Florida Department of Environmental Protection

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Sent by Electronic Mail – Received Receipt Requested

PERMITTEE

St. Marks Powder, Inc.
Post Office Box 222
St. Marks, Florida 32355

Authorized Representative:
John J. Nichols, Director of Operations

Air Permit No. 1290003-016-AC
Permit Expires: January 13, 2016

Title V Air Construction Permit
Project Name: Propellant Process Addition/Modification

This is the final air construction permit, which authorizes the reactivation of VOC-based surface coating in the North Sweetie Barrel; the addition of a vacuum pump and evaporator for solvent distillation in the Hybrid propellant process. There will be an increase in size of one production propellant impregnation vessel; a batch propellant drying equipment modification; and, the capacity of the sweetie barrel will be replaced with a larger size barrel (the operation is a pilot scale version of the North Sweetie Barrel). The proposed work will be conducted at the St. Marks Powder facility, which is a propellant manufacturing plant (Standard Industrial Classification No. 2892). The facility is located in Wakulla County at the intersection of U.S. 98 and S.R. 36 in Crawfordville, Florida. The UTM coordinates are Zone 16, 767.6 km East and 3342.1 km North. As noted in the Final Determination provided with this final permit, no changes were made to the draft permit.

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

Because of 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 construction 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, 62-213, 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. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, 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 (Mail Station #35, 3900 Commonwealth Boulevard, 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 30 days after this order is filed with the clerk of the Department.

Executed in Pensacola, Florida

/s/ 1/13/11

Rick Bradburn, Air Program Administrator (Date)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit) 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 January 13, 2011 to the persons listed below.

John J. Nichols, St. Marks Powder, Inc.: jjnichols@stm.gd-ots.com
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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.

/s/ 1/13/11

(Clerk) (Date)

FACILITY AND PROJECT DESCRIPTION

Existing Facility

This facility consists of a propellant manufacturing process, a nitroglycerin manufacturing process, and supporting utilities and operations. Volatile organic compounds (VOC) and sulfur dioxide (SO2) are the major pollutants emitted. Both single base (mostly nitrocellulose) and double base (nitrocellulose and nitroglycerin) propellant are produced for a wide range of small caliber and medium caliber ammunition applications. Propellant manufacturing process involves dissolving the nitrocellulose to form a lacquer, graining the lacquer, and coating and drying the grains to the appropriate specifications. The grains are impregnated with nitroglycerin in the double base process. Emission controls include venturi scrubbers and packed columns.

This facility is considered a major stationary source with respect to PSD because it emits or has the potential to emit 100 tons per year or more of any regulated air pollutant and the facility is a chemical process plant, one of the 28 PSD-major facility categories. The current Title V operating permit includes incorrect language under Emission Unit 011, "To avoid PSD (permit AC65-42779), the facility is limited to 245 tons per year of SO2 (generated by the boilers)."

Emissions Unit No. 012 includes emissions points associated with propellant surface coating operations. This includes continuous operations associated with the North Coater and South Coater production lines. Surface coating batch operations associated with the North Sweetie Barrel and the North East Sweetie Barrel production line have been discontinued; however, they are still used for blending propellant.

Facility ID No. 1290003	
ID No.	**Emission Unit Description**
011	Steam Boilers 1 and 2
012	Propellant Surface Coating Operations

Proposed Project

This project will consist of the following:

<u>North Sweetie Barrel (Emission Unit 012).</u>

- Reactivation of VOC based surface coating in the North Sweetie Barrel.
- A small 15 gallon tank with agitator and piping will be installed for the batch application of inorganic salts in isopropyl alcohol (IPA). The existing barrel heating system will be used to volatize the IPA. Volatized IPA and air will be captured and scrubbed by an existing control system.

<u>Unregulated/Insignificant Emission Unit Activities:</u>

- The 125 lb capacity Pilot Plant sweetie barrel will be replaced with a 250 lb capacity barrel (the operation is a pilot scale version of the North Sweetie Barrel).
- An evaporator designated E-evaporator will be re-piped so it can be used to make Hybrid propellant. In addition, a solvent receiver and vacuum pump will be installed such that E-evaporator can be operated under vacuum during the distillation portion of the Hybrid propellant batch cycle.
- A small overflow receiver and liquor pump will be installed to receive excess liquor from E-evaporator during the filling portion of the Hybrid propellant batch cycle and return that liquor the Hybrid propellant process.

- A 5,000 gallon evaporator will be installed to serve the function now served by E-evaporator.
- One of the two existing 13,000 gallon impregnation vessels will be replaced with a 20,000 gallon vessel.
- Shortening of the batch cycle times in the impregnation operation.
- At the production batch drying facility, the entire facility will be converted to cart drying. At the pilot plant batch drying facility, one of two bays will be converted to cart drying. (Racks and trays will be replaced with "carts". The cart is a metal box with a screen bottom enclosed to form an air inlet duct, and an open top. The cart is loaded with propellant slurry and the water is allowed to drain through the screen. Then the cart is taken to the dryer. Hot air is applied to the inlet. Moisture and air is exhausted.)

Facility ID No. 1290003

ID No.	Regulated Emission Unit Description
012	Propellant Surface Coating Operations

Facility ID No. 1290003

ID No.	Unregulated Emission Unit Description
013	Vacuum Distillation portions of the propellant process
014	Fugitive Emissions
015	Process Vessel Loading Losses
017	Propellant Dryer Exhausts
018	Lacquer Preparation Kettle Loading Losses
019	Solvent Storage Tanks
024	Pilot Surface Coating
ID No.	**Insignificant Emission Unit Description**
021	Pilot and Batch Dry Propellant Operations
022	Pneumatic Conveyors
023	Propellant Grinder

FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Northwest District Air Resource Management Program, Florida Department of Environmental Protection (Department). The District's mailing address is 160 Governmental Center, Suite 308, Pensacola, Florida 32502-5794. All documents related to applications for permits to operate an emissions unit shall be submitted to the District Office.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the District Office at the above address or nwdair@dep.state.fl.us.

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: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Source Obligation:

    (a) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

    (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

    [Rule 62-212.400(12), F.A.C.]

8. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing

operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. Propellant Surface Coating Operations

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
012	Propellant Surface Coating Operations

The North Sweetie Barrel is added back to this emission unit. A batch of propellant is charged to the Barrel and graphite is added to control static. Inorganic salt slurried in 2-propanol is added to the propellant as a surface coating. The barrel is heated with hot water to vaporize the alcohol. A fan pulls air, particulate matter and vaporized alcohol through a venturi scrubber to remove the particulate and a packed column scrubber to remove 80% of the alcohol. After the alcohol is evaporated, additional graphite is added to the barrel using a feeder. Because not all propellants require coatings, the line can be run either in VOC mode or in Particulate mode. VOC mode is when 2-propanol is being applied. Regardless of the level of coating required, VOC is introduced in the coating stream only. This stream is analyzed, and the application rate monitored to prevent overload of the control devices. SMP has designated applying VOC-based coating as "VOC Mode." In addition, all propellants are treated with a particulate antistatic material whether they have received a surface coating or not. SMP has designated application of only particulate antistatic materials as "Particulate Mode." In Particulate Mode the exhaust collection system and the venturi scrubber are used to control fugitive particulate emissions. In "Particulate Mode" propellant processing rates may be higher than rates in "VOC mode."

{Permit Note: The North Coater, South Coater, and the North Sweetie Barrel operate independently of each other. Each coater, North Coater, South Coater, and North Sweetie Barrel, operate in mutually exclusive modes: (1) A regulated mode, called VOC mode, where a slurry of inorganic salts (in a volatile carrier) is applied. (2) A non-regulated mode, called PM mode, where a dry, particulate, antistatic material is applied to the powder, or, in the case of the North Sweetie Barrel, where propellant is blended with itself.}

EQUIPMENT

1. The permittee is authorized to reactivate VOC-based surface coating in the North Sweetie Barrel. [Application No. 1290003-016-AC]

PERFORMANCE RESTRICTIONS

2. Permitted Capacity: The maximum allowable propellant production rate for each coating operation is as follows:

Operation in VOC mode	Type	Maximum Process Rate	Maximum VOC Input Rate
North Coater	Continuous	3600 lb/hr	160 lb/hr
South Coater	Continuous	3600 lb/hr	160 lb/hr
North Sweetie Barrel	Batch (≥3-hr cycle)	600 lb/hr (1800 lb/batch)	67 lb/hr
TOTAL		**7800 lb/hr**	**387 lb/hr**

Operation in PM mode	Type	Maximum Process Rate	Maximum VOC Input Rate
North Coater	Continuous	4000 lb/hr	0 lb/hr
South Coater	Continuous	4000 lb/hr	0 lb/hr
North Sweetie Barrel	Batch (≥30 min)	3600 lb/hr (1800 lb/batch)	0 lb/hr
TOTAL		**11,600 lb/hr**	**0 lb/hr**

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; Application No. 1290003-016-AC]

3. Hours of Operation: This emissions unit is allowed to operate continuously, i.e., 8,760 hours per year. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

4. Emissions Standards: Combined VOC emissions shall not exceed 77.4 lbs/hr and 39.1.tons in any consecutive 12-month period. VOC emissions from each of the coaters shall not exceed:

	Lb/hr	Tons/consecutive 12-months
North Coater	32	18
South Coater	32	20
North Sweetie Barrel	13.4	1.1
TOTAL	**77.4**	**39.1**

2/13/86—AC65-109412 (in file 004-010) issued for North Coater with 18 TPY VOC limit.
12/27/94—AC65-255951 issued (in file 004-010) for upgrades to the south coater scrubber. Specific condition No. 8 limits VOC emissions to 16 TPY. Letter of 5/30/95 requests to increase the emission limit to 20 TPY VOC.

[Rule 62-212.300(c), F.A.C., and requested by applicant in Application No. 1290003-016-AC]

TESTING REQUIREMENTS

5. Initial Compliance Tests: The emissions unit shall be tested to demonstrate initial compliance The North Sweetie Barrel scrubber outlet will be tested for VOC to verify 80% removal efficiency and for visible emissions. Testing will be conducted while the North Sweetie Barrel is operating at its maximum capacity in VOC Mode. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

6. Additional Compliance Tests: The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. [62-297.310(7)(a)3., F.A.C.]

7. Annual Compliance Tests: During each federal fiscal year (October 1 to September 30), the emissions unit shall be tested to demonstrate compliance with the emissions standards for VOC and VE. [Rule 62-297.310(7)(a)4, F.A.C.]

8. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Notification may be sent via e-mail to nwdair@dep.state.fl.us. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9, F.A.C.]

9. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; Appendix A of 40 CFR 60]

MONITORING REQUIREMENTS

10. Monitoring of Operations. Monitoring of the production process and scrubber performance shall follow the most recently approved Operations and Maintenance (O&M) Plan. The CAM monitoring plan for the North Sweetie Barrel Scrubber will be updated to include monitoring of all parameters necessary to ensure that the specific emission limit for VOC is not exceeded and that the general pollutant emission limiting standard is adhered to. The permittee shall submit a revised CAM plan for review and approval by the Department with the operating permit revision application. Failure to adhere to the monitoring parameter limits specified does not necessarily indicate an exceedance of a specific emissions limitation; however, it may constitute a reasonable basis to require compliance testing pursuant to Rule 62-297.310(7)(b), F.A.C. [Rules 62-4.070, 62-204.800, 62-213.440(1)(b)1.a., and 62-296.320, F.A.C., and 40 CFR 64]

11. Post Project Emissions Monitoring. Because this permit avoids the requirements of 62-212.400(4)-(11), F.A.C., based in whole or in part on projected actual emissions calculations, the permittee shall monitor the emissions of VOC and PM/PM10 for the following emission units for a period of 10 years following project completion. [62-212.300(1)(e)1., F.A.C.]:

Facility ID No. 1290003

ID No.	Regulated Emission Unit Description
012	Propellant Surface Coating Operations
ID No.	Unregulated Emission Unit Description
013	Vacuum Distillation portions of the propellant process
014	Fugitive Emissions
015	Process Vessel Loading Losses
017	Propellant Dryer Exhausts
018	Lacquer Preparation Kettle Loading Losses
019	Solvent Storage Tanks
024	Pilot Surface Coating
ID No.	**Insignificant Emission Unit Description**
021	Pilot and Batch Dry Propellant Operations
022	Pneumatic Conveyors
023	Propellant Grinder

RECORDS AND REPORTS

12. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the VOC and VE test. [Rule 62-297.310(8), F.A.C.]

13. Operational Data: The permittee shall maintain daily records to document compliance with permitted capacities established in specific condition No. 2. As a minimum the records shall include:
    a) Date
    b) Source identification
    c) Pounds propellant production (hourly based on daily totals for each mode)
    d) Pounds VOC usage (daily, monthly and 12-month rolling totals)
    e) Monthly and 12-month rolling total emissions of VOC by source.

A. Propellant Surface Coating Operations

Records of all calculations used to determine VOC emissions and supporting documentation (scrubber removal efficiency) shall be maintained. [Rule 62-4.070(3), F.A.C.]

13. Post Project Emissions Reporting: The permittee shall report to the Department within 60 days after the end of each year, for a period of 10 years following project completion the post project emissions monitoring data specified in Specific Condition 10 above. [Rule 62-212.300(1)(e) 2., F.A.C.]