

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: **date, 2008**

Region: Mooresville Regional Office
County: Gaston
NC Facility ID: 3600078
Inspector's Name: Joe Foutz
Date of Last Inspection: 09/04/2007
Compliance Code: 3/In Compliance - Inspection

Facility Data	Permit Applicability (this application only)
<p>Applicant (Facility's Name): FMC Corporation - Lithium Division</p> <p>Facility Address: FMC Corporation - Lithium Division 1115 Bessemer City - Kings Mtn. Hwy. Bessemer City, NC 28016</p> <p>SIC: 2819 / Industrial Inorganic Chemicals NAICS: 325188 / All Other Basic Inorganic Chemical Manufacturing</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p>SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:</p>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 3600078.06A Date Received: 03/31/2006 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 03560/T42 Existing Permit Issue Date: 11/14/2006 Existing Permit Expiration Date: 12/31/2006</p>
<p>John Casisa REM, Environmental Manager (704) 868-5897 P.O. Box 795 Bessemer City NC, 28016</p>	<p>David Kenna Plant Manager (704) 868-0896 P.O. Box 795 Bessemer City NC, 28016</p>	<p>John Casisa REM, Environmental Manager (704) 868-5897 P.O. Box 795 Bessemer City NC, 28016</p>	

<p>Review Engineer: Mark Cuilla</p> <p>Review Engineer's Signature: Date: date, 2008</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue 03560/T43 Permit Issue Date: date, 2008 Permit Expiration Date: date, 2013</p>
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I. Purpose of Application

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (**03560T41**) was issued on **January 9, 2003**, and has an expiration date of **December 31, 2006**. The renewal application was received on **March 31, 2006**, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

As part of this renewal, the Permittee has made the following requests:

1. that the annual compliance certification date be changed to **March 1** of each calendar year in accordance with current DAQ policy (*It should be noted that this was completed as part of the recent modification 03560T42*);
2. remove the butyllithium quench reactor (**ID No. ES-BLQ01**). As a result of removing this source from the permit, condition 2.2 A.2.c must be removed as well;
3. remove the lithium chromate reactor (**ID No. ES-LBLC04**);

4. the organometallics semiworks facility (**ID No. ES-OSW**) was added as part of a modification in 2002. The written notification of its startup has been submitted, therefore, Part II of the permit is completed and should be removed;
5. remove condition 2.2 A.2.a, requiring that nitric acid shall not be used in the OSW/SIPP operations concurrent with the filling of the SI/CP nitric acid storage tank, as the Permittee has no plans to use nitric acid in the OSW/SIPP operations. As such, 2.2 A.2.h should be modified as well to remove the words “nitric acid”;
6. add the oil smoke removal system to the list of insignificant sources (See DAQ applicability determination **September 16, 2003**); and
7. add Compliance Assurance Monitoring (CAM) plan requirements as needed.

II. Facility Description

The facility manufactures and processes lithium metal, inorganic and organic lithium compounds and derivatives used in batteries, corning ware products, golf balls, television tubes, pharmaceuticals, and many other industrial applications. Current permitted equipment includes boilers, lithium carbonate packaging and receiving operations, lithium repackaging operations, and lithium hydroxide, lithium chloride, lithium bromide/chromate, lithium metal, lithium hypochlorite, lithium hydride, and lithium amide production operations. Also permitted are specialty inorganics and organics production, butyl lithium production, and organometallics semiworks operations.

III. History/Background/Application Chronology

January 29, 2002 – Permit **03560T40** was issued as a first time Title V permit.

January 9, 2003 – Permit **03560T41** was issued as a 502(b)(10) modification for the construction of the organometallics semiworks operations (**ID No. OSW**) replacing the organometallics pilot plant (**ID No. OMPP**).

March 31, 2006 – Permit application **3600078.06A** received as a title V renewal application. The permit application was deemed complete for processing.

April 18, 2006 – Received MRO comments on renewal application via email.

November 14, 2006 – Permit **03560T42** was issued as a minor modification for the construction of a replacement cyclone (**ID No. CD-LOH01-1**).

September 26, 2007 – Mr. John Casisa of FMC sent the following list of additional changes/deletions as part of the Title V renewal application:

1. remove all references to **ES-LHA02**;
2. remove all references to **ES-BLQ01**;
3. remove all references to **ES-SIPP**; and
4. remove all references to the nitric acid tank.

In addition, as part of a request from Mark Cuilla, he submitted a final list of CAM applicable sources.

October 9, 2007 – Spoke with Mr. John Casisa of FMC concerning specific “normal operation ranges” for the CAM applicable control devices. He stated that the two cartridge filters (**ID Nos. CD-LCW-02 and CD-LCE-03**) measure pressure differential continuously on a panel. Their normal delta P is 5 inches of water and at around 4 inches of water, the filters are scheduled for replacement. The fabric filter (**ID No. CD-LHC04-1B**) also measures delta P. Its normal operating range is 2 to 3 inches of water. The packed bed scrubber (**ID No. CD-PACK01-2**) is checked for pump pressure and tank reservoir level. Normal operating range is 8 to 12 pounds per square inch and a tank level of 1/3 to 2/3 full as seen through a sight glass.

In addition to the CAM applicable source conversation, Mr. Casisa submitted an equipment description change for the equipment listed as part of the specialty organic production operations. Specifically, he requested that the tanks be listed more generically in order for the facility to be more flexible with its storage needs.

October 18, 2007 – Received email from Mr. John Casisa of FMC with the suggested equipment description as mentioned above. The following table represents the equipment designations that have been modified as a result of this request:

Current ID No.	Proposed ID No.	Current Description	Proposed Description
ES-SO-R1	ES-SO01-PV01 through ES-SO01-PV10	One reactor and process condenser, two product filters, and seven process tanks	Various production activities including: -30 process vessels (e.g., process reactors, filters, and or process tanks; Nos. PV01 through PV30) -36 storage tanks (Nos. ST01 through ST36) -one railcar loadout station (No. RCL01)
ES-SO-R2	ES-SO01-PV11 through ES-SO01-PV26	One reactor and process condenser, four product filters, and 11 process tanks	
ES-QRT	ES-SO01-PV27 through ES-SO01-PV30	One reactor and process condenser and three process tanks	
ES-SO-LTB1	ES-SO01-ST01 through ES-SO01-ST05	Five storage tanks	
ES-SO-LTHF1	ES-SO01-ST06 through ES-SO01-ST10	Five storage tanks	
ES-SO-M	ES-SO01-ST11 through ES-SO01-ST14	Four storage tanks	
ES-SORM1	ES-SO01-ST15 and ES-SO01-ST16	Two storage tanks	
ES-SO-LDA	ES-SO01-ST17 through ES-SO01-ST19	Three storage tanks	
ES-SO-SC	ES-SO01-ST20 through ES-SO01-ST22	Three storage tanks	
ES-SO-D	ES-SO01-ST23 and ES-SO01-ST24	Two storage tanks	
ES-SO-BuLi	ES-SO01-ST25 through ES-SO01-ST30	Six storage tanks	
ES-SO-LUWA	ES-SO01-ST31 through ES-SO01-ST34	Four storage tanks	
ES-UV	ES-SO01-ST35 and ES-SO01-ST36	Two storage tanks	
ES-LHS02	ES-SO01-RCL01	One railcar loadout of LHS in tetrahydrofuran	
ES-SORM2a	ES-SO02-ST01	Two volatile organic compound storage tanks	Four storage tanks (Nos. ST01, ST02, ST04, and ST05)
ES-SORM2b	ES-SO02-ST02		
ES-SORM2c	ES-SO02-ST03	One hydrochloric acid tank	One hydrochloric acid tank (No. ST03)
ES-SO-LTB2	ES-SO02-ST04	One storage tank	
ES-SO-THF2	ES-SO02-ST05	One storage tank	One hot ethylene glycol storage tank (No. ST06)
ES-SO-GLY	ES-SO02-ST06	One hot ethylene glycol storage tank	
ES-LHS01	ES-SO03	One storage tank (30,500 gallon capacity for lithium hexamethyl disalazide (LHS) in tetrahydrofuran)	One storage tank (30,500 gallon capacity) [NSPS, Subpart Kb]

November 19, 2007 – DRAFT permit sent to Permittee, Regional Office, and Title V Coordinator for comment prior to public notice and EPA review.

February 8, 2008 – DRAFT permit sent to 30-day public notice and 45-day EPA review.

IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page(s)	Section	Description of Change(s)
Attachment	Insignificant activities	-updated equipment list -amended permit revision number
Cover	-	-amended permit revision number and all dates
TOC	-	-removed reference to Part II
All	Header	-amended permit revision number
3-6	Equipment table	-updated equipment list -removed equipment as requested by Permittee
7	2.1 A 2.1 A.1.a 2.1 A.1.b 2.1 A.1.c 2.1 A.2.a	-updated equipment description -added ID Nos. -updated shell language -added ID Nos. -added ID Nos.
8	2.1 A.2.b 2.1 A.2.d 2.1 A.2.e 2.1 A.3.a 2.1 A.3.b	-updated shell language -updated shell language and added ID Nos. -added MRR requirements for NG/propane/No. 2 fuel oil combustion -updated shell language -updated shell language
9	2.1 A.3.d 2.1 A.3.e 2.1 A.3.f 2.1 A.3.g	-updated shell language and added ID Nos. -added MRR requirements for NG/propane/No. 2 fuel oil combustion -added “No. 6 fuel oil” clarification -added “No. 6 fuel oil” clarification
10	2.1 B 2.1 B (table) 2.1 B.1.a 2.1 B.1.b 2.1 B.1.c	-updated equipment description -added CAM reference -added ID Nos. -updated shell language -added ID Nos.
11	2.1 B.1.d 2.1 B.1.e 2.1 B.2.a 2.1 B.2.c	-added ID Nos. -added ID Nos. -added ID Nos. -updated shell language
12	2.1 B.2.d 2.1 C 2.1 C (table)	-updated shell language -updated equipment description -added CAM reference
13	2.1 C.1.a 2.1 C.1.b 2.1 C.1.c 2.1 C.1.e	-added ID Nos. -updated shell language -added ID Nos. -added ID Nos.

Page(s)	Section	Description of Change(s)
14	2.1 C.2.a 2.1 C.2.c	-added ID Nos. -updated shell language
15	2.1 D	-updated equipment description
16	2.1 D.2.c	-updated shell language
17	2.1 E 2.1 E.1.a 2.1 E.1.b	-updated equipment description -added ID Nos. -updated shell language
18	2.1 E.1.c 2.1 E.1.d 2.1 E.1.e 2.1 E.2.a	-added ID Nos. -added ID Nos. -added ID Nos. -added ID Nos.
18-19	2.1 E.2.c	-updated shell language
19	2.1 F	-updated equipment description
20	2.1 F.1.a 2.1 F.1.b 2.1 F.1.c 2.1 F.1.d 2.1 F.1.e	-added ID Nos. -updated shell language -added ID Nos. -added ID Nos. -added ID Nos.
21	2.1 F.2.a 2.1 F.2.c	-added ID Nos. -updated shell language
22	2.1 G 2.1 G (table) 2.1 G.1.a 2.1 G.1.b	-updated equipment description -clarified visible emission limit -added ID Nos. -updated shell language
23	2.1 G.1.c 2.1 G.1.d 2.1 G.1.e 2.1 G.2.a 2.1 G.2.b	-updated shell language and added ID Nos. -added ID Nos. -added ID Nos. -added ID Nos. -updated shell language
24	2.1 G.2.c 2.1 G.3.a 2.1 G.3.b 2.1 G.3.c 2.1 G.3.d	-added ID Nos. -added ID Nos. -added ID Nos. -cross reference correction -updated shell language and added ID Nos.
25	2.1 H 2.1 H.1.a 2.1 H.1.b	-renumbered Section -added ID Nos. -updated shell language
25-26	2.1 H.1.c	-added ID Nos.
26	2.1 H.1.d 2.1 H.1.e 2.1 H.2.a 2.1 H.2.b 2.1 H.2.c	-added ID Nos. -added ID Nos. -added ID Nos. -cross reference correction -updated shell language and added ID Nos.
27	2.1 I 2.1 I.1.a	-renumbered Section and updated equipment description -added ID Nos.

Page(s)	Section	Description of Change(s)
28	2.1 I.1.b 2.1 I.1.c 2.1 I.1.d 2.1 I.1.e 2.1 I.2.a	-updated shell language -added ID Nos. -added ID Nos. -added ID Nos. -added ID Nos.
29	2.1 I.2.b 2.1 I.2.c 2.1 I.3.a 2.1 I.3.b 2.1 I.3.c	-updated shell language -added ID Nos. -added ID Nos. -cross reference correction -updated shell language and added ID Nos.
30	2.1 J 2.1 J.1.a 2.1 J.1.b 2.1 J.1.c 2.1 J.1.d	-renumbered Section and updated equipment description -added ID Nos. -updated shell language -updated shell language -added "No reporting" statement
31	2.1 J.2.a 2.1 J.2.b 2.1 J.2.c	-added ID Nos. -corrected cross reference -updated shell language and added ID Nos.
32	2.1 K 2.1 K (table) 2.1 K.1.a 2.1 K.1.b	-renumbered Section and updated equipment description -added CAM reference -added ID Nos. -updated shell language and cross reference correction
33	2.1 K.1.c 2.1 K.1.d 2.1 K.1.e 2.1 K.2.a 2.1 K.2.b	-added ID Nos. -added ID Nos. -added ID Nos. -added ID Nos. -updated shell language and cross reference correction
34	2.1 K.2.c 2.1 K.3.a 2.1 K.3.b 2.1 K.3.c	-added ID Nos. -added ID Nos. -cross reference correction -updated shell language and added ID Nos.
35	2.1 L 2.1 L.1.a 2.1 L.1.b 2.1 L.1.c	-renumbered Section and updated equipment description -added ID Nos. -updated shell language and cross reference correction -added ID Nos.
36	2.1 L.1.d 2.1 L.1.e 2.1 L.2.a 2.1 L.2.b 2.1 L.2.c	-added ID Nos. -added ID Nos. -added ID Nos. -cross reference correction -updated shell language and added ID Nos.
37	2.1 M 2.1 M.1.a	-renumbered Section and updated equipment description -added ID Nos.
38	2.1 M.1.b 2.1 M.1.c 2.1 M.1.d 2.1 M.1.e 2.1 M.2.a	-updated shell language and cross reference correction -added ID Nos. -added ID Nos. -added ID Nos. -added ID Nos.

Page(s)	Section	Description of Change(s)
39	2.1 M.2.b 2.1 M.1.c 2.1 N	-cross reference correction -updated shell language and added ID Nos. -renumbered Section and updated equipment description
40	2.1 N.1 2.1 N.1.b 2.1 N.1.c 2.1 O 2.1 P 2.1 P.1.a	-corrected rule citation -added ID Nos. -added ID Nos. -renumbered Section -renumbered Section and updated equipment description -added ID Nos.
41	2.1 P.1.b 2.1 P.1.c 2.1 P.1.d 2.1 P.1.e	-updated shell language and cross reference correction -added ID Nos. -added ID Nos. -added ID Nos.
42	2.1 P.2.a 2.1 P.2.b 2.1 P.2.c	-added ID Nos. -cross reference correction -updated shell language and added ID Nos.
43-45	2.2 A.1-3	-removed references to end-dated equipment -renumbered corresponding Sections
46-48	2.2 D	-added Section for CAM requirements
48-57	General Conditions	-updated shell language (v2.19)
-	Part II	-removed Part II

The following table indicates the modifications to ESM as a result of this permit renewal:

Current Description	Change resulting from permit renewal
Two lithium metal remelt pots (ID Nos. ES-LM04a and ES-LM04b)	End-dated per Permittee request
Seven amide reactors (ID Nos. ES-LHA02-1 through ES-LHA02-7)	End-dated per Permittee request
Seven process burner flares (ID Nos. CD-LHA02-1 through CD-LHA02-7)	End-dated per Permittee request
Various non-production research and development activities (ID No. ES-SIPP)	End-dated per Permittee request
One venturi scrubber (8 gallons per minute caustic or weak acid solution injection rate; ID No. CD-SIPP01-1a)	End-dated per Permittee request
One packed bed scrubber (2 gallons per minute caustic or weak acid solution injection rate; ID No. CD-SIPP01-1b)	End-dated per Permittee request
One natural gas-fired flare (3.5 million Btu per hour maximum heat input capacity; ID No. CD-SIPP01-2)	End-dated per Permittee request
One butyl lithium quench reactor with process condenser (ID No. ES-BLQ01)	End-dated per Permittee request
One spark ignition flare (ID No. CD-BLQ01)	End-dated per Permittee request
One natural gas-fired boiler (9.5 million Btu maximum heat input capacity in Synthesis Intermediate Pilot Plant; ID No. IES-SIPPboil)	End-dated per Permittee request

Current Description	Change resulting from permit renewal
NA	<i>Pilot Plant, kilo, research and development, analytical, and quality assurance laboratories (ID No. IES-LABS)</i>
NA	<i>Non-halogenated degreaser in maintenance (ID No. IES-DEGREASE)</i>
NA	<i>Cooling towers (ID No. IES-COOL)</i>
NA	<i>Maintenance activities (ID No. IES-MAINT)</i>
NA	<i>Oil smoke removal system located in the metal cells building (ID No. IES-OSRS)</i>
NA	<i>One wash tank in the Specialty Organic Production Line (ID No. IES-SO02-ST07)</i>

V. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 2D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
15A NCAC 2D .0515, Particulates from Miscellaneous Industrial Processes
15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 2D .0521, Control of Visible Emissions
15A NCAC 2D .0524, New Source Performance Standards
15A NCAC 2D .0958, Work Practices for Sources of Volatile Organic Compounds
15A NCAC 2D .1100, Control of Toxic Air Pollutants
15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 2Q .0711, Emission Rates Requiring a Permit

A regulatory review for these existing requirements will not be included in this document. As a result of this permit renewal, the following regulation has been added:

15A NCAC 2D .0614, Compliance Assurance Monitoring

VI. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The facility’s one 30,500 gallon storage tank (ID No. ES-LHS01) is subject to New Source Performance Standards, 40 CFR 60, Subpart Kb. To ensure compliance with this Subpart, the Permittee shall keep readily accessible records showing the dimensions and an analysis showing the capacity of the storage tank. This permit renewal does not affect this status or add any new requirements.

NESHAPS/MACT – The facility is not currently subject to any Maximum Achievable Control Technology Standards as potential emissions do not exceed the major source thresholds. This permit renewal does not affect this status or add any new requirements.

PSD – The facility is not currently subject to any prevention of significant deterioration requirements. This permit renewal does not affect this status or add any new requirements.

112(r) – The Permittee states that the facility is subject to 40 CFR Part 68 “Prevention of Accidental Releases” – Section 112(r) of the Federal Clean Air Act. On June 21, 2004, the Permittee submitted the required Risk Management Plan to EPA pursuant to 40 CFR 68.10. Continued compliance is expected.

CAM – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard. The following table shows the emission source/control device interactions.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-LCE02	One dust collection system for finished lithium carbonate packaging operations	CD-LCE02	One fabric filter (1,243 square feet of filter area)
ES-LCW02	One pneumatic transfer from super sacks to two storage tanks	CD-LCW02	One cartridge filter (904 square feet of filter area)
ES-LCE03	One pneumatic transfer from super sacks to three storage silos	CD-LCE03	One cartridge filter (904 square feet of filter area)
ES-PACK01	One dust collection system for repackaging operations including two feed bins, drumming, and bagging	CD-PACK01-2	One packed bed scrubber (10 gallons per minute water injection rate)
ES-LOH01	One steam heated rotary dryer	CD-LOH01-2	One impingement plate scrubber (5-15 gallons per minute water injection rate)
ES-LOH02	One dust collection system for finished lithium hydroxide packaging operations	CD-LOH02	One impingement plate scrubber (23 gallons per minute water injection rate)
ES-LCL01a ES-LCL01b	Two lithium chloride conversion reactors	CD-LCL01	One impingement plate scrubber (20 gallons per minute lithium hydroxide solution or water injection)
ES-LCL03	One “old” natural gas/propane-fired rotary dryer (1.0 million Btu per hour maximum heat input capacity)	CD-LCL03	One packed bed scrubber (10-32 gallons per minute water injection rate)
ES-LCL04	One “new” natural gas/propane-fired rotary dryer (0.4 million Btu per hour maximum heat input capacity)	CD-LCL04b	One venturi scrubber (25-43 gallons per minute water injection rate)
ES-LBLC01	One natural gas/propane-fired lithium bromide spray dryer (4.0 million Btu per hour maximum heat input capacity) and pneumatic transport system to drumming	CD-LBLC01-2	One impingement plate scrubber (20-30 gallons per minute water injection rate)

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-LBLC02	One lithium bromide conversion reactor	CD-LBLC02	One impingement plate scrubber (25 gallons per minute lithium hydroxide solution injection rate)
ES-LHC04	One natural gas/propane-fired lithium hypochlorite spray dryer (17 million Btu per hour maximum heat input capacity) and pneumatic transport to compaction and sizing	CD-LHC04-1b	One fabric filter (10,000 square feet of filter area)
ES-LHC05	Lithium hypochlorite compaction and sizing operation		
ES-LHA03	One lithium hydride crusher and grinder	CD-LHA03-02	One fabric filter (234 square feet of filter area)
ES-OSW	Various research and development and small scale production activities including one 150 gallon reactor and one batch still	CD-OSW03	One fabric filter (127 square feet of filter area)

The Permittee has estimated potential pre-controlled emissions as follows:

Control Device ID No	Potential Pre-controlled emissions (tons per year)	Potential Precontrolled PM₁₀ emissions (tons per year)	CAM Applicable?
CD-LCE02	118	59	No
CD-LCW02	1932	1932	Yes
CD-LCE03	1932	1932	Yes
CD-PACK01-2	460	230	Yes
CD-LOH01-2	151	92	No
CD-LOH02	15	-	No
CD-LCL01	11	-	No
CD-LCL03	86	-	No
CD-LCL04b	197	74	No
CD-LBLC01-2	10	-	No
CD-LBLC02	1	-	No
CD-LHC04-2	788	394	Yes
CD-LHA03-02	4	-	No
CD-OSW03	4	-	No

In each case, the control devices subject to CAM are subject because of potential pre-controlled emissions of PM₁₀. The Permittee is required to comply with 15A NCAC 2D .0515 and .0521. The following CAM plan has been included in the renewed permit as Section 2.2 D:

1. 15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING

a. Per 40 CFR 64 and 15A NCAC 2D .0614, the Permittee shall comply with the following.

b. Background.

i. Emission Unit(s).

A. Description.

1. One pneumatic transfer from super sacks to two storage tanks (ID No. ES-LCW02);
2. One pneumatic transfer from super sacks to three storage tanks (ID No. ES-LCE03);
3. One dust collection system for repackaging operations including two feed bins, drumming, and bagging (ID No. ES-PACK01);
4. One lithium hypochlorite spray dryer (ID No. ES-LHC04), compaction and sizing operation (ID No. ES-LHC05), and packaging operations (ID No. ES-LHC07).

ii. Applicable Regulation(s), Emission Limit(s), and Monitoring Requirements.

A. Regulation(s):

1. 15A NCAC 2D .0515, Particulates from Miscellaneous Industrial Processes
2. 15A NCAC 2D .0521, Control of Visible Emissions

B. Control Technology.

1. Cartridge filter (ID No. CD-LCW02);
2. Cartridge filter (ID No. CD-LCE03);
3. Packed bed scrubber (ID No. CD-PACK01-2); and
4. Fabric filter (ID No. CD-LHC04-1b).

c. **Monitoring Approach.** The key elements of the monitoring approach for particulate matter, including parameters to be monitored, parameter ranges, and performance criteria are presented in the following table. The selected performance indicators are visible emissions and the pressure drop across the bagfilters and wet scrubber and visible emissions.

	Indicator 1	Indicator 2	Indicator 3
I. Indicator	Visible emissions (CD-LCW02, CD-LCE03, CD-PACK01-2, and CD-LHC04-1b)	Pressure drop (CD-LCW02, CD-LCE03, and CD-LHC04-1b)	Scrubber liquid supply pressure (CD-PACK01-2)
Measurement Approach	Visible emissions from the control equipment will be monitored daily using EPA Reference Method 22-like procedures	Pressure drop across the cartridge and fabric filters is continuously measured with differential pressure gauges	Supply pressure is continuously measured with a pressure gauge
II. Indicator Range	An excursion is defined as the presence of visible emissions. Excursions trigger an inspection and corrective action.	An excursion is defined as a pressure drop outside the normal operating range of less than 5 inches of water for the cartridge filters and 2 to 3 inches of water for the fabric filter. Excursions trigger an inspection and corrective action.	An excursion is defined as a supply pressure outside the normal operating range of 8 to 12 pounds per square inch. Excursions trigger an inspection and corrective action.
QIP Threshold	The QIP threshold is six excursions in a 6-month period.	None selected.	None selected.

	<i>Indicator 1</i>	<i>Indicator 2</i>	<i>Indicator 3</i>
<i>III. Performance Criteria</i>			
<i>A. Data Representativeness</i>	<i>Measurements are being made at the emission points of the control devices.</i>	<i>Pressure taps are located at the control device inlet and outlet. The gauges have a minimum accuracy of 0.5 inches of water.</i>	<i>Supply pressure is measured at pump discharge.</i>
<i>B. Verification of Operational Status</i>	NA	NA	NA
<i>C. QA/QC Practices</i>	<i>The observer will be familiar with Reference Method 22 and follow Method 22-like procedures.</i>	<i>The pressure gauges are checked daily for operation according to manufacturer's criteria for operation and maintenance.</i>	<i>Supply pressure gauge is checked daily for operation according to manufacturer's criteria for operation and maintenance.</i>
<i>D. Monitoring Frequency</i>	<i>Observations are done daily.</i>	<i>Pressure drop is monitored daily.</i>	<i>Supply pressure is monitored daily.</i>
<i>Data Collection Procedures</i>	<i>VE observations are documented by the observer.</i>	<i>Pressure gauge readings are manually recorded daily.</i>	<i>Pressure gauge readings are manually recorded daily.</i>
<i>Averaging Periods</i>	NA	NA	NA

Reporting [15A NCAC 2Q .0508(f)]

- d. *The Permittee shall submit a summary report of all monitoring activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.*

VII. Facility Wide Air Toxics

The following excerpt is from Joe Foutz' September 4, 2007 inspection report. The changes in each Paragraph/requirement as a result of the renewal of this permit are shown in italics.

A. Condition 2.2 - A. - The facility is subject to the toxics pollutant emission limits set by 2Q .0711. The facility took limits to avoid applicability of 2D .1100. The toxic pollutants include acetic acid, benzene, benzyl chloride, 1,3 butadiene, carbon disulfide, dimethyl sulfate, 1,4 dioxane, ethylene dibromide, ethylene oxide, maleic anhydride, methylene chloride, and vinyl chloride. The sources include two lithium salts reactors (**ID Nos. ES-SIPC01 and ES-SICP01**) associated with the Specialty Inorganic (SI) - Pharmaceutical Carbonate (PC) / Catalytic Phosphate (CP) production circuit; a reactor and process condenser, two product filters, and seven process tanks (**ID No. ES-SO-R1**), a reactor and process condenser, four product filters, and eleven process tanks (**ID No. ES-SO-R2**), a reactor and process condenser and three process tanks (**ID No. ES-QRT**), four storage tanks (**ID No. ES-SO-LUWA**), and six storage tanks (**ID No. ES-SO-BuLi**) associated with the Specialty Organics circuit; the Organometallics Semiworks operations (**ID No. ES-OSW**); and the Synthesis Intermediate Pilot Plant (**ID No. ES-SIPP**). The Permittee has requested that the Synthesis Intermediate Pilot Plant (**ID No. ES-SIPP**) be removed from the permit and all corresponding toxics requirements be removed. *The renewed permit has been modified accordingly.*

The following restrictions were contained in the prior permit to avoid 2D .1100:

- i. Nitric acid shall not be used in the OSW/SIPP concurrent with the filling of the SI/CP nitric acid storage tank. The equipment associated with the SIPP has not been installed. Also, the facility has not used any and will not use any nitric acid in the OSW operations. The facility has requested in the permit renewal application to remove this condition from the permit. *The original Section 2.2 A.2.a with this requirement has been removed from the permit and subsequent paragraphs have been renumbered.*
- ii. The lithium chloride conversion reactor shall receive hydrochloric acid through a submerged fill line. The hydrochloric acid is fed to the reactor through a submerged pipe. *No change as a part of this renewal.*
- iii. VOC emissions from the butyl lithium quench reactor (**ID No. ES-BLQ01**) shall be controlled by the spark ignition flare (**ID No. CD-BLQ01**). The facility is required to maintain an operation logbook noting the time and duration of VOC emissions from the reactor and the time of activation and deactivation of the flare. The facility is required to perform inspection and maintenance on the flare according to manufacturers' recommendations. The facility is required to perform monthly inspections of the ductwork and flare system for structural integrity. The facility is required to record the observations in a logbook. *The logbook contained a sheet noting the reactor and flare have not been in operation in over four years. The inspections have not been performed because the equipment has not been operational. The facility has also requested in the permit renewal application that this condition be removed from the permit. The facility does not use the equipment. The original Section 2.2 A.2.c with this requirement has been removed from the permit and subsequent paragraphs have been renumbered.*
- iv. VOC emissions from the Specialty Organics Processes consisting of various reactors, process tanks, and storage tanks (**ID Nos. ES-SO-R1, ES-SO-R2, ES-QRT, ES-SO-LBT1, ES-SO-THF1, ES-SO-M, ES-SORM1, ES-SO-LDA, ES-SO-SC, ES-SO-D, ES-SO-BuLi, ES-SO-LUWA, ES-UV, and ES-LHS01**) and the rail car load-out of LHS in THF (**ID No. ES-LHS02**) shall be controlled by the natural gas-fired flare (**ID No. CD-SO01-3**). The facility is required to maintain an operation logbook. The facility is required to perform inspection and maintenance on the flare according to manufacturers' recommendations. The facility is required to perform daily checks of the flare for proper function while operating and perform monthly inspections of the ductwork and flare system for structural integrity. The facility is required to record the observations in a logbook. The records were observed and appeared to be complete. *No change as a part of this renewal.*
- v. VOC emissions from the OSW and SIPP shall be controlled with flares (**ID Nos. CD-OSW02 and CD-SIPP01-2, respectively**). The sources associated with the OSW were observed in operation being controlled with the flare. The SIPP equipment has not been installed. The facility is required to maintain an operation logbook. The facility is required to perform inspection and maintenance on the flares according to manufacturers' recommendations. The facility is required to perform daily checks of the flares for proper function while operating and perform monthly inspections of the ductwork and flare systems for structural integrity. The facility is required to record the observations in a logbook. The records were observed and appeared to be complete for the OSW flare. The SIPP flare has not been installed. The logbook contained a sheet noting the flare and SIPP system is not operational until further notice. *This paragraph has been modified to remove all references to ES-SIPP and associated control device CD-SIPP-2.*

- vi. Ammonia emissions from each of the lithium amide reactors (**ID No. ES-LHA02**) shall be controlled with a process burner flare (**ID Nos. CD-LHA02-1 through CD-LHA02-7**). All seven reactors were observed not in operation. Each reactor was controlled with its own flare. The facility is required to maintain an operation logbook. The facility is required to perform inspection and maintenance on the flares according to manufacturers' recommendations. The facility is required to perform daily checks of the flares for proper function while operating and perform monthly inspections of the duct work and flare systems for structural integrity. The facility is required to record the observations in a logbook. The records were observed and appeared to be complete. *The Permittee has requested that the equipment be removed from the permit. Therefore, the original Section 2.2 A.2.f has been removed from the renewed permit and subsequent paragraphs have been renumbered.*
- vii. Hydrogen chloride emissions from the storage tanks (**ID No. EX-LCL02**) shall be controlled by the packed bed scrubber (**ID No. CD-LCL02**). The facility is required to maintain an operation logbook. The facility is required to perform inspection and maintenance on the packed bed scrubber according to manufacturers' recommendations. The facility is required to perform annual internal inspections of the packed bed scrubber for structural integrity, including the packing material and spray nozzles. The facility is also required to perform checks of proper function while loading. The facility is required to record the observations in a logbook. These records were observed and appeared to be complete. The last annual inspection was performed March 15, 2007. *No change as a result of this renewal.*
- viii. Hydrofluoric, hydrochloric, and nitric acid emissions from the Organometallic Semiworks operation (**ID No. ES-OSW**) shall be controlled by a packed bed scrubber (**ID No. CD-OSW01**). The sources associated with the OSW were in operation. There were no acids being processed at the time of the inspection. Therefore, only the flare was controlling emissions. The scrubber is only operated when acids are being processed in the OSW sources. The facility is required to maintain an operation logbook. The facility is required to perform inspection and maintenance on the scrubber according to manufacturers' recommendations. The facility is required to perform annual inspections of the scrubber for structural integrity, including the packing material and spray nozzles. The facility is also required to perform checks of proper function during plant operations generating acid gas emissions. The facility is required to record the observations in a logbook. These records were observed and appeared to be complete. The last annual inspection was performed December 15, 2006. *No change as a result of this renewal.*
- ix. Hydrogen chloride, hydrogen fluoride, ammonia, hydrogen sulfide, and nitric acid emissions from the ES-SIPP shall be controlled by a packed bed scrubber (**ID No. CD-SIPP01-1**). This equipment has not been installed. *This paragraph has been removed to remove all references to ES-SIPP and associated control device CD-SIPP-2.*
- x. The facility is required to submit a summary report of the observations. The report was received on July 27, 2007 and appeared to show compliance for these sources. The facility appeared to be in compliance with this regulation at the time of this inspection.

VIII. Facility Emissions Review

There is no change in emissions for this renewal.

The following table represents the latest years emission inventory from the facility:

Pollutant(s)	2006 Actual Emissions (tpy)
CO	18.43
NO _x	22.10
PM ₁₀	11.71
SO ₂	0.12
VOC	13.49
Total HAP/TAP	11.87

IX. Stipulation Review

The MRO had the following comments in their review of the renewal application:

1. change the due date for the ACC in General Condition P to **March 1**. *It should be noted that this was completed as part of the recent modification 03560T42.*
2. remove the butyl lithium quench reactor **ES-BLQ01** from the equipment table. The facility also requests to remove the lithium chromate reactor **ES-LBLC04**. I could not find this source listed in the permit. *Agree, sources end-dated.*
3. remove condition 2.2 A.2.c. *Agree, paragraph removed.*
4. the facility has submitted the required E5 form for the operation of the semi-works plant **ES-OSW**. Remove Part II of the permit. *Agree, Part II has been removed.*
5. the **ES-OSW** does not and will not use nitric acid. Remove condition 2.2 A.2.a and remove the “nitric acid” emissions part of condition 2.2 A.2.h. *Agree, language has been removed.*
6. per a determination dated **September 16, 2003**, add the oil smoke removal system installed on the metal cell building to the list of insignificant activities under 2Q .0503(8). *Agree; source has been added.*
7. the facility has submitted the required CAM plan. Add this language to the permit. *Agree, CAM has been added.*
8. there is a note that the multicyclone/fabric filter/scrubber system installed on the LiOCL packaging operation **ES-LHCO7** is actually installed on the LiOCL compaction and sizing **ES-LHC05**. Check with the facility on this item to make sure the equipment is correctly listed in the permit. *Equipment has been modified to reflect current source/control device orientation.*

The facility was recently issued a NOV for late reporting of the ACC and semi-annual summary reports that were due on **January 30, 2006**. The facility appears to be in compliance with all other applicable air quality regulations.

X. Public Notice/EPA and Affected State(s) Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. South Carolina is an affected State and Mecklenburg County is an affected Local Program within 50 miles of this facility.

XI. Conclusions, Comments, and Recommendations

A professional engineer's seal was not required for this renewal.

A consistency determination was not required for this renewal.

MRO recommends issuance of the permit and was presented with a DRAFT permit prior to notice and issuance.

RCO concurs with MRO's recommendation to issue the renewed air permit.