

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **06 2 0 1 7 - 0 1 1** Project Number: 2016-11-030

Installation Number: 510-3027

Parent Company: SCF Lewis and Clark Terminals, LLC

Parent Company Address: 2801 Rock Road, Granite City, IL 62040

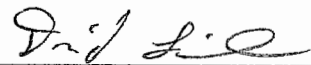
Installation Name: Municipal River Terminal (operated by SCF Lewis and Clark)

Installation Address: One North Market Street, St. Louis, MO 63102

Location Information: City of St. Louis

Application for Authority to Construct was made for:
Barge receiving and shipping terminal for bulk solid commodities. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.


Prepared by
David Little, PE
Environmental Engineer III
New Source Review Unit


Director or Designee
Department of Natural Resources

JUN 30 2017

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:

<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

SCF Lewis and Clark Terminals, LLC
City of St. Louis

1. **PM₁₀ Emission Limitation**
 - A. SCF Lewis and Clark Terminals, LLC shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the entire installation as indicated in Attachment A.
 - B. SCF Lewis and Clark Terminals, LLC shall develop and use forms to demonstrate compliance with Special Condition 1.A. The forms shall contain at a minimum the following information,
 - 1) Installation name
 - 2) Installation number
 - 3) Permit number
 - 4) Current month
 - 5) Current 12-month date range
 - 6) Monthly throughput for each emission unit with the potential to emit PM₁₀ (see Attachment B)
 - 7) PM₁₀ composite emission factors (lb/ton) for each commodity and handling method
 - a) At the time of this permit's issuance the composite emission factors are provided in Attachment B. The lb/ton values in Attachment B are composite emission factors, and already include the number of drop points and haul roads.
 - b) When SCF Lewis and Clark Terminals, LLC tests average moisture and silt content per Special Condition 11, SCF Lewis and Clark Terminals, LLC shall develop new (lb PM₁₀ / ton commodity) emission factors for use with the respective commodity to demonstrate compliance with Special Condition 1.A.
 - i. The equation from AP-42, Chapter 13.2.4.3, *Aggregate Handling and Storage Piles*, November 2006, shall be used. A wind speed of 7.1 mph shall be used. The tested silt and moisture content shall be indicated. If future testing of a commodity evaluated during this permit's review (see Attachment B) or a new commodity has a silt% above 19%, then SCF Lewis and Clark Terminals, LLC shall develop a PM₁₀ emission factor by multiplying the answer from the AP-42 equation by the ratio (silt% / (0.44%+19%) / 2).

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- ii. The result shall be multiplied by the number of drop points indicated in Attachment B, respective to the handling method.
- iii. To develop composite emission factors, the value from Special Condition 1.B.7)b)ii. shall be summed with the respective haul road emission factors in Table 1. The haul road values are the same per respective handling method and respective pile location, regardless of commodity.

Table 1: Haul Road and Pile PM₁₀ Emission Factors (lb/ton)

Handling Method	North Crane	South Crane	Feed Products Crane
Direct from barge to truck	2.19E-03	3.86E-03	3.86E-03
Barge to dock, loader to truck	2.94E-03	5.33E-03	
Barge to dock, loader to truck, truck to pile, loader to truck	Lower pile 3.66E-03	8.30E-03	
Barge to dock, loader to truck, truck to pile, loader to truck	Upper pile 7.05E-03		

- 8) Monthly emissions (excluding storage pile wind erosion) for each commodity and handling method calculated using the following equation:
- $$PM_{10} \text{ emissions (tons)} = \text{Commodity processed (tons)} \times \text{Respective composite emission factor} \left(\frac{\text{lb PM}_{10}}{\text{ton of commodity processed}} \right) \times \left(\frac{1 \text{ ton PM}_{10}}{2000 \text{ lbs PM}_{10}} \right)$$
- 9) PM₁₀ emission factors (lb/acre/day) for storage pile wind erosion for each commodity and handling method
- a) At the time of this permit's issuance the wind erosion emission factors are provided in Attachment B.
 - b) When SCF Lewis and Clark Terminals, LLC tests average moisture and silt content per Special Condition 11, SCF Lewis and Clark Terminals, LLC shall develop new (lb PM₁₀ /acre/day) emission factors for use with the respective commodity during the respective month to demonstrate compliance with Special Condition 1.A. The equation from *WRAP Fugitive Dust Handbook*, Chapter 9.3, Storage Pile Wind Erosion Emission Estimation: Alternative Methodology, September 7, 2006, shall be used. An "f" value of 8.8 shall be used. A "p" value of 110 shall be used.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The silt % shall be indicated.

- 10) Monthly emissions (including storage pile wind erosion) for each commodity and handling method calculated using the following equation:

$$\begin{aligned}
 & PM_{10} \text{ emissions (tons)} \\
 & = PM_{10} \text{ emissions (tons) from Special Condition 1.B.8)} \\
 & + \text{respective wind erosion emission factor } \left(\frac{\text{lb PM}_{10}}{\text{acre} \times \text{day}} \right) \\
 & \times \left(\frac{\text{pile acres}}{1} \right) \times \left(\frac{\text{storage duration days}}{1} \right) \left(\frac{1 \text{ ton PM}_{10}}{2000 \text{ lbs PM}_{10}} \right)
 \end{aligned}$$

- 11) Monthly emissions of PM₁₀ calculated by summing all PM₁₀ emissions from all commodities, handling methods, haul roads, and storage piles
- 12) 12-month rolling total PM₁₀ emissions from all emission units, and the sum of all PM₁₀ emissions from startup, shutdown, and malfunction as reported the Air Pollution Control Program's Compliance/Enforcement Section
- 13) Indication of compliance status with Special Condition 1.A.

2. Operational Requirement – Warehouse

SCF Lewis and Clark Terminals, LLC shall not process through the warehouse any aggregate, loose bulk commodity, or other such material that has the potential to emit from drop points.

3. Operational Requirement – Feed Products Crane

SCF Lewis and Clark Terminals, LLC shall not use a storage pile or other storage method in association with the feed products crane, exclusive of a barge, railcar, or truck. A front end loader shall not be used on land except to clean up spills on the dock.

4. Operational Requirement – Fertilizers

- A. SCF Lewis and Clark Terminals, LLC shall not use a storage pile or other storage method in association with fertilizer, including but not limited to those fertilizers listed in Table 1. Storage in a barge, railcar, or truck is permitted. A front end loader shall not be used on land except to clean up spills on the dock.

Table 2: Fertilizers

Ammonium sulfate
Diammonium phosphate - blonde
Diammonium phosphate – brown
Industrial potash
Muriate of potash
Soluble potash
Urea

270-819800

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

5. **Paved Haul Roads**
 - A. SCF Lewis and Clark Terminals, LLC shall conduct maintenance and/or repair of the existing paved road surface as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating. Records of all maintenance and repair activities shall be kept onsite indicating the specific activity, road location, and date.
 - B. SCF Lewis and Clark Terminals, LLC shall establish and follow a paved haul roads and paved front end loader travel areas cleaning, or watering, or vacuum-sweeping standard operating procedure (SOP). A copy of the SOP report shall be submitted to the Air Pollution Control Program's Compliance/Enforcement Section within 60 days of this permit's issuance. The report shall include but is not limited to the following information, haul road segment/location, cleaning method/water application rate, and schedule. Trackout from unpaved areas and spills shall be removed as soon as practical.
6. **Unpaved Haul Road Documented Watering**
 - A. SCF Lewis and Clark Terminals, LLC shall control dust from all unpaved haul roads and unpaved front end loader travel areas using water or surfactant spray consistently and correctly at all times to prevent visible fugitive emissions from entering the ambient air beyond the property boundary. The following conditions apply to haul road watering:
 - 1) The water application rate shall be 100 gallons per 1,000 square feet at least once every day.
 - 2) A quarter inch or more rainfall during the preceding 24 hours shall substitute for one daily water application.
 - 3) Water/surfactant application shall not be required when the ground is frozen or when there will be no traffic on the roads.
 - B. SCF Lewis and Clark Terminals, LLC shall keep the following records on file and available for inspection:
 - 1) A daily log initialed by the responsible installation operator of roads watered and quantity of water/chemical application used, or notation that there was a quarter inch or greater rainfall within the past 24 hours or that the installation was not in operation.
 - 2) Water tank size, total area of roads to be watered, and the resultant number of fills necessary to accomplish the required application rate.
 - 3) Records of watering equipment breakdowns and repairs.
7. **Capture Device Requirement - Conveyor Enclosure**
 - A. SCF Lewis and Clark Terminals, LLC shall capture emissions from the

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- feed product crane transfer between the drag and belt conveyors (EU-27) using a partial enclosure.
- B. The partial enclosure shall surround all sides of the transfer point, except a minimal opening above the drag conveyor allowing material to enter and a minimal opening above the belt conveyor allowing material to exit.
- C. The enclosure shall extend at least one conveyor width upstream and two conveyor widths downstream from the transfer point.
8. Control Device Requirement – Dust Collector CD-01
- A. SCF Lewis and Clark Terminals, LLC shall control emissions from the feed product crane transfer between the drag and belt conveyors (EU-27) using a dust collector.
- B. The dust collector shall be operated and maintained in accordance with the manufacturer's specifications. The dust collector shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
- C. Replacement filters for the dust collector shall be kept on hand at all times. The bag/filter shall be made of fibers appropriate for operating conditions expected to occur (e.g. temperature limits, acidic and alkali resistance, and abrasion resistance). The replacement filter material type and weight shall meet or exceed the specifications of the existing filter. The air to cloth ratio or air to filter ratio shall not be increased when filter replacement is performed.
- D. SCF Lewis and Clark Terminals, LLC shall monitor and record the operating pressure drop across the dust collector at least once daily. Days with no conveyor usage shall be indicated. The operating pressure drop shall be maintained within the design conditions specified by the dust collector and filter manufacturers' performance warranties.
- E. SCF Lewis and Clark Terminals, LLC shall maintain a copy of the dust collector and bag/filter manufacturer's performance warranties on site.
- F. SCF Lewis and Clark Terminals, LLC shall maintain an operating and maintenance log for the dust collector which shall include the following:
- 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc; and
 - 3) Dates of all above schedules, incidents, activities, and actions.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

9. **Record Keeping and Reporting Requirements**
 - A. SCF Lewis and Clark Terminals, LLC shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
 - B. SCF Lewis and Clark Terminals, LLC shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.
10. **Commodity Silt and Moisture Testing**
 - A. SCF Lewis and Clark Terminals, LLC shall test all commodities that have the potential for drop point emissions for silt % and moisture %, except coal, scrap metal, and fertilizer / feed product ingredients.
 - B. Sample location and the number of samples shall be representative of the entire received shipment, e.g. at more than one elevation and location within the barge. Samples may be obtained from the barge(s), or from commodities located onsite within 7 days after receipt but before a precipitation event. SCF Lewis and Clark Terminals, LLC shall test at the following frequency,
 - 1) Initial testing shall be conducted within 60 days of this permit's issuance.
 - 2) Testing shall be conducted on each shipment of the respective commodity, for 4 more consecutive shipments. The average value for the respective commodity shall be calculated using those 5 values.
 - 3) If any of the 5 tests varies from the average by less than or equal to +/- 10%, then testing shall be conducted once every 6-months (or the next shipment if that commodity is not available within 6-months) for that respective commodity. The established 5 shipment average shall be used in Special Conditions 1 and 2.
 - a) If the 6-month test or any subsequent test varies from the 5 shipment average by less than or equal to +/- 10%, then the established 5 shipment average shall be used in Special Conditions 1 and 2.
 - b) If the 6-month test or any subsequent test varies from the 5 shipment average by more than +/- 10%, then testing shall revert to B.2). While the new 5 shipment average is being developed, the individual test value respective to that shipment and the corresponding shipment tonnage shall be used in Special Conditions 1 and 2.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- 4) If any of the 5 tests varies from the average by more than +/- 10%, then then testing shall revert to B.2). While the new 5 shipment average is being developed, the individual test value respective to that shipment and the corresponding shipment tonnage shall be used in Special Conditions 1 and 2.
- C. Silt testing shall be conducted using ASTM C136 method.
- D. Moisture testing shall be conducted using ASTM C566 method or a portable moisture probe. If a probe is used then the probe shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications, which shall be kept onsite.
- E. SCF Lewis and Clark Terminals, LLC shall record onsite the following data from each test.
 - 1) Commodity
 - 2) Number of barges received per shipment
 - 3) Number and location of samples taken per shipment
 - 4) Silt and moisture content of each sample
 - 5) Average silt and moisture content of the shipment
 - 6) 5 shipment average
 - 7) Date

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2016-11-030

Installation ID Number: 510-3027

Permit Number: 06 2017 - 011

Installation Address:

SCF Lewis and Clark Terminals, LLC
One North Market Street
St. Louis, MO 63102

Parent Company:

SCF Lewis and Clark Terminals, LLC
2801 Rock Road
Granite City, IL 62040

REVIEW SUMMARY

- SCF Lewis and Clark Terminals, LLC has applied for authority to construct a bulk solid commodity barge receiving and loading installation on the Mississippi River in St. Louis.
- The application was deemed complete on January 12, 2017.
- Metal HAP emissions are expected from handling slag, magnetite, coal, and coke. No VOC or volatile HAP emissions are permitted.
- None of the NSPS under 40 CFR 60 apply to the installation.
- None of the NESHAPs under 40 CFR 61 apply to the installation.
- None of the MACTs under 40 CFR 63 apply to the installation.
- Haul roads will be controlled with watering or cleaning. One conveyor transfer point EU27 will be controlled with enclosure routed to a filter.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below the de minimis level. Potential emissions of PM are at minor source levels.
- This installation is located in the City of St. Louis, with ambient air status summarized below,
 - maintenance for the serious 1979 1-hour ozone standard (revoked)
 - maintenance for the moderate 1997 8-hour ozone standard (revoked)
 - marginal nonattainment for the 2008 8-hour ozone standard
 - maintenance for the 1971 carbon monoxide standard
 - moderate nonattainment for the 1997 PM_{2.5} standard
 - the installation is not located in an SO₂ nonattainment area

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year for attainment pollutants and fugitive emissions are not counted toward their major source applicability.
- Ambient air quality modeling was not performed since PM₁₀ and PM_{2.5} potential emissions of the project are conditioned below the de minimis level. There is no ambient air standard for PM.
- Silt and moisture testing are required for the commodities.
- No operating permit from the Air Pollution Control Program is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

SCF Lewis and Clark Terminals, LLC is a new tenant at the existing Saint Louis Port Authority's Municipal River Terminal. No permits have been previously issued to SCF Lewis and Clark Terminals, LLC from the Air Pollution Control Program. The location was previously leased by Beelman River Terminals Inc. under site ID 510-2565. Beelman left the location, the emission units were removed, and the permits voided. The site ID for SCF Lewis and Clark Terminals, LLC has been changed to 510-3027.

A letter of warning was issued to SCF Lewis and Clark Terminals, LLC on October 11, 2016. SCF Lewis and Clark Terminals, LLC was operating without a permit nor justification that a permit was not needed. A permit is needed, as shown by this permit being issued. An operating permit determination under project 2015-10-048 also notified SCF Lewis and Clark Terminals, LLC that Beelman's permits could not be transferred to them.

PROJECT DESCRIPTION

The installation will receive loose bulk commodities at the locations indicated in Attachment B. Commodities will be shipped out via truck or rail. The installation will have the flexibility to receive other commodities without prior construction permitting by use of the PM₁₀ emission limit, prescriptive compliance tracking, and testing. The north, south, and feed products cranes are each rated at 500 tph. The applicant submitted justification of the design rating. The cranes are track driven, and therefore the associated engines are nonroad. Nonroad engines are not included in NSR permits, however may have other requirements such as 40 CFR 89 or 40 CFR 1039. Emission units downstream of the cranes include other drop points, storage piles, and haul roads as summarized in Attachment A.

The installation will receive packaged materials, such as steel coil, that do not have potential emissions from drop points, but do have associated haul road emissions. Coil handling is rated at 500 tph. The installation will receive scrap metal by truck and ship out by barge, rated at 300 tph. No other processing of scrap metal is permitted at this time, such as shredding or cutting. No combustion, VOC, or volatile HAP sources are permitted at this time.

One conveyor drop point will be controlled by a fabric filter. Other drop points will not have add-on controls. Storage piles will not have add-on controls. Haul roads and front end loader vehicular activity areas will be controlled.

EMISSIONS/CONTROLS EVALUATION

North Crane

Potential PM, PM₁₀, and PM_{2.5} emissions from drop points were calculated using AP-42 *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Chapter 13.2.4, Aggregate Handling and Storage Piles, November 2006. Site specific moisture content was used if available. Average wind speed of 7.1 mph was obtained from representative National Weather Service data. Magnetite iron ore, salt, blast furnace slag, limestone, and fertilizers were evaluated.

Magnetite silt content is 58.9%, which is significantly outside of the 0.44-19% range in AP-42. AP-42 does not provide an adjustment for siltier materials, but acknowledges that they should have higher emissions. It says that siltier materials are probably loaded at lower winds. However, all materials may experience the same wind speed onsite. Therefore this review increased the PM, PM₁₀, and PM_{2.5} factors by multiplying the AP-42 result by the ratio of magnetite silt content to the arithmetic average of the range ($58.9 / (0.44+19) / 2$). This emission factor alteration may be reexamined through a permit amendment request. The greatest overall potential emissions are from fertilizer, even though fertilizer will not be dropped onto the dock nor placed in storage piles.

Fertilizer emissions were calculated using SCC 3-01-04-007 for bulk loading urea (0.02 lb PM / ton, 0.017 lb PM₁₀ / ton, 0.006 lb PM_{2.5} / ton). PM_{2.5} was obtained from AP-42 Table B.2.2, category 4 being 30% of PM. The PM emission factor matches SCC 3-01-027-09 for bulk loading ammonium nitrate. The application lists the silt content of all the fertilizers planned to be handled, including urea, at 0.01% or higher. Using these fertilizer emission factors for fertilizer is consistent with permitting practices at inland depots that distribute to farmers.

Potential emissions at the north crane for non-fertilizers are calculated based upon 90% of material sent to the lower pile, with 10% to the upper pile. However, compliance with the permit emission limits can use the actual handling method and specific commodity emission factors in Attachment B.

Potential PM, PM₁₀, and PM_{2.5} emissions from storage pile wind erosion were calculated using the alternative methodology in the *WRAP Fugitive Dust Handbook*, Western

Governors' Association, prepared by Countess Environmental, 9/7/2006, Chapter 9. Storage Pile Wind Erosion, Section 9.3. Magnetite was used since it has the highest silt content. Storage was assumed every day of the year.

HAPs were calculated based upon the worst case weight % in either magnetite or slag. The weight % was multiplied by the PM emission factor.

South Crane

Potential PM, PM₁₀, and PM_{2.5} emissions from drop points were calculated using AP-42 *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Chapter 13.2.4, Aggregate Handling and Storage Piles, November 2006. Site specific moisture content was used if available. Average wind speed of 7.1 mph was obtained from representative National Weather Service data. Coal (assumed bituminous), petcoke, and mulch were evaluated. There was no adjustment for a higher silt content. Fertilizer was also evaluated. Particulate emissions were the greatest with fertilizer for drop points and petcoke for the storage pile. Combined HAP emissions were the greatest with a worst case composite of coal and petcoke, respective to the individual HAP. Compliance with the permit emission limits can use the actual handling method and specific commodity emission factors in Attachment B.

Feed Products Crane

The fertilizer emission factors were used for magnesium oxide, monocalcium phosphate, feed grade urea, and general fertilizer. Capture efficiency of 75% was assigned to the partial enclosure around the drop point from the drag conveyor to the belt conveyor. Fabric filter control efficiencies of 99.5%, 99.5%, and 99.0% were assigned for PM, PM₁₀, and PM_{2.5}, respectively. Material will be shipped via conveyors to rail, via the same conveyors to truck, or directly from barge to truck. No material will be stored onsite.

Haul Roads

Potential PM, PM₁₀, and PM_{2.5} emissions from truck haul roads and front end loader travel were calculated using AP-42 Chapter 13.2.1, Paved Roads, and Chapter 13.2.2, Unpaved Roads. A paved silt loading of 3.0 grams / square meter was assumed for cleaning. Lower values could be used if testing was required. An unpaved silt content of 10% was assumed from the AP-42 mean for a quarry plant road. Unpaved road documented watering or surfactant control efficiencies of 90%, 90%, and 74% were assigned for PM, PM₁₀, and PM_{2.5}, respectively.

Scrap Metal

Potential PM, PM₁₀, and PM_{2.5} emissions from handling scrap metal were calculated using SCC 3-05-020-06 for uncontrolled aggregate transfer. This method was using for the neighboring Grossman Steel permit 042015-007. Scrap metal will only be processed by drop points; there will be no shredding or cutting. Potential HAP emissions were conservatively calculated using chromium, manganese, and nickel contents for stainless and other high grade steels. The HAP content was multiplied by the PM emission factor. However, a reduction in HAPs was then applied assuming the high grade metals are less corroded than iron or steel and therefore are less dusty when handled.

Coil / Warehouse

Potential PM, PM₁₀, and PM_{2.5} emissions from handling steel coils were calculated only for haul road and front end loader activities. Coils will be stored in the warehouse. The warehouse is not permitted to store any loose, bulk materials. Also, no solvent cleaners or combustion space heaters are permitted at this time.

A front end loader is permitted to be used inside a barge. This would be to assist in removing the final, small amounts of commodity from a barge; amounts that are scattered and cannot be picked up by the crane bucket when a barge is almost empty. Although this process is an additional source of emissions, it was considered negligible for this permit due to the presumed low throughput handled by this method.

The following table provides an emissions summary for this project/new installation. The project is the new installation. The unconditioned potential emissions of the project represent continuous operation (8,760 hours per year), but includes control devices. The new installation conditioned potential represents a voluntary PM₁₀ limit to the de minimis level to avoid ambient modeling at the time of permit issuance. PM and PM_{2.5} were proportionately reduced with PM₁₀. PM₁₀ or PM_{2.5} modeling or monitoring could be required in the future.

Table 3: Emissions Summary (tpy)

Pollutant	De Minimis / SMAL	Unconditioned Potential Emissions of the Project	Installation Conditioned Potential
PM	25.0	554.25	30.28
PM ₁₀	15.0	274.55	< 15.0
PM _{2.5}	10.0	87.38	4.77
SO ₂	40.0	N/A	N/A
NO _x	40.0	N/A	N/A
VOC	40.0	N/A	N/A
CO	100.0	N/A	N/A
GHG (CO ₂ e)	N/A	N/A	N/A
GHG (mass)	N/A	N/A	N/A
Combined HAPs	25.0	0.27	0.27
Antimony Compounds	5	2.7E-04	2.7E-04
Arsenic Compounds	0.005	2.8E-04	2.8E-04
Beryllium Compounds	0.008	2.2E-04	2.2E-04
Cadmium Compounds	0.01	5.3E-05	5.3E-05
Chromium 3 Compounds	5	0.043	0.043
Cobalt Compounds	0.1	1.4E-03	1.4E-03
Lead Compounds	0.01	2.7E-03	2.7E-03
Manganese Compounds	0.8	0.21	0.21
Mercury Compounds	0.01	1.0E-04	1.0E-04
Nickel Compounds	1	0.008	0.008
Selenium Compounds	0.1	5.2E-04	5.2E-04
Radionuclide - Thorium	See below	4.6E-06	4.6E-06

Radionuclide - Uranium		
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N/A = Not Applicable; N/D = Not Determined

The total mass of the compound is used to determine emissions for comparison to the Major Source Thresholds. The mass of the metal portion of the compound is used to determine emissions for comparison to the SMAL and RAL.

Radionuclides are combined for comparison to the SMAL. The SMAL for radionuclides is defined as the effective dose equivalent to 0.3 millirems per year for 7 years exposure associated with a cancer risk of 1 in 1 million.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below the de minimis level. Potential emissions of PM are at minor source levels, greater than de minimis.

APPLICABLE REQUIREMENTS

SCF Lewis and Clark Terminals, LLC shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220 applies to non-fugitive emission units at the feed products line, such as hopper to conveyor transfer, conveyor to conveyor transfer, and conveyor to rail transfer. The limit is 20% opacity, with 40% allowed for one continuous six minute period in any sixty minutes.

- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400 applies to hopper to conveyor transfer and conveyor to conveyor transfer. The emission units are in compliance.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 10, 2016, received November 10, 2016, designating SCF Lewis and Clark Terminals, LLC as the operator of the installation.
- SDS, received January 12, 2017.
- Moisture and Silt, received January 12, 2017.
- Municipal River Terminal Emissions Calcs, received January 12, 2017.
- Plot Plan, received January 12, 2017.
- Process Flow Diagram, received January 12, 2017.
- Signed Page 1 of Application, received January 12, 2017.
- Emails among the Air Pollution Control Program (David Little), SCF Lewis and Clark Terminals, LLC (Paul Wellhausen), and Hastings Engineering (Rancy Hastings), dated November 28, 2016 to May 1, 2017.

The following documents are permit references:

- 2016-11-030 draft 1, February 24, 2017.
- 2016-11-030 draft 2, March 23, 2017.
- 2016-11-030 draft 3, March 28, 2017.
- 2016-11-030 Excel file, March 23, 2017.
- EPA, AP-42 *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- EPA, webFIRE.
- *WRAP Fugitive Dust Handbook*, Western Governors' Association, prepared by Countess Environmental, September 7, 2006, Chapter 9. Storage Pile Wind Erosion, Section 9.3 Emission Estimation: Alternate Methodology.
- *Characterization of the Quality of Coals from the Illinois Basin*, Chapter E of *Resource Assessment of the Springfield, Herrin, Danville, and Baker Coals in the Illinois Basin*, R.H. Affolter and J.R. Hatch, U.S. Geological Survey Professional

Paper 1625–D, Table 4, page E23.

- American Fuel and Petrochemical Manufacturers, www.afpm.org/policy-position-petroleum-coke, accessed November 2, 2015.
- *Comparison of Fuel Properties of Petroleum Cokes and Coals Used in Power Generation*, A.J. Edmond Co., Tables 1 and 2, pages 85-88.
- *Steel Grades, Properties, and Global Standards*, Outokumpu.
- *Chemical Composition Chart*, Benjamin Steel.
- NNDC Climate Data Online, Global Climate Station Summaries, Spirit of St. Louis Airport and Scott Air Force Base, January 1, 1982, to December 31, 2011, <https://gis.ncdc.noaa.gov/maps/ncei#app=cdo&cfg=isdsummaries&theme=isdsummaries>

Attachment A: Installation-Wide PM₁₀ Emission Units

Emission Unit	Description
North Crane Upper Pile	
EU1	Drop from north crane to dock
EU2	Drop from north crane to truck
EU3	Drop from dock front end loader to truck
EU4	Drop from truck to upper pile
EU5	Drop from pile front end loader to truck
EU6	Pile wind erosion
EU7	Front end loader vehicular activity
EU8	Truck haul roads
North Crane Lower Pile	
EU9	Drop from north crane to dock
EU10	Drop from north crane to truck
EU11	Drop from dock front end loader to truck
EU12	Drop from truck to lower pile
EU13	Drop from pile front end loader to truck
EU14	Pile wind erosion
EU15	Front end loader vehicular activity
EU16	Truck haul roads
South Crane	
EU17	Drop from south crane to dock
EU18	Drop from south crane to truck
EU19	Drop from dock front end loader to truck
EU20	Drop from truck to south pile
EU21	Drop from pile front end loader to truck
EU22	Pile wind erosion
EU23	Front end loader vehicular activity
EU24	Truck haul roads
Feed Products Crane	
EU25	Drop from feed products crane to hopper
EU26	Drop from hopper to drag conveyor
EU27	Drop from drag conveyor to belt conveyor
EU28	Drop from belt conveyor to railcar or truck
EU28A	Drop from feed products crane direct to truck
EU28B	Truck haul roads
Scrap Shipping	
EU29	Drop from truck to dock
EU30	Drop from truck to slide
EU31	Drop from front end loader to slide
EU32	Drop from slide to barge
EU33	Front end loader vehicular activity
EU34	Truck haul roads
Coil Receiving	
EU35	Front end loader / fork lift vehicular activity from dock to warehouse
EU36	Front end loader / fork lift vehicular activity from warehouse to truck
EU37	Truck haul roads

Attachment B: Issued PM₁₀ Composite Emission Factors

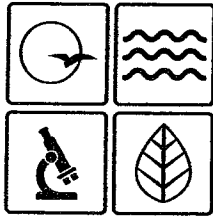
From barge, to truck, to exit. No placement on dock or pile. One drop point.									
Emission Factor Units	North Crane					South Crane			
	Magnetite	Salt	Blast Furnace Slag	Limestone	Fertilizer	Coal	Coke	Mulch	Fertilizer
lb PM ₁₀ / ton material	3.44E-03	1.22E-02	5.38E-03	3.95E-03	1.92E-02	4.03E-03	4.22E-03	3.90E-03	2.09E-02
From barge, to dock, to loader, to truck, to exit. Two drop points.									
Emission Factor Units	North Crane					South Crane			
lb PM ₁₀ / ton material	5.44E-03	2.29E-02	9.33E-03	6.47E-03	* N/A	5.68E-03	6.06E-03	5.41E-03	* N/A
From barge, to dock, to loader, to truck, to pile, to loader, to truck, to exit. Four drop points.									
Emission Factor Units	North Crane (lower pile)					South Crane			
lb PM ₁₀ / ton material	8.66E-03	4.36E-02	1.64E-02	1.07E-02	* N/A	8.99E-03	9.76E-03	8.46E-03	* N/A
Pile wind erosion (lb/acre/day)	21.25	3.61E-03	3.90E-01	5.77E-01	* N/A	1.66	1.77	6.06E-01	* N/A
Emission Factor Units	North Crane (upper pile)								
lb PM ₁₀ / ton material	1.21E-02	4.70E-02	1.98E-02	1.41E-02	* N/A				
Pile wind erosion (lb/acre/day)	21.25	3.61E-03	3.90E-01	5.77E-01	* N/A				
Feed Products Crane, magnesium oxide, monocalcium phosphate, feed grade urea fertilizer.									
lb PM ₁₀ / ton material to rail	5.53E-02		lb PM ₁₀ / ton material, via conveyors to truck	5.92E-02		lb PM ₁₀ / ton material, direct from barge to truck	2.09E-02		
Coil Receiving									
lb PM ₁₀ / ton material	9.64E-03								
Ship scrap from truck, to slide, to barge. No front end loader. Two drop points.									
lb PM ₁₀ / ton material	3.24E-03								
Ship scrap from truck, to dock, to loader, to slide, to barge. Three drop points.									
lb PM ₁₀ / ton material	5.10E-03								

*Fertilizer is not placed on the dock.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm.....	actual cubic feet per minute	MW	megawatt
BACT.....	Best Available Control Technology	MHDR.....	maximum hourly design rate
BMPs.....	Best Management Practices	MMBtu	Million British thermal units
Btu.....	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR.....	Code of Federal Regulations	NO _x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO ₂	carbon dioxide	NSR	New Source Review
CO ₂ e.....	carbon dioxide equivalent	PM.....	particulate matter
COMS.....	Continuous Opacity Monitoring System	PM _{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR.....	Code of State Regulations	PM ₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf.....	dry standard cubic feet	ppm	parts per million
EQ.....	Emission Inventory Questionnaire	PSD.....	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA.....	Environmental Protection Agency	RACT.....	Reasonable Available Control Technology
EU	Emission Unit	RAL.....	Risk Assessment Level
fps.....	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS.....	Safety Data Sheet
GHG.....	Greenhouse Gas	SIC.....	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL.....	Screening Model Action Levels
GWP	Global Warming Potential	SO _x	sulfur oxides
HAP.....	Hazardous Air Pollutant	SO ₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy.....	tons per year
lb.....	pound	VMT.....	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT.....	Maximum Achievable Control Technology		
µg/m ³	micrograms per cubic meter		



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

JUN 30 2017

Mr. Paul Wellhausen
Executive Vice President
SCF Lewis and Clark Terminals, LLC
2801 Rock Road
Granite City, IL 62040

RE: New Source Review Permit - Project Number: 2016-11-030

Dear Mr. Wellhausen:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.



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Mr. Paul Wellhausen
Page Two

If you have any questions regarding this permit, please do not hesitate to contact David Little, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Susan Heckenkamp
New Source Review Unit Chief

SH:dlj

Enclosures

c: St. Louis Regional Office
PAMS File: 2016-11-030

Permit Number: **06 2017 - 011**