



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

RICK SCOTT
GOVERNOR

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LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

FINAL PERMIT

PERMITTEE

ArrMaz Products, L.P.
4800 SR 60 East
Mulberry, FL 33860

Air Permit No. 1050097-028-AO
Permit Expires: 6/19/2019
Minor Air Operation Permit
Air Operation Permit Renewal/Revision

Authorized Representative:
Mr. Jason Brannen, Plant Manager

This is the final permit for the renewal and revision of Air Operation Permit No. 1050097-025-AO. The permit is for a chemical manufacturing operation at the ArrMaz Products, L.P. facility (Standard Industrial Classification No. 2869). The revision partially incorporated the terms and conditions of Construction Permit No. 1050097-026-AC. The facility is located in Polk County at 4800 State Road 60 East in Mulberry, Florida. The UTM coordinates are Zone 17, 408.3 km East, and 3085.7 km North.

This final permit is organized by the following sections:

- Section 1. General Information
- Section 2. Administrative Requirements
- Section 3. Emissions Unit Specific Conditions
- Section 4. Appendices

Due to the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this final permit. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. A petition for administrative hearing must contain the information set forth below and must be filed (received) with the Agency Clerk in the Office of General Counsel, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, Agency.Clerk@dep.state.fl.us, before the deadline. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, any email address, telephone number and any facsimile number of the petitioner; the name, address, any email address, telephone number, and any facsimile number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A

statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this final permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

Any party to this order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Hillsborough County, Florida



Kelley M. Boatwright
Permitting & Waste Cleanup Program Administrator
Southwest District

06/19/2014

Effective Date

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Permit and the Appendices) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on the date indicated below to the persons listed below.

Mr. Jason Brannen, ArrMaz Products, L.P. (jbrannen@arrmaz.com)

Mr. Ronald G. Thomas, ArrMaz Products, L.P. (rthomas@arrmaz.com)

Mr. Jim Estler, President, Clean Air Consulting, Inc. (estlerj@aol.com)

Mr. Lawrence J. Maron, P.E., S&ME, Inc. (lmaron@smeinc.com)

Mr. Erin DiBacco, FDEP Southwest District (Erin.DiBacco@dep.state.fl.us)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.


(Clerk)

June 19, 2014
(Date)

SECTION 1. GENERAL INFORMATION (FINAL)

FACILITY AND PROJECT DESCRIPTION

Existing Facility

This is a chemical manufacturing facility that stores, handles, and processes primarily tall oils, tall oil fractions, tall oil derivatives, animal or vegetable fatty acids, organic acids, amines, petroleum distillates or derivatives, and mixtures thereof.

The existing facility consists of the following emissions units.

Facility ID No. 1050097	
EU ID No.	Emissions Unit Description
001	Sulfonation Unit
006	Reaction Kettles
010	Sulfonation Unit No. 2

***NOTE:** Please reference the Permit No., Facility ID, and Emissions Unit ID in all correspondence, test report submittals, applications, etc.*

Exempt Emission Sources/Activities

- Fossil Fuel Steam Generators exempt from permitting pursuant to Rule 62-210.300(3)(a)34., F.A.C.
 - a. Liquid Phase Heaters (4) (Emissions Unit 002) consists of four hot oil heaters serving the reaction kettles in a hot oil system loop. Three of the heaters are Heatec HCS-175, each rated at 2.0 MMBtu/hr., while one heater is Heatec HC-200, rated at 2.0 MMBtu/hr. Heaters are fired with natural gas as the primary fuel and No. 2 fuel oil with a maximum sulfur content of 0.5% by weight as a standby.
 - b. 500 HP Steam Boiler (NSPS) (Emissions Unit 003) consists of a Cleaver Brooks Model No. CB-200-500 steam boiler with a maximum design heat input rate of 22 MMBtu/hour when fired with natural gas.

Note: Because this boiler has a maximum design heat input capacity greater than 10 MMBtu/hour, it is subject to New Source Performance Standards (NSPS) Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) and must comply with the recordkeeping requirements specified in 40 CFR 60.48c(g)(2) of Subpart Dc. This boiler was initially permitted in Constriction Permit No. AC53-217015 and subsequently some permit conditions were modified in Construction Permit No. 1050097-020-AC. On March 31, 2014, the permittee submitted a letter surrendering Construction Permit No. AC-217015 and surrendering the permit conditions associated with the boiler in Construction Permit No. 1050097-020-AC. The permittee has elected to comply with the exemption requirements of Rule 62-210.300(3)(a)34.g., F.A.C.
 - c. 300 HP Steam Boiler (Emissions Unit 005) consists of a Clark 300 HP process steam boiler with a maximum design heat input rate of 12.6 MMBtu/hour, equivalent to 90 gallons/hour of new No. 2 fuel oil or 12,500 ft³/hour of natural gas usage. Natural gas is the primary fuel and new No. 2 fuel oil with a maximum sulfur content of 0.5% by weight is the backup fuel.

Note: The 300HP Steam Boiler is not subject to NSPS Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, since construction and operation was prior to June 9, 1989.

SECTION 1. GENERAL INFORMATION (FINAL)

In accordance with Rule 62-210.300(3)(a)34.g., F.A.C., the collective annual amount of fuel burned by the boiler and heaters listed above shall not exceed 375 million standard cubic feet of natural gas or 290,000 gallons of fuel oil (if burning only one type of fuel); if burning more than one type of fuel, the equivalent collective annual amount of fuels burned is limited according to Rule 62-210.300(3)(a)34.h., F.A.C.

- Storage Tanks 621 and 611 (Emissions Unit 007) and Storage Tank Farm (Emissions Unit 009), exempt from permitting pursuant to Rule 62-210.300(3)(b)1., F.A.C. These emissions units are used for the storage of tall oil, tall oil fractions, tall oil derivatives, animal or vegetable fatty acids, organic acids, amines, petroleum distillates, or derivatives and mixtures thereof. They consist of two large 100,000 gallon (U.S.) capacity storage tanks (EU 007), and multiple storage tanks of various sizes (EU 009). These tanks are a source of volatile organic compounds (VOC); however, emissions are minimal due to the low vapor pressure of the materials stored. Additionally, VOC emissions are reduced by equipping all tanks with fixed roofs, submerged filling capabilities and proper work practices to minimize spills, etc.
- A 500-gallon (3,500 pounds/batch, typical) Research and Development (R & D) reaction kettle, considered exempt from permitting due to its low capacity and infrequent use pursuant to Rule 62-210.300(3)(b), F.A.C.

FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAPs).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is not a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- This facility is a synthetic non-Title V source for sulfur dioxide (SO₂). The restriction on maximum sulfur input rate and proper use and maintenance of the control devices (SO₂ absorbers) will ensure that the facility's SO₂ emissions will be below the threshold for a Title V source.

PERMIT HISTORY/AFFECTED PERMITS

This permit replaces Operation Permit No. 1050097-025-AO and partially incorporates Construction Permit No. 1050097-026-AC. Partial incorporation of Construction Permit No. 1050097-026-AC includes all of the conditions and requirements in the permit except for those specifically related to the proposed Reaction Kettle No. 1 contained in Emissions Unit No. 006.

{Note: Construction Permit No. AC-217015 and the permit conditions associated with the boiler in Construction Permit No. 1050097-020-AC were surrendered by the permittee to allow reclassification of the 500 HP Steam Boiler (NSPS) (Emissions Unit 003) from a regulated to an exempt emissions unit.}

SECTION 2. ADMINISTRATIVE REQUIREMENTS (FINAL)

1. Permitting Authority - The permitting authority for this project is the Florida Department of Environmental Protection (Department), Southwest District Office's Air Permitting Program. The mailing address and phone number is:

Florida Department of Environmental Protection
Southwest District Office
Air Permitting Program
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926
Telephone: 813-470-5700

All documents related to applications for permits shall be submitted to the above address.

2. Compliance Authority - The compliance authority for this project is the Florida Department of Environmental Protection (Department), Southwest District Office's Compliance Assurance Program. The mailing address and phone number is:

Florida Department of Environmental Protection
Southwest District Office
Compliance Assurance Program
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926
Telephone: 813-470-5700

All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the above address.

3. Appendices - The following Appendices are attached as part of this permit:

- a. Appendix A. Citation Formats and Glossary of Common Terms;
- b. Appendix B. General Conditions;
- c. Appendix C. Common Conditions; and
- d. Appendix D. Common Testing Requirements.

4. Applicable Regulations, Forms and Application Procedures - Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions - For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.
[Rule 62-4.080, F.A.C.]

6. Modifications - Unless otherwise exempt by rule, the permittee shall not initiate any construction, reconstruction, or modification at the facility and shall not install/modify any pollution control device at the facility without obtaining prior authorization from the Department. Modification is defined as: Any physical change or changes in the method of operations or addition to a facility that would result in an increase in the

SECTION 2. ADMINISTRATIVE REQUIREMENTS (FINAL)

actual emissions of any air pollutant subject to air regulations, including any not previously emitted, from any emissions unit or facility.

[Rules 62-210.200 - Definition of "Modification" and 62-210.300(1)(a), F.A.C.]

7. Annual Operating Report - On or before **April 1** of each year, the permittee shall submit a completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility" (AOR) for the preceding calendar year. The report may be submitted electronically in accordance with the instructions received with the AOR package sent by the Department, or a hardcopy may be sent to the Compliance Authority.
[Rule 62-210.370(3), F.A.C.]
8. Operation Permit Renewal Application - A completed application for renewal of the operation permit shall be submitted to the Permitting Authority no later than 60 days prior to the expiration date of the operation permit. To properly apply for an operation permit, the applicant shall submit the following:
 - a. the appropriate permit application form (*see current version of Rule 62-210.900, F.A.C. (Forms and Instructions), and/or FDEP Division of Air Resource Management website at: <http://www.dep.state.fl.us/air/>*);
 - b. the appropriate operation permit application fee from Rule 62-4.050(4)(a), F.A.C.; and
 - c. copies of the most recent month of records/logs specified in Specific Condition Nos. A.4. and B.3.

[Rules 62-4.030, 62-4.050, 62-4.070(3), 62-4.090, 62-210.300(2), and 62-210.900, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

A. EU No. 001 and 010 – Sulfonation Units

This section of the permit addresses the following emissions unit (EU).

EU ID No.	Emissions Unit Description
001	<p><u>Sulfonation Unit No. 1</u></p> <p>In this emissions unit, sulfur is burned to produce sulfur dioxide (SO₂). The SO₂ is then oxidized to sulfur trioxide (SO₃) in a catalyst bed. In the production of organic sulfonate products, SO₃ gas generated from the catalyst bed is passed through one of the two reactors in contact with various organic liquids. The reactor then discharges into a cyclone separators system which consists of two process cyclones connected in series. The cyclones are considered process equipment in this emissions unit and are used to recover liquid from the reactor discharge. The liquid stream exiting the cyclone system is subsequently neutralized to produce organic sulfonate products, while the gas stream exiting the cyclone system is vented through either the “Venturi Scrubber System” or the “SO₂ Absorber/Scrubbing System”. When the gas stream is vented through the “Venturi Scrubber System”, the gas passes through the Venturi-Cyclonic Scrubber, then through the final mist eliminator and stack, to the atmosphere. When the gas stream is vented through the “SO₂ Absorber /Scrubbing System”, the gas first passes through a liquid separator (filled with 2” ceramic saddles as a packing media) and then through a mist eliminator (located upstream of the SO₂ Absorber). The gas stream exiting the mist eliminator then passes through the SO₂ Absorber (packed tower), then through the final mist eliminator and stack, to the atmosphere.</p> <p>During startups and shutdowns, when organic sulfonate products are not being produced, the SO₃ gas generated from the catalyst bed goes directly to a sulfuric acid scrubber and produces sulfuric acid. The small amount of sulfuric acid that is produced is to prevent emissions. Therefore, the production of sulfuric acid does not meet the definition of a “sulfuric acid production unit” in 40 CFR 60.81(a) and is not subject to 40 CFR 60 Subpart H – Standards of Performance for Sulfuric Acid Plants. The gas stream from the sulfuric acid scrubber is vented through the “SO₂ Absorber/Scrubbing System” or the “Venturi Scrubber System”.</p>
010	<p><u>Sulfonation Unit No. 2</u></p> <p>In this emissions unit, sulfur is burned to produce sulfur dioxide (SO₂). The SO₂ is then oxidized to sulfur trioxide (SO₃) in a catalyst bed. In the production of organic sulfonate products, SO₃ gas generated from the catalyst bed is passed through a reactor (36 inches in diameter) in contact with various organic liquids. The reactor then discharges into a cyclone separator. The cyclone is considered process equipment in this emission unit and is used to recover liquid from the reactor discharge. The liquid stream exiting the cyclone is subsequently neutralized to produce organic sulfonate products, while the gas stream exiting the cyclone is vented through the “ESP/Scrubbing System”. In this system, the gas first passes through the electrostatic precipitator (ESP) unit which removes remaining condensables and particulates. The gas then passes through the SO₂ Absorber (packed tower), which removes SO₂ in the gas stream prior to discharge to the atmosphere.</p> <p>During startups and shutdowns, when organic sulfonate products are not being produced, the SO₃ gas generated from the catalyst bed goes directly to a sulfuric acid scrubber and produces sulfuric acid. The small amount of sulfuric acid that is produced is to prevent emissions. Therefore, the production of sulfuric acid does not meet the definition of a “sulfuric acid production unit” in 40 CFR 60.81(a) and is not subject to 40 CFR 60 Subpart H – Standards of Performance for Sulfuric Acid Plants. The gas stream from the sulfuric acid scrubber is vented through the “ESP/SO₂ Absorber/Scrubbing System”.</p>

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

A. EU No. 001 and 010 – Sulfonation Units

PERFORMANCE RESTRICTIONS

A.1. Permitted Capacity - The maximum sulfur input rate of Sulfonation Unit No. 1 (EU No. 001) shall not exceed 350 pounds/hour, averaged daily.

[Rules 62-4.070(3) and 62-210.200(Definition of Potential to Emit), F.A.C.; Construction Permit No. 1050097-024-AC]

A.2. Permitted Capacity: The maximum sulfur input rate of Sulfonation Unit No. 2 (EU No. 010) shall not exceed 634 pounds/hour, averaged daily.

{Permitting Note: An average SO₂ emissions rate of 0.028 lb./hr. was measured for Sulfonation Unit No. 2 during an emissions test conducted using Method 6 on 2/28/2014. The SO₂ emissions rate corresponds to a sulfur input rate of approximately 631.5 pounds/hour (daily average). The unit's potential SO₂ emissions can be estimated assuming linear relationship between the sulfur input rate and stack SO₂ emissions.}

[Rules 62-4.070(3) and 62-210.200(Definition of Potential to Emit), F.A.C.; Construction Permit No. 1050097-026-AC]

A.3. Hours of Operation - The hours of operation are not limited (8,760 hours per year).

[Rules 62-4.070(3) and 62-210.200(Definition of Potential to Emit), F.A.C.; Construction Permit Nos. 1050097-024-AC and 1050097-026-AC]

RECORDKEEPING AND REPORTING REQUIREMENTS

A.4. Daily and Monthly Logs - To demonstrate compliance with the sulfur input rate limitation of Specific Condition Nos. A.1. and A.2., the permittee shall maintain the following records:

- a. Facility name, facility ID No., emissions unit ID No., and date;
- b. Daily average sulfur input rate in pounds/hour;
- c. Daily average must be determined by one of the following methods:

Manually – Calculate the “Daily Average Sulfur Input Rate” by dividing the total quantity of sulfur feed input by total hours of operation for each day.

Continuous Monitoring – Calculate the “Daily Average Sulfur Input Rate” using continuous monitoring source data. Continuous monitoring source data used in the calculation must be derived from discrete data collected at constant intervals of either minutes or seconds. Interval duration shall not exceed 1 minute. The daily sulfur input rate data shall be maintained on the system for a minimum of 2 months and must also be made available to the Department for inspection upon request.

If the continuous monitoring recordkeeping option is selected, then the permittee shall also maintain the following monthly records:

- d. Facility name, facility ID No., emissions unit ID No., and month and year; and
- e. Daily average sulfur input rate in pounds/hour and date for each day during the month.

All daily records shall be completed within ten (10) calendar days and all monthly records shall be completed by the end of the following month. All required records required shall be maintained at the facility for at least three years, unless otherwise noted, and be made available to the Department for inspection upon request.

[Rule 62-4.070(3), F.A.C.; Construction Permit Nos. 1050097-024-AC and 1050097-026-AC]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

B. EU No. 006 – Reaction Kettles

This section of the permit addresses the following emissions unit (EU).

EU ID No.	Emissions Unit Description								
006	<p data-bbox="350 344 545 375"><u>Reaction Kettles</u></p> <p data-bbox="350 386 1484 516">This emissions unit is used to produce fatty amino acids, glycol esters, and other products primarily used for the phosphate and asphalt additives industry. It is also used to produce sulfurized crude tall oils. A summary of the reaction kettles and their maximum fill capacities is shown below:</p> <table border="1" data-bbox="621 527 1203 667"> <thead> <tr> <th data-bbox="621 527 907 562">Reaction Kettle No.</th> <th data-bbox="907 527 1203 562">Capacity (gallons)</th> </tr> </thead> <tbody> <tr> <td data-bbox="621 562 907 598">2</td> <td data-bbox="907 562 1203 598">6,500</td> </tr> <tr> <td data-bbox="621 598 907 634">4</td> <td data-bbox="907 598 1203 634">10,438</td> </tr> <tr> <td data-bbox="621 634 907 667">5</td> <td data-bbox="907 634 1203 667">11,709</td> </tr> </tbody> </table> <p data-bbox="350 678 1461 942">The kettles are batch operated with each batch averaging approximately 18 to 20 hours in duration during the production of the normal product line and approximately 3 to 4 hours in duration during the production of sulfurized crude tall oils. In addition to the reaction kettles, this emissions unit includes several packed tower scrubbers, equipped with a mist eliminator. The scrubbers operate using either sodium hydroxide or sodium hypochlorite as the scrubbing liquid. This emissions unit also includes a thermal oxidizer that has a design heat input rate of 4.0 MMBtu/hour and is fired with natural gas. The thermal oxidizer is used during the production of sulfurized crude tall oils to minimize the potential for objectionable odors.</p> <p data-bbox="350 953 1474 984">Operations and controls of all equipment included in this emissions unit are summarized below:</p> <p data-bbox="350 995 1479 1226">Reaction kettle No. 2 can be configured to produce either the sulfurized crude tall oil product line or the normal product line. When producing sulfurized crude tall oil, the vapors from kettle No. 2 vent through its condenser, then through a condensate collection tank, then through three scrubbers in series. Vapors exiting the final scrubber pass through a thermal oxidizer and out a stack to the atmosphere. When producing the normal product line, the vapors from kettle No. 2 vent through its condenser, then through a condensate collection tank, and then through a scrubber to the atmosphere.</p> <p data-bbox="350 1236 1490 1331">Reaction kettle No. 4 is configured to produce the normal product line. Vapors from kettle No. 4 vent through its condenser, then through a condensate collection tank, and then finally through its dedicated scrubber to the atmosphere.</p> <p data-bbox="350 1341 1490 1436">Reaction kettle No. 5 is configured to produce the normal product line. Vapors from kettle No. 5 vent through its condenser, then through a condensate collection tank, and then finally through a scrubber to the atmosphere.</p>	Reaction Kettle No.	Capacity (gallons)	2	6,500	4	10,438	5	11,709
Reaction Kettle No.	Capacity (gallons)								
2	6,500								
4	10,438								
5	11,709								

PERFORMANCE RESTRICTIONS

B.1. Hours of Operation: The hours of operation are not limited (8,760 hours per year). [Rules 62-4.070(3) and 62-210.200(definition of Potential to Emit), F.A.C.; Construction Permit No. 1050097-026-AC]

B.2. Operation Limitations: Reaction kettle Nos. 2, 4 and 5 may operate simultaneously. To ensure proper management of reactor kettle exhaust vapors, the following operation conditions shall be maintained:
Scrubber Operation – All scrubbers used to control emissions from reaction kettles shall be equipped with mist eliminators and properly maintained and operated. To ensure proper operation

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

B. EU No. 006 – Reaction Kettles

of the scrubbers, the following operating conditions shall be maintained during reaction kettle batch operations:

- a. Scrubber liquid shall be sodium hydroxide or other solutions to be determined by the Review Procedure below;
- b. Scrubber liquid minimum flow shall be maintained at or above 6 gallons per minute; and
- c. Scrubber liquid pH shall be maintained between 8 and 12.5, or as determined by the chemistry of kettle vapors or scrubber liquid (as per item a.);

Sulfurized Crude Tall Oil Production – During the production of the sulfurized crude tall oils, the following operation procedures shall be followed:

- e. Reaction kettles producing sulfurized crude tall oils must vent through the three scrubbers in series and the thermal oxidizer; and
- f. The thermal oxidizer shall have a minimum set point temperature of 1,550° F during the reaction of sulfur with crude tall oil.

Review Procedure – Emissions from the R & D reaction kettle are controlled by the same Southerland Associates packed tower wet scrubber that controls emissions from reaction kettle Nos. 2 and 5. In order to prevent objectionable odors, and in accordance with the process safety review proposed in Kenneth Given's letter dated December 14, 1993, a safety, environmental and mechanical review of the R & D reaction kettle, and each packed tower wet scrubber operation shall be instituted prior to the evaluation of any product class not previously processed. Records of the review shall be maintained on-site for a minimum of the most recent three (3) year period, and be made available to the Department upon request.

Should the Department have reason to believe that the reaction kettles are causing objectionable odor that interferes with the enjoyment of the surrounding area and interferes with the comfort and convenience of people, the Department may require that additional measures be taken.

[Rule 62-4.070(3), F.A.C.; Construction Permit No. 1050097-026-AC]

RECORDKEEPING AND REPORTING REQUIREMENTS

B.3. Daily Records – Operating Parameters: To ensure proper operation of scrubbers and thermal oxidizer, the permittee shall monitor and record the following parameters:

- a. Facility name, facility ID No., emissions unit ID No., and date;
- b. For each reaction kettle batch operation, record prior to and at a minimum of once during kettle batch operations:
 - 1) Reaction kettle number (2, 4, or 5);
 - 2) Product type (normal or sulfurized crude tall oil);
 - 3) Identify scrubber(s) used to control the reaction kettle exhaust;
 - 4) For each scrubber used to control reaction kettle exhaust, record:
 - a) Scrubber liquid (e.g., sodium hydroxide);
 - b) Scrubber liquid flow rate in gallons per minute; and
 - c) Scrubber liquid pH;
- c. If producing sulfurized crude tall oil, record the thermal oxidizer temperature every hour.

Daily records shall be completed within ten (10) calendar days. These records shall be maintained at the facility for at least three years, unless otherwise noted, and be made available to the Department for inspection upon request.

[Rule 62-4.070(3), F.A.C.; Construction Permit No. 1050097-026-AC]