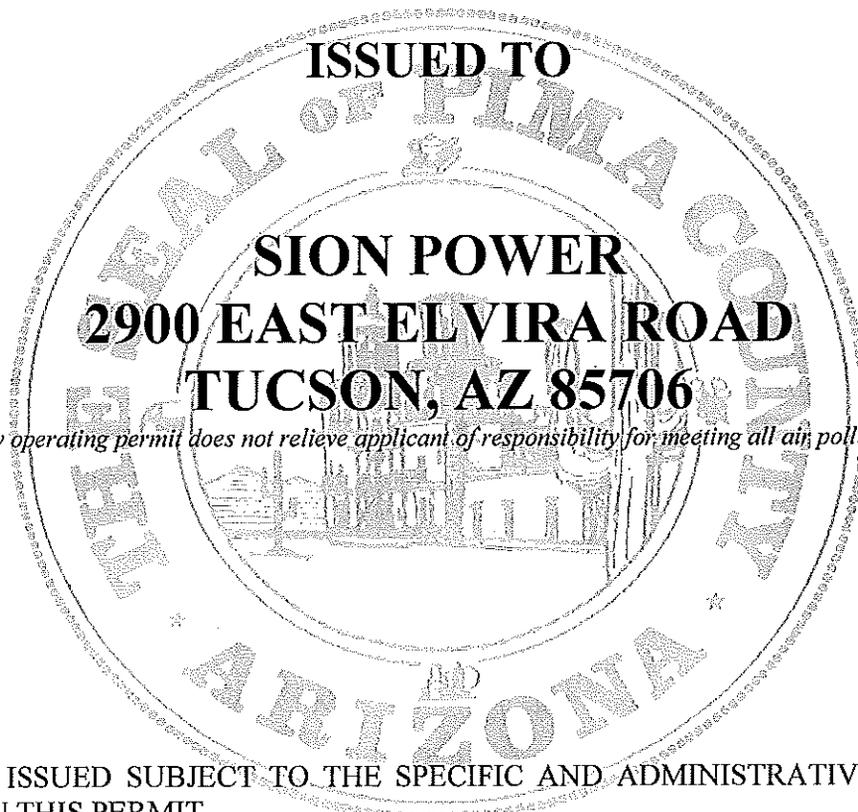


**PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Program**

33 North Stone Avenue, Suite 730 • Tucson, AZ 85701 • Phone: (520) 740-3340

AIR QUALITY OPERATING PERMIT

(As required by Title 17.12, Article II, Pima County Code)



This air quality operating permit does not relieve applicant of responsibility for meeting all air pollution regulations

THIS PERMIT ISSUED SUBJECT TO THE SPECIFIC AND ADMINISTRATIVE CONDITIONS IDENTIFIED IN THIS PERMIT.

PDEQ PERMIT NUMBER **5001**

PERMIT CLASS **III**

ISSUED: **APRIL 18, 2008**

REVISED: **NOVEMBER 12, 2008**

EXPIRES: **APRIL 17, 2013**

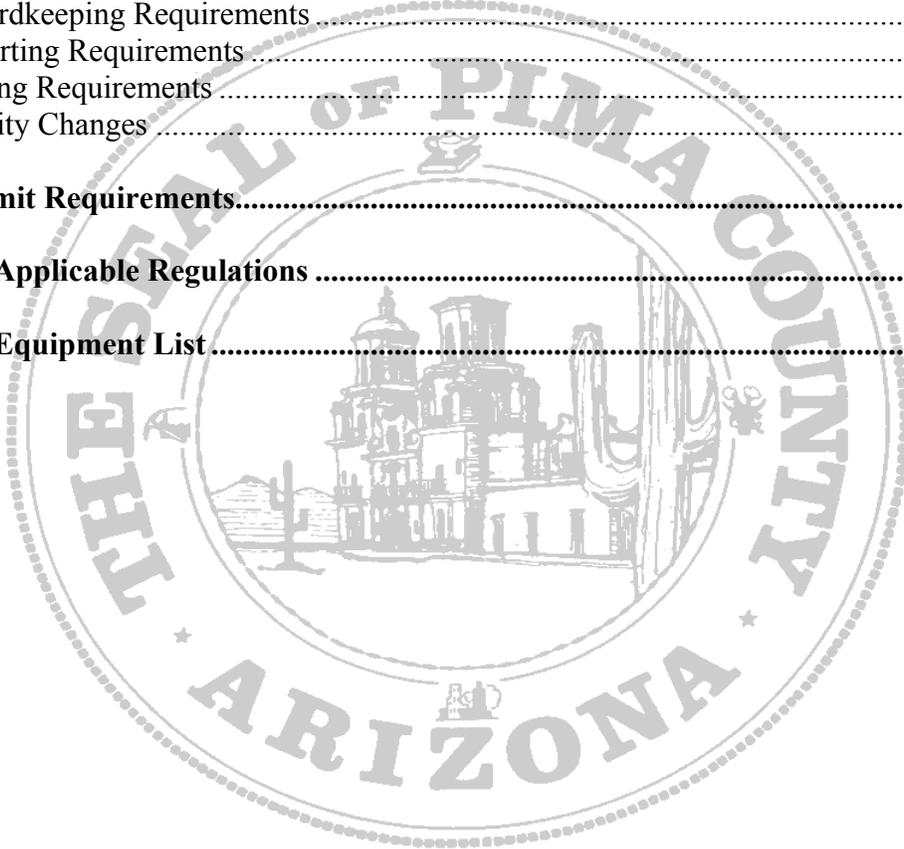

SIGNATURE

Teresa Sobolewski, Air Program Manager, PDEQ
TITLE

**Sion Power
Air Quality Permit # 5001**

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**Sion Power
Air Quality Permit # 5001**

SUMMARY

This operating permit is the first air quality permit issued to Sion Power, the Permittee. This facility is a new synthetic minor source of VOCs and HAPs and a true minor source of all other pollutants.

The facility is a stationary source as defined by Title 17 of the Pima County Code, 49-401 of the Arizona Revised Statutes, and the Clean Air Act. The source operates a lithium battery manufacturing plant. The batteries are fabricated using cathodes, anodes and electrolytes.

The following emission rates are for reference purposes only and are not intended to be enforced by direct measurement unless otherwise noted in the Specific Conditions. These figures are as a result of information contained in the permit application received September 07, 2007.

Pollutant	Tons per Year
Nitrogen Oxides (NOx)	70.00 ¹
Carbon Monoxide (CO)	6.76
Volatile Organic Compounds (VOC)	80.00*
Particulate Matter (as PM ₁₀)	0.35
Sulfur Oxides (SOx)	0.01
Ammonia ²	23.14
Hazardous Air Pollutants (Single HAPs)	8.50*
Hazardous Air Pollutants (Combined HAPs)	22.00*

¹ Based on voluntarily accepted limitations in Sion's August 2007 application

² Ammonia is not a regulated pollutant. Information listed here is for informational purposes only.

Sion Power
Air Quality Permit # 5001

SPECIFIC CONDITIONS

[References are to Title 17 of the Pima County Code unless otherwise noted]

I. APPLICABILITY

The facility covered by this permit constitutes a synthetic minor source of NO_x, VOCs and HAPs and a true minor source of all other criteria pollutants based on 8760 hours of operation per year and considering emissions from all emission sources of the same SIC Code at the facility. Equipment and operations specifically addressed by the permit are listed in Attachment 2 of the permit and fall under the following category:

Lithium Battery Manufacturing.

Affected Emission Source Classification: **Class III; Synthetic Minor Stationary Source of NO_x, VOCs & HAPs.**

II. EMISSION LIMITS AND STANDARDS

[PCC 17.12.185.A.2]

A. Volatile Organic Compounds (VOCs) Limitation

The Permittee shall not cause, allow or permit the emissions of VOCs from all point sources at the facility to exceed 80 tons per year (tpy). [PCC 17.12.190.B]

[**Federally Enforceable & Material Permit Condition**]

B. Hazardous Air Pollutants (HAPs) Limitation

[**Federally Enforceable & Material Permit Conditions**]

1. The Permittee shall not cause, allow or permit the emissions of a single HAP from all point sources at the facility to exceed 8.5 tpy. [PCC 17.12.190.B]

2. The Permittee shall not cause, allow or permit the emissions of any combination of HAPs from all point sources at the facility to exceed 22 tpy. [PCC 17.12.190.B]

C. Fuel & Sulfur Content Limitation

The Permittee shall only burn pipeline quality natural gas in the Regenerative Thermal Oxidizer (RTO). [PCC 17.12.190.B]

[**Federally Enforceable & Material Permit Condition**]

D. Opacity Standard

[PCC 17.16.040]

The Permittee shall not cause or permit the effluent from a single emission point, multiple emission point, or fugitive emissions source to have an average optical density equal to or greater than 20%.

III. OPERATIONAL LIMITATIONS

[PCC 17.12.185.A.2]

- A. Prior to initial startup of the New Era coating and drying machine, the Permittee shall install and operate an RTO that includes a temperature monitoring device, to control emissions from the coating process. [PCC 17.12.190.B] **[Material Permit Condition]**
- B. The Permittee shall install, operate, calibrate and maintain a measuring device to record the solvent usage rate in the New Era Coating and drying machine. **[Material Permit Condition]**
- C. The Permittee shall direct all New Era coating and drying emissions to the RTO unit at all times that the solvent usage rate on the coater exceeds 15 pounds per hour, as measured at the feed pump. [PCC 17.12.190.B] **[Federally Enforceable Condition]**
- D. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the air polluting operations including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Control Officer which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [PCC 17.12.185.A.2 & PCC 17.16.020.A]

IV. AIR POLLUTION CONTROLS

[PCC 17.12.185.A.2]

- A. The Permittee shall operate and maintain the RTO in accordance with the manufacturer's recommendations or an Operations and Maintenance Plan approved by the Control Officer. **[Material Permit Condition]**
- B. The Permittee shall ensure that the combustion temperature of the RTO is maintained above 1500 degrees Fahrenheit (°F). This temperature will be indicative of the destruction efficiency of the VOCs and HAPs from the New Era Coater in a manner necessary to comply with the emission limitations in II.A & C of the Specific Conditions.
- C. The Permittee shall install at an appropriate height in the RTO, certify, maintain and continuously operate a temperature measurement device that measures and ultimately records the combustion temperature. The temperature device shall be in operation at all times that the RTO is operating and shall be equipped with an alarm which sounds when the combustion temperature falls below 1500 °F.

V. MONITORING REQUIREMENTS

[PCC 17.12.185.A.3]

- A. For VOCs, NOx, HAPs and fuel & sulfur content monitoring follow procedures in Recordkeeping.
- B. Regenerative Thermal Oxidizer

To verify proper operation and efficiency of the RTO, the Permittee shall conduct a thorough inspection of the combustion equipment no later than one year before expiration of this permit, following the manufacturer's recommended practices or an Operations and Maintenance Plan approved by the Control Officer.

- C. Opacity Standard

The Permittee shall conduct a visible emissions check on all emission points at least quarterly while all processes and units at the facility are operating. If visible emissions are observed, the Permittee

shall take any necessary preventative action to eliminate or reduce any visible emissions. For the purposes of this permit, a visible emission check is verification that abnormal emissions are not present at any emission points.

VI. RECORDKEEPING REQUIREMENTS

[PCC 17.12.185.A.4]

A. Solvent Use

The Permittee shall maintain monthly records of all VOC and HAPs containing solvent use. These records shall be updated within 14 calendar days following the end of the month.

B. Solvent Usage Rate

The Permittee shall record, in a permanent log available for inspection by the Control Officer, the coating slurry pump rate at a minimum of one-hour intervals while the New Era Coater is in operation. The Permittee shall keep manufacturer recommended calibration methods and frequencies for the solvent usage rate measuring device onsite.

C. Volatile Organic Compounds (VOCs) Limitation

The Permittee shall calculate and record the monthly VOC emissions in tons per year from the facility. The Permittee shall use this number and recalculate a rolling twelve (12) month total of VOC emissions from the facility. The emission calculations shall be based on actual solvent use, coating rates and, as appropriate, actual RTO operations during the subject calendar month. These records shall be updated within 14 calendar days following the end of the month.

D. Hazardous Air Pollutants (HAPs) Limitation

1. The Permittee shall calculate and record the monthly single HAP emissions in tpy from the facility. The Permittee shall use this number and recalculate a rolling twelve (12) month total of single HAP emissions from the facility. These records shall be for all single HAP emissions with a potential to emit above 8 tpy and shall be updated within 14 calendar days following the end of the month.
2. The Permittee shall calculate and record the monthly combined HAPs emissions in tpy from the facility. The Permittee shall use this number and recalculate a rolling twelve (12) month total of combined HAPs emissions from the facility. These records shall be updated within 14 calendar days following the end of the month.

E. Air Pollution Control

The Permittee shall maintain records of the RTO operation in a permanent log suitable and available for inspection by the Control Officer. The records shall include the date, start and stop times and notes pertaining to normal or abnormal operation.

F. Fuel & Sulfur Content Limitation

The Permittee shall record the sulfur content of the gas being fired in the RTO and burners. The Permittee may comply with this requirement by maintaining a vendor provided receipt verifying purchase of natural gas or alternatively, a copy of the Federal Energy Regulatory Commission (FERC) approved tariff agreement that limits the sulfur content of transmitted pipeline quality natural gas to less than 0.9% sulfur by weight.

G. Opacity Standard

The Permittee shall record the date and time of the check, the name of the person conducting the check, the results of the check and type of corrective action taken (if required).

H. All records required by the permit shall be maintained for a minimum of five years including other records that may be necessary to demonstrate compliance with Pima County Code Title 17.

[PCC 17.185.A.4.b]

VII. REPORTING REQUIREMENTS

[PCC 17.12.185.A.5]

A. Within 90 days after start-up of the RTO, the Permittee shall submit manufacturer's recommendations that describe the operation and maintenance of the RTO including inspection of the unit. If manufacturer's recommendations are not available, the Permittee shall develop and submit a proposed Operations and Maintenance Plan for the RTO for approval by the Control Officer.

B. When requested by the Control Officer, the Permittee shall complete and submit an annual emissions inventory questionnaire. The questionnaire is due ninety days after the Control Officer makes a written request and shall include emission information for the previous calendar year. The questionnaire shall be on a form provided by or approved by the Control Officer and shall include the information required by PCC 17.12.320.

[PCC 17.12.320]

C. See the Additional Permit Requirements for other reporting requirements.

VIII TESTING REQUIREMENTS

[PCC 17.12.185.A.3 & PCC 17.20.010]

For purposes of demonstrating compliance, these test methods shall be used, provided that for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable federal requirements if the appropriate performance or compliance procedures or methods had been performed.

A. Opacity Testing

When necessary or when required by the Control Officer, the Permittee shall perform visible emissions observations in accordance with EPA Reference Method 9, Appendix A in 40 CFR 60 to demonstrate compliance with II.F of the Specific Conditions.

B. Particulate Matter Testing

Mass emission testing to determine compliance with the particulate matter standard (PCC 17.16.165.C.1) is not normally necessary as standard emission factors for natural gas combustion yield emission estimates of particulate matter that are far less than the standard allowed by the rule equation. The Control Officer may require the Permittee to quantify its particulate matter emissions if the control officer has reasonable cause to believe a violation of a standard has been committed.

C. Miscellaneous Emissions Testing

Should the Permittee desire to test or be required to test by the Control Officer to determine compliance with any applicable standard, a written request with the appropriate test methods shall be made to the Control Officer or Permittee respectively.

IX FACILITY CHANGES

Should the Permittee desire to change the facility or operations in any way (including, but not limited to, addition of new equipment, modification of current equipment or usage of fuels not specified within this permit), the Permittee shall first submit the proper notifications and follow the required permit revision procedure pursuant to PCC 17.12.240, PCC 17.12.255, or PCC 17.12.260.



ADDITIONAL PERMIT REQUIREMENTS

I. COMPLIANCE WITH PERMIT CONDITIONS

[PCC 17.12.185.A.7.a & b]

- A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and the air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
- B. The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit. The report shall be in 2 parts as specified below: [PCC 17.12.185.A.5 & PCC 17.12.040]
- 1 Notification by telephone or facsimile within 24 hours of the time the Permittee first learned of the occurrence of excess emission that includes all available information pursuant to PCC 17.12.040.B. To report excess emissions call **520-740-3340** or fax to **520-243-7340**.
 - 2 Detailed written notification by submission of an excess emissions report within 72 hours of the notification in I.B.1 above. **Send to PDEQ 33 N. Stone Ave, Ste 730, Tucson, Arizona 85701.**
- C. It shall not be a defense for a 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.
- D. The permit does not convey any property rights of any sort, or any exclusive privilege to the permit holder.
- E. The Permittee shall pay fees to the Control Officer pursuant to PCC 17.12.520.

[PCC 17.12.185.A.8 & PCC 17.12.520]

II. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

[PCC 17.12.185.A.7.c]

The permit may be revised, reopened, revoked and reissued, or terminated for cause pursuant to PCC 17.12.270. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination; or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

III. DUTY TO PROVIDE INFORMATION

[PCC 17.12.165.G & PCC 17.12.185.A.7.e]

- A. The Permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records to the Control Officer along with a claim of confidentiality.
- B. If the Permittee has failed to submit any relevant facts or if the Permittee has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

IV. SEVERABILITY CLAUSE

[PCC 17.12.185.A.6]

The provisions of this permit are severable. If any provision of this permit is held invalid, the remainder of this permit shall not be affected thereby.

**Sion Power
Air Quality Permit # 5001**

ATTACHMENT 1: APPLICABLE REGULATIONS

Requirements Specifically Identified as Applicable

Pima County Code (PCC) Title 17, Chapters:

- 17.12.190 Permits Containing Synthetic Emission Limitations and Standards
- 17.16.010 Local Rules and Standards; Applicability of more than one Standard
- 17.16.020 Noncompliance with Applicable Standards
- 17.16.040 Standards and Applicability (Includes NESHAP)
- 17.16.050 Visibility Limiting Standard
- 17.16.165 Standards of Performance for Fossil-fuel Fired Industrial and Commercial Equipment
- 17.20.010 Source Sampling, Monitoring, and Testing



**Sion Power
Air Quality Permit # 5001**

ATTACHMENT 2: EQUIPMENT LIST

Type of Equipment	Manufacturer	Model	Serial #/ Equip. ID #	Maximum Rated Capacity	Fuel(s)	Date of Manufacture	Date of Installation
Coater and Dryer—EPN1 (cathode coating room)	Liberty	N/A	CD1	2.9 lbs VOC/hr	N/A	1990's	2007
Coater and Dryer (cathode coating room)	New Era	N/A	CD2	99.4 lbs VOC/hr	N/A	2008	2008
Regenerative Thermal Oxidizer (RTO) (outside)—EPN2	Megtec	MIL-060-95	RTO1	6,000 scfm	Natural Gas	2008	2008
Attritor (cathode mixing room)	Eiger	Mini Motormill	A1	1 liter	N/A	1990's	2007
Attritor (cathode mixing room)	Szegvari	Type 1-S	A2	3 liter	N/A	1990's	2007
Attritor (cathode mixing room)	Szegvari	Type 1-S	A3	3 liter	N/A	1990's	2007
Attritor (cathode mixing room)	Microfluidics	Microfluidizer M-110EH	A4	1 liter	N/A	2007	2007
Hood (main lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H4	500 CFM	N/A	1990's	2007
Hood (main lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H5	500 CFM	N/A	1990's	2007
Hood (main lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H6	500 CFM	N/A	1990's	2007
Hood (main lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H7	500 CFM	N/A	1990's	2007
Hood (main lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H8	500 CFM	N/A	1990's	2007
Hood (electrolyte lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H9	500 CFM	N/A	1990's	2007
Hood (electrolyte lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H10	500 CFM	N/A	1990's	2007
Hood (electrolyte lab)	Kewaunee Scientific Equip.	AirFlow Supreme	H11	500 CFM	N/A	1990's	2007

Type of Equipment	Manufacturer	Model	Serial #/ Equip ID #	Maximum Rated Capacity	Fuel(s)	Date of Manufacture	Date of Installation
Dehumidifier Burner-ENP4 (Mounted on Roof)	Munters Corporation	IDS-J11-8G-9	1009-463	1,250,000 BTU/hr	Natural Gas	2007	2007
Dehumidifier Burner-ENP5 (Mounted on Roof)	Munters Corporation	HCD-4500-GA	1409	168,080 BTU/hr	Natural Gas	2007	2007
Dehumidifier Burner-ENP6 (Mounted on Roof)	Munters Corporation	ICA-1500-040	529	716,480 BTU/hr	Natural Gas	2007	2007
Anode Coater/ Curing Oven (Anode Room)	New Era	Custom made	CD3	1.76 lbs/ hr VOC 7.7 TPY MAX 10.8 lbs/ yr Ozone	N/A	2008	2008
Cathode Coater Slurry Pumping Enclosure	New Era	Custom made	CD2	1,000 CFM	N/A	2008	2008

OTHER EQUIPMENT & ACTIVITIES

The equipment listed below do not need to be permitted and are only listed here for informational purposes only. Sion does not need to inform PDEQ of fluctuations in this equipment. The listing is as follows:

- A filler in the dry room,
- Ultra Sonic Welder
- 3 hoods in the dry room
- 5 hoods in the main lab
- 3 hoods in the electrolyte lab
- 4 hoods and 2 attritors in the cathode mixing room
- Miscellaneous equipment such as grinders, lathe, saws etc in the equipment engineering lab