (tons/hr) x 8,760 hrs/yr  
 Potential to Emit (tons/yr) = Potential Throughput (tons/yr) x Emission Factor (lb/ton) x 1 ton/2,000 lbs

**3. From Die Casting :**

**Tin or Solder Input (tons/hr)	Potential Throughput (tons/yr)					
0.5	4,380					
	Pollutant					
Emission Factor (lb/ton)	PM*	PM10*	SO <sub>2</sub>	NOx	VOC	CO
	0.04	0.04	NA	NA	NA	NA
Potential Emission (tons/yr)	0.09	0.09	-	-	-	-

\* Assume PM = PM10.  
 \*\* The die casting process is bottlenecked by the tin and solder melting processes which have a combined throughput of 0.5 tons/hr.  
 Emission factors is from AP-42, Table 12.11-2, SCC #3-04-004-09 (lead casting, 01/95)  
 These emission factors were used due to a lack of emission factors for tin or solder casting.

**Methodology**

Potential Throughput (tons/yr) = Tin or Solder Input (tons/hr) x 8,760 hrs/yr  
 Potential to Emit (tons/yr) = Potential Throughput (tons/yr) x Emission Factor (lb/ton) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations  
Emissions from the Die Casting Process Line (continued)**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Pit ID: 151-00047  
Reviewer: Sarah Street**

**4. From Natural Gas Combustion:**

- (a) Tin Melting Pot Furnace (0.35 MMBtu/hr)
- (b) Solder Melting Pot Furnace (0.35 MMBtu/hr)
- (c) Die Casting Combustion (0.875 MMBtu/hr)

Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMSCF/yr)
1.58	13.8

	Pollutant						
	PM*	PM10*	SO <sub>2</sub>	**NOx	VOC	CO	HAPs
Emission Factor in lb/MMCF	1.9	7.6	0.6	100	5.5	84.0	1.89
Potential Emission in tons/yr	0.01	0.05	4.14E-03	0.69	0.04	0.58	0.01

\*PM emission factor is for filterable PM. PM10 emission factor is for condensable and filterable PM combined.

\*\*Emission Factor for NO<sub>x</sub>: Uncontrolled = 100

Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3 (7/98)

All Emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu

Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF) x 1 ton/2,000 lbs

**5. Total Emissions from the Die Casting Process Line:**

Pollutant	PM	PM10	SO <sub>2</sub>	NOx	VOC	CO	HAPs
<b>Total Potential Emission (tons/yr)</b>	<b>0.17</b>	<b>0.21</b>	<b>4.14E-03</b>	<b>0.69</b>	<b>0.04</b>	<b>0.58</b>	<b>0.01</b>

**Appendix A: Emission Calculations  
Emissions from the Nickel Sulfate Drying Process**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Plt ID: 151-00047  
Reviewer: Sarah Street**

**1. Emissions from the Dryer (according to the mass balance of this process):**

Wet Nickel Sulfate Input: 3050 lbs/hr  
 Evaporated Water: 50 lbs/hr  
 \*PM/PM10 % passes the cyclone: 0.30% (The cyclone is an integral control device used to collect the NiSO<sub>4</sub>. According to mass balance, only 0.30% of NiSO<sub>4</sub> is released to the scrubber.)  
 Scrubber Control Efficiency: 99.0% (The scrubber is used to control particulate emissions.)

Potential to Emit PM/PM10 (lbs/hr) = (3050 lbs/hr - 50 lbs/hr) x 0.30% = 9.00 lbs/hr  
 Potential to Emit PM/PM10 (tons/yr) = 9.00 lbs/hr x 8760 hrs/yr x 1 ton/2000 lbs = 39.42 tons/yr

Potential to Emit (after control):  
 PM/PM10 (lbs/hr) = 9.00 lbs/hr x (1-99.0%) = 0.09 lbs/hr  
 PM/PM10 (tons/yr) = 39.4 tons/yr x (1-99.0%) = 0.39 tons/yr

**Note:**  
 \* Assume PM = PM10 and Nickel sulfate is considered a hazardous air pollutant.

**2. Emissions from Combustion**

Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMSCF/yr)					
0.1	0.86					
	Pollutant					
Emission Factor (lb/MMSCF)	PM*	PM10*	SO <sub>2</sub>	NO <sub>x</sub> **	VOC	CO
	1.9	7.6	0.6	100	5.5	84.0
Potential to Emit (tons/yr)	8.2E-04	3.3E-03	2.6E-04	0.04	2.4E-03	0.04

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (7/98)  
 \*PM emission factor is for filterable PM. PM10 emission factor is for condensable and filterable PM combined.  
 \*\*Emission Factor for NO<sub>x</sub>: Uncontrolled = 100  
 All Emission factors are based on normal firing.  
 MMBtu = 1,000,000 Btu  
 MMCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**  
 Potential Throughput (MMSCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu  
 Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF) x 1 ton/2,000 lbs

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene	Dichlorobenzen	Formaldehy	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	9.018E-07	5.153E-07	3.221E-05	7.729E-04	1.460E-06

HAPs - Metals					
Emission Factor in lb/MMcf	Lead	Cadmium	Chromium	Manganese	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.147E-07	4.724E-07	6.012E-07	1.632E-07	9.018E-07

**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.

**3. Total Emissions from the Nickel Sulfate Drying Process:**

Pollutant	PM	PM10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Nickel Sulfate	Other HAPs
<b>Total Potential to Emit (tons/yr)</b>	<b>39.42</b>	<b>39.42</b>	<b>2.6E-04</b>	<b>0.04</b>	<b>2.4E-03</b>	<b>0.04</b>	<b>39.42</b>	<b>8.10E-04</b>
<b>Total Potential to Emit After Control (tons/yr)</b>	<b>0.40</b>	<b>0.40</b>	<b>2.6E-04</b>	<b>0.04</b>	<b>2.4E-03</b>	<b>0.04</b>	<b>0.39</b>	<b>8.10E-04</b>

**Appendix A: Emission Calculations  
Emissions from the Copper Sulfate Drying Process**

Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Plt ID: 151-00047  
Reviewer: Sarah Street

**1. Controlled Emissions from Copper Sulfate Dryer (estimated from Nickel Sulfate Dryer stack test):**

Unit ID	Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.)	Gas or Air Flow Rate (acfm.)	PM/PM10/PM2.5 Controlled Emissions	
			(lb/hr)	(tons/yr)
Copper Sulfate Dryer	0.00210	919	0.017	0.072

Notes:  
Assume PM = PM10 = PM2.5

**2. Emissions from Combustion**

Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMSCF/yr)					
0.4	3.44					
	Pollutant					
Emission Factor (lb/MMSCF)	PM*	PM10*	SO <sub>2</sub>	NO <sub>x</sub> **	VOC	CO
	1.9	7.6	0.6	100	5.5	84.0
Potential to Emit (tons/yr)	3.3E-03	0.01	1.0E-03	0.17	9.4E-03	0.14

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (7/98)  
\*PM emission factor is for filterable PM. PM10 emission factor is for condensable and filterable PM combined.  
\*\*Emission Factor for NO<sub>x</sub>: Uncontrolled = 100  
All Emission factors are based on normal firing.  
MMBtu = 1,000,000 Btu  
MMCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu  
Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF) x 1 ton/2,000 lbs

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.607E-06	2.061E-06	1.288E-04	3.092E-03	5.840E-06

Emission Factor in lb/MMcf	HAPs - Metals			
	Lead	Cadmium	Chromium	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04
Potential Emission in tons/yr	8.588E-07	1.889E-06	2.405E-06	6.527E-07

**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.

**3. Total Emissions from Copper Sulfate Drying Process:**

Pollutant	PM	PM10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	HAPs
Total Potential to Emit (tons/yr) After Control (tons/yr)	0.08	0.08	1.0E-03	0.17	9.4E-03	0.14	5.49E-03
Total Limited Potential to Emit (tons/yr)	2.19	2.19	1.0E-03	0.17	9.4E-03	0.14	5.49E-03

**Appendix A: Emission Calculations  
PM/PM10 and HAPs from the Sodium Cyanide Granulator**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Plt ID: 151-00047  
Reviewer: Sarah Street**

**1. Process Description:**

<b>Sodium Cyanide Input:</b>	<b>4,000 lbs/hr</b>
<b>*PM % Enters the Scrubber:</b>	<b>0.01% (**according to a mass balance analysis of this process)</b>
<b>Control Device:</b>	<b>Scrubber</b>
<b>Control Efficiency:</b>	<b>99.0%</b>

\* Assume PM = PM10. Sodium Cyanide is a hazardous air pollutant.

\*\*The calculation is consistent with Univertical's past experience of packaging 99.99% of the sodium cyanide brick entering the granulator and the concentration of the solution formed in the scrubber.

**2. Uncontrolled potential emissions from the granulator:**

Potential to Emit PM/PM10 (lbs/hr) = 4,000 lbs/hr x 0.01% =	<b>0.40 lbs/hr</b>
Potential to Emit PM/PM10 (tons/yr) = 4,000 lbs/hr x 8760 hrs/yr x 0.01% x 1 ton/2000 lbs =	<b>1.75 tons/yr</b>
Potential to Emit HAP (Sodium Cyanide) (tons/yr) =	<b>1.75 tons/yr</b>

**Appendix A: Emission Calculations  
PM and HAP Emissions  
From the Hydrochloric Acid Storage Tank (Tank 201)**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Pit ID: 151-00047  
Reviewer: Sarah Street**

**1. Process Descriptions:**

<b>Tank Capacity:</b>	<b>6,100</b>	<b>gal</b>
<b>Max Throughput:</b>	<b>67.5</b>	<b>gal/hr</b>
<b>Max Throughput:</b>	<b>590,000</b>	<b>gal/yr</b>
<b>Control Device:</b>	<b>Acid Scrubber</b>	
<b>Control Efficiency:</b>	<b>90%</b>	

**2. Uncontrolled Potential Emissions**

This is a closed tank vented only during loading operation. The exhaust is directed to an acid scrubber. The hydrochloric acid is emitted as a mist. Therefore, the OAQ considers this to be particulate matter emissions as well as HAP emissions. According to AP-42, Chapter 5.2, emission factor for splash loading of volatile liquids can be estimated using the following equation:

$$L = \frac{12.46 \times S \times P \times M}{T}$$

Where

- L = loading loss emission factor (lbs/kgal of liquid loaded)
- S = saturation factor = 1.45 for splash loading with dedicated normal service
- P = true vapor pressure of liquid loaded = 3.87 psia
- M = molecular weight of vapors = 36.5 lb/lb-mole
- T = temperature of bulk liquid loaded = 528 degrees Rankine

Therefore

$$L = \frac{12.46 \times 1.45 \times 3.87 \times 36.5}{528} = 4.83 \text{ lbs/ kgal of liquid loaded}$$

Potential to Emit PM/PM10/HAP (Hydrochloric Acid):

= 67.5 gal/hr x 1 kgal/1000 gal x 4.83 lbs/kgal =	<b>0.33 lbs/hr</b>
= 67.5 gal/hr x 1 kgal/1000 gal x 4.83 lbs/kgal x 8760 hr/yr x 1 ton/2000 lb =	<b>1.43 tons/yr</b>

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
Boilers**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Pit ID: 151-00047  
Reviewer: Sarah Street**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Emission Unit ID
4.2	36.1	Boiler #1
4.2	36.1	Boiler #2
1.1	9.4	Chem-Boiler 3
2.1	18.0	Boiler #4
<b>11.6</b>	<b>99.6</b>	

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.09	0.38	0.03	4.98	0.27	4.18

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.046E-04	5.977E-05	3.736E-03	8.966E-02	1.694E-04

Emission Factor in lb/MMcf	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.491E-05	5.479E-05	6.974E-05	1.893E-05	1.046E-04

**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

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations**  
**Emissions from the Chemical Reaction Tanks**

**Company Name: Univertical Corporation and Univertical Chemical Corporation**  
**Address: 203 Weatherhead Street, Angola, IN 46703**  
**FESOP AA: 151-32197-00047**  
**Plt ID: 151-00047**  
**Reviewer: Sarah Street**

**1. Tank # 22: Nickel Acetate Production**

This reaction is performed with a stoichiometric excess of nickel oxide of about 65 lbs. The excess nickel oxide will be allowed to settle out of the solution so that Univertical can reuse it in the next batch. Since the tank is covered with only a vent to stabilize pressure, there are negligible emissions associated with this process.

**2. Tanks # 70, 71, 72: Nickel Sulfamate Production**

This reaction is performed with a stoichiometric excess of nickel of about 700 lbs. The excess nickel will be allowed to settle out of the solution so that Univertical can reuse it in the next batch. Since the tank is covered with only a vent to stabilize pressure, there are negligible emissions associated with this process.

**3. Tank # 118: Nickel Bromide Production**

This reaction is performed with a stoichiometric excess of nickel oxide of about 425 lbs. The excess nickel oxide will be allowed to settle out of the solution so that Univertical can reuse it in the next batch. Since the tank is covered with only a vent to stabilize pressure, there are negligible emissions associated with this process.

**4. Tank # 13: Cuprous Chloride Production**

This reaction is performed with a stoichiometric excess of copper of about 4600 lbs so that the reaction will proceed. The hydrochloric acid that is added will completely react such that the remaining products are cuprous chloride, sodium chloride, and water. Since none of these compounds are hazardous air pollutants (HAPs) or volatile organic compounds (VOC) and no particulate emissions are generated, there are no emissions associated with this process.

**5. Tank # 14: Cuprous Cyanide Production**

The cuprous chloride product from tank #4 is transferred to the cuprous cyanide production tanks and mixed with sodium cyanide. Neither of these is added in excess, with the reaction going to completion. The products are cuprous cyanide and sodium chloride. Since the cuprous cyanide forms a flock and is centrifuged, the emissions associated with this process are negligible.

**6. Tank # 17: Sodium Zinc Cyanide Production**

According to the maximum production rates and mass balance given by Univertical, there will be no emissions associated with this process. This process is not a reaction but a mixture of solutions with input equaling output.

**7. Tanks # 16 and 19: Sodium Copper Cyanide Production**

According to the maximum production rates and mass balance given by Univertical, there will be no emissions associated with this process. This process is not a reaction but a mixture of solutions with input equaling output.

**8. Tank # 20: Sodium Cyanide Production**

According to the maximum production rates and mass balance given by Univertical, there will be no emissions associated with this process. This process is not a reaction but a mixture of solutions with input equaling output.

**9. Tank # 5: Nickel Sulfate Wet Crystal Production**

According to the maximum production rates and mass balance given by Univertical, there will be no emissions associated with this process. This process is not a reaction but a mixture of solutions with input equaling output.

**Appendix A: Emission Calculations  
Insignificant Emissions from Welding**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Pit ID: 151-00047  
Reviewer: Sarah Street**

Welding Type	Number of Stations	Max. electrode consumption per station (lbs/hr)	Emission Factors (lb pollutant/lb electrode)				Potential to Emit (tons/yr)				Total HAPS (tons/yr)
			PM/PM10	Mn	Ni	Cr	PM/PM10	Mn	Ni	Cr	
Metal Inert Gas (MIG)(carbon steel)	3	3.00	5.50E-03	5.00E-04	N/A	N/A	0.22	0.020	N/A	N/A	N/A
Stick (E7018 electrode)	2	1.13	1.84E-02	1.03E-03	2.00E-06	6.00E-06	0.18	0.010	0.000	5.91E-05	0.01
<b>Total</b>							<b>0.40</b>	<b>0.03</b>	<b>1.97E-05</b>	<b>5.91E-05</b>	<b>0.01</b>

Emission factors for MIG welding are default values for carbon steel.

Emission factors for Stick welding (E7018 electrode) are from AP-42, Chapter 12.19, Tables 12.19-1 and 12.19-2 (1/95)

**Methodology**

Potential to Emit (tons/yr) = Number of Stations x Max. Electrode Consumption per Station (lbs/hr) x Emission Factor (lb pollutant/lb electrode) x 8,760 hrs/yr x 1 ton/2,000 lbs

**Appendix A: Emission Calculations  
Emissions from the Silver Electroplating Line**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Plt ID: 151-00047  
Reviewer: Sarah Street**

SUMMARY OF OPERATING PARAMETERS FOR SILVER CYANIDE PLATING BATHS*	
Parameter	Value
Silver, as KAg (CN) <sub>2</sub> , g/L (oz/gal)	5-40 (0.67-5.3)
Potassium cyanide (free), g/L (oz/gal)	12-120 (1.6-16)
Potassium carbonate (min.), g/L (oz/gal)	15 (2)
Temperature, °C (°F)	20-30 (70-85)
Current density, A/m <sup>2</sup> (A/ft <sup>2</sup> )	11-430 (1-40)

**Equation (1) from AP-42 Chapter 12.20 Electroplating**

$$EF_m = 3.3 \times 10^{-7} \times (EE_m/e_m) \times C_m \times D_m$$

EF<sub>m</sub> = emission factor for metal "m", grains/dscf;  
 EE<sub>m</sub> = electrochemical equivalent for metal "m", A-hr/mil-ft<sup>2</sup>;  
 e<sub>m</sub> = cathode efficiency for metal "m", percent;  
 C<sub>m</sub> = bath concentration for metal "m", oz/gal; and  
 D<sub>m</sub> = current density for metal "m", A/ft<sup>2</sup>

\*Table 2-28 Source: Emission Factor Documentation for AP-42 Section 12.20, Electroplating: Final Report (July 1996)  
 Equation (1) from AP-42 Chapter 12.20 Electroplating provides an estimate of uncontrolled emissions from nonchromium plating tanks. This equation is used to estimate emissions from silver electroplating tanks.

Silver (metal "m") Electroplating Tanks Emissions Estimation	PBB-T1	PBB-T2	PBB-T3	PBB-T4	PBB-T5
	potassium hydroxide electrocleaning process tank	acid activation tank (sulfuric acid or peroxide or sodium persulfate)	potassium cyanide pre-dip tank	potassium silver cyanide silver strike tank	potassium silver cyanide silver plate tank
EE <sub>m</sub> = electrochemical equivalent for metal "m", A-hr/mil-ft <sup>2</sup> , (1)	6.16	6.16	6.16	6.16	6.16
e <sub>m</sub> = cathode efficiency for metal "m", percent,(2)	30	30	30	30	30
C <sub>m</sub> = bath concentration for metal "m", oz/gal; (3)	0	0	16	5.3	5.3
D <sub>m</sub> = current density for metal "m", A/ft <sup>2</sup> (4)	40	40	40	40	40
<b>EF<sub>m</sub> = emission factor for metal "m", grains/dscf;</b>	<b>0</b>	<b>0</b>	<b>4.34E-05</b>	<b>1.44E-05</b>	<b>1.44E-05</b>
Emission Factor in grains/A-hr (5)	0	0	4.34E-03	1.44E-03	1.44E-03
Capacity (A-hr) (6)	500	0	0	50	2,000
<b>Emissions (tons/year) = Ef<sub>m</sub> (grains/A-hr) * Capacity (A-hr) * lbs/7,000 grains * 8760 hrs/yr * ton/2000 lbs</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4.49E-05</b>	<b>1.80E-03</b>

<b>Total PM (as silver) emissions (tons/yr)</b>	<b>1.84E-03</b>
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<b>Total HAPs (cyanide [CN] compounds) (tons/yr)</b>	<b>1.84E-03</b>
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**Notes**

- (1) Electrochemical equivalent for silver, TABLE 3-1. ELECTROCHEMICAL EQUIVALENTS OF PLATING METALS, Emission Factor Documentation for AP-42 Section 12.20, Electroplating: Final Report (July 1996)
  - (2) Using 30% (worst case scenario) from Table 2-10 SUMMARY OF OPERATING PARAMETERS FOR COPPER POTASSIUM AND SODIUM CYANIDE PLATING BATHS, Emission Factor Documentation for AP-42 Section 12.20, Electroplating: Final Report (July 1996)
  - (3) Value taken from Table 2-28 above based on material, using worst case scenario  
 There is no silver or cyanide compounds in tanks PBB-T1 or PBB-T2
  - (4) Using worst case scenario from Table 2-28 above.
  - (5) To convert grains/A-hr to grains/dscf, multiply by 0.01. To convert grains/dscf to grains/A-hr multiply by 100.
  - (6) Information supplied by source. The silver strike and silver plating takes place in tanks PBB-T4 and PBB-T5, which are equipped with rectifiers. Tank PBB-T5 has 4 separate rectifiers, each with 500 A-hr
- The materials used in this operation are non-VOC containing materials. There are no VOC emissions from this process.

**Appendix A: Emission Calculations  
Emissions from the Silver Cyanide Production**

**Company Name: Univertical Corporation and Univertical Chemical Corporation  
Address: 203 Weatherhead Street, Angola, IN 46703  
FESOP AA: 151-32197-00047  
Pit ID: 151-00047  
Reviewer: Sarah Street**

**Small Quantity Silver Cyanide Production**

100 tons per month  
1200 tons per year  
273.9726 pounds per hour

\*Information provided by source

**Process Description**

**Silver Cyanide Input: 274 lbs/hr  
Control Device: Packed bed atomizing scrubber  
Control Efficiency: 99.9%  
\*PM % Enters the Scrubber: 0.10%**

\* Assume PM = PM10 = PM2.5. Cyanide compounds are considered a hazardous air pollutant (HAP).

**Uncontrolled PTE**

Potential to Emit PM (lbs/hr) = 274 lbs/hr x 0.01% =	<b>0.27 lbs/hr</b>
Potential to Emit PM (tons/yr) = 274lbs/hr x 8760 hrs/yr x 0.01% x 1 ton/2000 lbs =	<b>1.20 tons/yr</b>
Potential to Emit HAP (Silver Cyanide) (tons/yr) =	<b>1.20 tons/yr</b>

**Notes:**

Input to silver cyanide production: potassium cyanide, nitric acid, water, and silver metal

Potassium cyanide is an inorganic compound; Silver cyanide is a white powder

Nitric Acid is not a HAP.

The materials used in this operation are non-VOC containing materials. There are no VOC emissions from this process.

**Appendix A: Emissions Calculations**  
**Greenhouse Gas Emissions: Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Company Name: Univertical Corporation and Univertical Chemical Corporation**  
**Address: 203 Weatherhead Street, Angola, IN 46703**  
**FESOP AA: 151-32197-00047**  
**Pit ID: 151-00047**  
**Reviewer: Sarah Street**

Heat Input Capacity MMBtu/hr		HHV mmBtu mmscf	Potential Throughput MMCF/yr	Emission Unit	
11.60	Boilers (All)	1020	99.6	Boiler #1	4.2
0.60	Copper Finishing	1020	5.2	Boiler #2	4.2
8.35	Copper Anode	1020	71.7	Chem-Boiler 3	1.1
1.58	Die Casting	1020	13.5	Boiler #4	2.1
0.10	Nickel Sulfate Dryer	1020	0.9	<b>Total All Boilers</b>	<b>11.6</b>
0.40	Copper Sulfate Dryer	1020	3.4		

Emission Factor in lb/MMcf	Emission Unit	Greenhouse Gas		
		CO2 120,000	CH4 2.3	N2O 2.2
Potential Emission in tons/yr	Boilers (All)	5,977	0.1	0.1
	Copper Finishing	309	0.0	0.0
	Copper Anode	4,303	0.1	0.1
	Die Casting	812	0.0	0.0
	Nickel Sulfate Dryer	52	0.0	0.0
	Copper Sulfate Dryer	206	0.0	0.0
Summed Potential Emissions in tons/yr	Boilers (All)		5,978	
	Copper Finishing		309	
	Copper Anode		4,303	
	Die Casting		812	
	Nickel Sulfate Dryer		52	
	Copper Sulfate Dryer		206	
CO2e Total in tons/yr	Boilers (All)		6,014	
	Copper Finishing		311	
	Copper Anode		4,329	
	Die Casting		817	
	Nickel Sulfate Dryer		52	
	Copper Sulfate Dryer		207	
			<b>11,729</b>	

**Methodology**

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.

Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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*Mitchell E. Daniels Jr.*  
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*Thomas W. Easterly*  
**Commissioner**

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

**TO:** Chris Pontorno  
Univertical Corporation and Univertical Chemical Company  
203 Weatherhead St  
Angola, IN 46703

**DATE:** September 14, 2012

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

**SUBJECT:** Final Decision  
FESOP  
151-32197-00047

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:  
David Whitehead, Responsible Official  
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](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07

# Mail Code 61-53

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2		David Whitehead VP/GM Univertical Corporation - Univertical Chemical Com 203 Weatherhead St Angola IN 46703 (RO CAATS)										
3		Steuben County Board of Commissioners 317 S Wayne Suite 2H Angola IN 46703 (Local Official)										
4		Steuben County Health Department 317 S. Wayne St, Community Center Suite 3-A Angola IN 46703-1938 (Health Department)										
5		Mr. Steve Christman NISWMD 2320 W 800 S, P.O. Box 370 Ashley IN 46705 (Affected Party)										
6		Angola City Council and Mayors Office 210 N. Public Square Angola IN 46703 (Local Official)										
7		Mr. Diane Hanson 490 E 300 N Angola IN 46703 (Affected Party)										
8		Orland Town Council P.O. Box 445 Orland IN 46776 (Local Official)										
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