STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

James E. Risch, Governor
Toni Hardesty, Director

July 24, 2006

Certified Mail No. 7005 1160 0000 1550 6247

Robert L. Peterson, P.E.
Staff Process Engineer
Tronox, LLC
P. O. Box 478
Soda Springs, ID 83276

RE: Facility ID No. 029-00002, Tronox LLC (formerly Kerr-McGee Stored Power), Soda Springs
Final Permit to Construct No. P-050311

Dear Mr. Peterson:

The Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) No. P-050311 to Tronox, LLC for the Lithium Vanadium Oxide (LVO) production process in accordance with IDAPA 58.01.01.200 through 228 (Rules for the Control of Air Pollution in Idaho).

This permit is based on your permit application received April 25, 2005, and additional information received on April 26, July 20, and August 9, 2005, and February 28 and April 19, 2006. This permit is effective immediately and replaces existing LVO PTC Nos. 029-00002, issued June 29, 2000; July 27, 2001; May 17, 2002; and October 7, 2002, the terms and conditions of which no longer apply. This permit does not release Tronox, LLC from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

A representative of the Pocatello Regional Office will contact you regarding a meeting with DEQ to discuss the permit terms and requirements. DEQ recommends the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any operations staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to contact Dan Pitman at (208) 373-0502 or daniel.pitman@deq.idaho.gov to address any questions or concerns you may have with the enclosed permit.

Sincerely,

Bill Rogers for

Martin Bauer, Administrator
Air Quality Division

MB/CR/bf Permit No. P-050311

Enclosures

c: Pete Wagner, Pocatello Regional Office
Dan Pitman, AQ Division/Permit Coordinator
Cheryl Robinson, AQ Division/Permit Writer
Marilyn Seymore/Pat Rayne, AQ Division
Laurie Kral, US EPA Region 10
Permit Binder
Source File
Phyllis Heitman (Ltr Only)
Reading File (Ltr Only)

Air Quality
PERMIT TO CONSTRUCT
State of Idaho
Department of Environmental Quality

PERMIT No.: P-050311
FACILITY ID No.: 029-00002
AQCR: 61 **CLASS:** B
SIC: 2899 **ZONE:** 12
UTM COORDINATE (km): 452.3, 4725.4

1. **PERMITTEE**
Tronox, LLC

2. **PROJECT**
Alternative Pre-Mix Process, Reactor Operations Fugitive Dust Control, and Name Change for LVO Production

3. MAILING ADDRESS	CITY	STATE	ZIP
1864 N. Highway 34	Soda Springs	ID	83276
4. FACILITY CONTACT	**TITLE**	**TELEPHONE**	
Robert L. Peterson, P.E.	Staff Process Engineer	(208) 547-3331	
5. RESPONSIBLE OFFICIAL	**TITLE**	**TELEPHONE**	
Boyd Schvaneveldt	Site Manager	(208) 547-3331	
6. EXACT PLANT LOCATION		**COUNTY**	
1864 North Highway 34 (1.5 miles north of Soda Springs)		Caribou	

7. **GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS**
Manufacture cathode materials for rechargeable batteries

8. **GENERAL CONDITIONS**

This permit is issued according to IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, and pertains only to emissions of air contaminants regulated by the state of Idaho and to the sources specifically allowed to be constructed or modified by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (c) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; (d) in no manner implies or suggests that the Department of Environmental Quality (DEQ) or its officers, agents, or employees, assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.

This permit has been granted on the basis of design information presented with its application. Changes of design or equipment may require DEQ approval pursuant to the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01.200, et seq.

Toni

TONI HARDESTY, DIRECTOR
DEPARTMENT OF ENVIRONMENTAL QUALITY

DATE ISSUED: July 24, 2006

Table of Contents

Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
Btu	British thermal unit
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAPs	hazardous air pollutants
HEPA filter	high efficiency particulate air filter
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
LVO	lithium vanadium oxide
m	meter(s)
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTC	permit to construct
PTE	potential to emit
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAP	toxic air pollutant
T/yr	tons per year
UTM	Universal Transverse Mercator
V_2O_5	vanadium pentoxide

1. PERMIT TO CONSTRUCT SCOPE

Purpose

1.1 The purpose of this permit is to authorize the construction of an alternative spray dryer pre-mixing process and a reactor operations area nuisance dust collection system (Baghouse #4) for the lithium vanadium oxide (LVO) production process. The new and the existing pre-mix processes will not operate concurrently, and the rest of the process is unaffected by the addition of the alternative mix process. At the facility's request, an enforceable limit on carbon black emissions (CAS No. 1333-86-4) has been included in this PTC modification. This PTC also reflects the change in facility owner name from Kerr-McGee Stored Power Corp. to Tronox, LLC.

1.2 This PTC replaces the following permits for the LVO production process, the terms and conditions of which no longer apply:

- PTC No. 029-00002, issued October 7, 2002;
- PTC No. 029-00002, issued May 17, 2002;
- PTC No. 029-00002, issued July 27, 2001; and
- PTC No. 029-00002, issued June 29, 2000.

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-050311				
Permittee:	Tronox, LLC	**Facility ID No.** 029-00002	**Date Issued:**	July 24, 2006
Location:	Soda Springs, Idaho			

Regulated Sources

1.3 Table 1.1 lists all sources of regulated emissions in this PTC.

Table 1.1 SUMMARY OF REGULATED SOURCES FOR THE LVO PRODUCTION PROCESS

Permit Section	Source Description	Process Equipment/Emissions Control(s)	
		Primary Control	Secondary Control/ Emissions Point
2	Alternate Pre-Mix Process		
2	**Spray Dryer #1 (new)** Mfr:/Model: Maxon Burner, APV Type 3 Series 2 Model 2 Fuel: Natural Gas Heat Input Capacity: 0.75 MMBtu/hr Nominal Product Throughput: 106 lb/hr	**Baghouse (new)** Manufacturer: Micropul Model No. 25S-8-30 with 16 oz. Aramid Fabric Control Efficiency: 99.985%	**HEPA Filter / Vent (new)** Manufacturer: Airguard Model: MC2000 Control Efficiency: 99.97
2	**Spray Dryer #2 (new)** Manufacturer/Model No.: SDS Dryer Fuel: Natural Gas Heat Input Capacity: 0.965 MMBtu/hr Nominal Product Throughput: 177 lb/hr	**Baghouse (new)** Manufacturer: Micropul Model No. 64S-10-20 TRH with 16 oz. Aramid Fabric Control Efficiency: 99.985%	**HEPA Filter / Vent (new)** Manufacturer: Airguard Model: MC2000 Control Efficiency: 99.97%
2	**Spray Dryer #3 (new)** Manufacturer/Model No.: SDS Dryer Fuel: Natural Gas Heat Input Capacity: 0.965 MMBtu/hr Nominal Product Throughput: 177 lb/hr	**Baghouse (new)** Manufacturer: Micropul Model No. 64S-10-20 TRH with 16 oz. Aramid Fabric Control Efficiency: 99.985%	**HEPA Filter / Vent (new)** Manufacturer: Airguard Model: MC2000 Control Efficiency: 99.97%
2	**#2 Milling (new)** Manufacturer/Model: CCE Technologies, Model DPM II Feed Material: SD LVO Pre-Mix Maximum Throughput Rate: 460 lb/hr and 2014.8 T/yr	**Cartridge Collector (new)** Manufacturer: Torit Model No.: TD573 Control Efficiency: 99.999%	**Safety Filter / Vent (new)** Manufacturer: Donaldson Model: P129472 Control Efficiency: 99.9%
2	**#3 Milling (new)** Manufacturer/Model: CCE Technologies, Model DPM 4 Feed Material: SD LVO Pre-Mix Maximum Throughput Rate: 460 lb/hr and 2014.8 T/yr	**Cartridge Collector (new)** Manufacturer: Torit Model No.: DFT 2-12 Control Efficiency: 99.999%	**Safety Filter / Vent (new)** Manufacturer: Donaldson Model: P129472 Control Efficiency: 99.97%
2	**#4 Milling (new)** Manufacturer/Model: CCE Technologies, Model DPM 4 Feed Material: SD LVO Pre-Mix Maximum Throughput Rate: 460 lb/hr and 2014.8 T/yr	**Cartridge Collector (new)** Manufacturer: Torit Model No.: DFT 2-12 Control Efficiency: 99.999%	**Safety Filter / Vent (new)** Manufacturer: Donaldson Model: P129472 Control Efficiency: 99.97%
2	**Dryer Pre-Mix Nuisance Dust Control—Baghouse #3 (new)**	**Baghouse #3 (new)** Mfr/Model: Micropul 49S-10-20 Mfr Guarantee: 0.02 gr/dscf	**HEPA Filter / Vent (new)** Mfr: Airguard, MC2000 Control Efficiency: 99.97%
2	Reactor operations (kiln/calciner operations, existing)	Kiln/Calciner Baghouse Mfr: Mikro-Pulsaire 12-8-220 Air to Cloth Ratio: 6:1	HEPA Filter/HEPA Filter Vent Manufacturer: Solberg, HE30 Control Efficiency: 99.97%
2	#1 Milling system (existing)	Cartridge Collector Mfr/Model: Torit TD 573 Cartridges: Torit Ultraweb II Control Efficiency: 99.999%	Safety Filter/Safety Filter Vent Manufacturer: Donaldson Model: PN P129472 Control Efficiency: 99.9%
2	Classification system (existing)	Cartridge Collector Mfr/Model: Torit TD 573 Cartridges: Torit Ultraweb II Control Efficiency: 99.999%	Safety Filter/Safety Filter Vent Manufacturer: Donaldson Model: PN P129472 Control Efficiency: 99.9%
2	Final operations (blending and packaging, existing)	Packaging Baghouse Mfr: Mikro-Pulsaire Model: 31-8-85	HEPA Filter/HEPA Filter Vent Mfr/Model: Solberg, HE30 Control Efficiency: 99.97%
2	**LVO Reactor Operations Nuisance Dust Control—Baghouse #4 (new)**	**Baghouse #4 (new)** Mfr: Micro Pul 289S-0-2-TRH Mfr Guarantee: 0.001 gr/dscf	**HEPA Filter / Vent (new)** Mfr: Universal, FASH-30-16 Control Efficiency: 99.97%

2. LITHIUM VANADIUM OXIDE PRODUCTION

Emissions Limits

2.1 Emission Limits

The carbon black emissions from the #1 Milling, Classification System, Final Operations process stacks, and the Baghouse #4 stack, in any combination, shall not exceed 3.58E-04 pounds per day.

2.2 Opacity Limit

Emissions from the filter/collector vents, or any other stack, vent, or functionally equivalent opening associated with the LVO production process, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

Operating Requirements

2.3 Reasonable Control of Fugitive Emissions

All reasonable precautions shall be taken as required in IDAPA 58.01.01.650-651 to prevent particulate matter (PM) from becoming airborne. In determining what is reasonable, consideration will be given to factors such as the proximity of dust-emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of PM. Some of the reasonable precautions include, but are not limited to, the following:

- Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands.
- Application, where practical, of asphalt, oil, water or suitable chemicals to, or covering of, dirt roads, material stockpiles, and other surfaces which can create dust.
- Installation and use, where practical, of hoods, fans, and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.
- Covering, where practical, of open-bodied trucks transporting materials likely to give rise to airborne dusts.
- Paving of roadways and their maintenance in a clean condition, where practical.
- Prompt removal of earth or other stored material from streets, where practical.

2.4 Permitted Fuels/Energy Sources

- The spray dryers shall be heated using natural gas or shall be electrically heated.
- The kiln(s) and calciner(s) shall be electrically heated.

2.5 Permitted Feedstocks

- Lithium-bearing material feedstock shall be lithium carbonate or lithium hydroxide.

- Vanadium-bearing material feedstock shall be an oxide of vanadium.
- Carbon black.

2.6 Alternate Pre-Mix Process Operations

The first step of the alternate pre-mix process shall include reacting the oxide of vanadium with water to convert any vanadium pentoxide (V_2O_5) present in the feedstock to a non-regulated vanadium compound.

2.7 Production and Throughput Limits

- The production of LVO shall not exceed 11,040 pounds per day and 2,014 tons per any consecutive 12-month period.
- The total amount of carbon black added to the LVO production batch processes, in any combination, shall not exceed 1,224 pounds per day.

2.8 Baghouse/Collector and Filter Monitoring Equipment

The permittee shall, in accordance with manufacturer specifications, install, calibrate, maintain, and operate equipment to continuously measure the pressure differential across each baghouse/collector and filter.

2.9 Operations and Maintenance Manual Requirements

Within 60 days of permit issuance, the permittee shall have developed an O&M manual for the baghouses/collectors and filters that collect product and control emissions from each batch processing unit and that collect and control fugitive emissions from the LVO processing area. The O&M manual shall describe the procedures that will be followed to comply with General Provision 2 and the manufacturer specifications for the baghouses/collectors and filters. The manual shall contain, at a minimum, the pressure drop range for each baghouse and filter/collector, methods used to measure pressure drop across the baghouses/collectors and filters, and a maintenance schedule that includes baghouse/collector and filter inspections at least monthly during facility operations, and includes minimum cleaning and replacement periods. The inspections shall include but not be limited to checking the bags and filter cartridges for structural integrity and that they are appropriately secured in place. The manual shall remain on site at all times and shall be made available to DEQ representatives upon request.

2.10 Baghouse/Collector and Filter Operation

- The permittee shall operate the primary and secondary emissions control equipment described in Table 1.1 for each process during operation of that batch process.
- The permittee shall operate the secondary HEPA filters described in Table 1.1 for Baghouse #3 and Baghouse #4 whenever those baghouses are operated.

Monitoring and Recordkeeping Requirements

2.11 Operating Parameters

The following parameters shall be monitored and recorded. Records of this information shall remain on site for the most recent two-year period and shall be made available to DEQ representatives upon request.

- Pressure drop across the baghouses/collectors and filters once weekly when the facility is operating;
- Date and results of baghouse/collector and filter inspections.
- LVO production in pounds per day, tons per month, and tons per any consecutive 12-month period (tons per year).
- The total amount of carbon black added to the LVO production process, in pounds per day.

Reporting Requirements

2.12 Exceedance Reports

The permittee shall submit a written report to DEQ of all exceedances of any emission limit or operational requirement specified in Sections 1 and/or 2 of this permit within a reasonable time of the exceedance. The report shall contain the date, time, and duration of the exceedance, if applicable, as well as any corrective action taken to remedy the cause of the exceedance.

3. PERMIT TO CONSTRUCT GENERAL PROVISIONS

1. The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the Rules for the Control of Air Pollution in Idaho. The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the Rules for the Control of Air Pollution in Idaho, and the Environmental Protection and Health Act, Idaho Code §39-101, et seq.

2. The permittee shall at all times (except as provided in the Rules for the Control of Air Pollution in Idaho) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

3. The permittee shall allow the Director, and/or the authorized representative(s), upon the presentation of credentials:

   - To enter, at reasonable times, upon the premises where an emissions source is located, or in which any records are required to be kept under the terms and conditions of this permit.
   - At reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and require stack compliance testing in conformance with IDAPA 58.01.01.157 when deemed appropriate by the Director.

4. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.

5. The permittee shall furnish DEQ written notifications as follows in accordance with IDAPA 58.01.01.211.01 and 211.03:

   - A notification of the date of initiation of construction, within five working days after occurrence;
   - A notification of the date of completion/cessation of construction, within five working days after occurrence;
   - A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date;
   - A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date; and
   - A notification of the initial date of achieving the maximum production rate, within five working days after occurrence - production rate and date.

6. If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.

All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.

Within 30 days following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The written report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

7. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

8. In accordance with IDAPA 58.01.01.123, all documents submitted to DEQ, including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.