



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: 122013-005

Project Number: 2013-10-068
Installation Number: 510-0468

Parent Company: Lange-Stegmann Company

Parent Company Address: 1 Angelica Street, St. Louis, MO 63147

Installation Name: Lange-Stegmann Company

Installation Address: 1 Angelica Street, St. Louis, MO 63147

Location Information: St. Louis City County, LG10052

Application for Authority to Construct was made for:

Installation of a new portable conveyor system to allow for loading of urea from railcars to an existing conveyor. This review was conducted in accordance with Section (5), 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.

DEC 17 2013

EFFECTIVE DATE


 DIRECTOR OR DESIGNEE
 DEPARTMENT OF NATURAL RESOURCES

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 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 Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' 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 sources(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 at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

Page No.	3
Permit No.	
Project No.	2013-10-068

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."

Lange-Stegmann Company
St. Louis City County,

1. PM₁₀ Emission Limitation
 - A. Lange-Stegmann Company shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period, from the new emission points, combined:
 - 1) Drop point from railcar to small portable conveyor (EP-10F1);
 - 2) Drop point from small portable conveyor onto large portable conveyor (EP-10F2) and
 - 3) Drop point from large portable conveyor to existing conveyor EP-10-S2 (EP-10-F3).
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A.
2. Control Device Requirement-Enclosure Hood
 - A. Lange-Stegmann Company shall enclose emission point EP-10-F3 to capture emissions from the drop point. The enclosure hood shall be constructed so that it completely encloses the drop point, does not contain aspiration points, and minimizes cross drafts.
 - B. Lange-Stegmann Company shall not emit any visible emissions from the enclosure hood.
 - C. Lange-Stegmann Company shall monitor and record the visible emission readings from the enclosure hood on a monthly basis.
3. Control Device Requirement-Baghouse
 - A. Lange-Stegmann Company shall control emissions from drop point EP-10-F3 using baghouse CD-7 as specified in the permit application.
 - B. The baghouse shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a

Page No.	4
Permit No.	
Project No.	2013-10-068

SPECIAL CONDITIONS:

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

gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.

- C. Replacement filters for the baghouse shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Lange-Stegmann Company shall monitor and record the operating pressure drop across the baghouse at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. Lange-Stegmann shall maintain a copy of the baghouse manufacturer's performance warranty on site.
 - F. Lange-Stegmann shall maintain an operating and maintenance log for the baghouse 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.
4. Record Keeping and Reporting Requirements
- A. Lange-Stegmann Company 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.
 - B. Lange-Stegmann Company 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 show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2013-10-068
Installation ID Number: 510-0468
Permit Number:

Lange-Stegmann Company
1 Angelica Street
St. Louis, MO 63147

Complete: October 28, 2013

Parent Company:
Lange-Stegmann Company
1 Angelica Street
St. Louis, MO 63147

St. Louis City County, LG10052

REVIEW SUMMARY

- Lange-Stegmann Company has applied for authority to install a new portable conveyor system (emission points EP-10-F1, EP-10-F2, and EP-10-F3) to allow for loading of urea from railcars onto an existing conveyor (EP-10-S2).
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation.
- None of the currently promulgated MACT regulations apply to the proposed equipment.
- A hood is used to enclose the transfer point EP-10-F3. There is a baghouse draw point on EP-10-S2 conveyor immediately after the drop point. There are no controls at emission points EP-10-F1 and EP-10-F2.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels. Potential emissions of PM and PM_{2.5} are indirectly conditioned below de minimis levels.
- This installation is located in St. Louis City, a nonattainment area for the 8-hour ozone standard and the PM_{2.5} standard and an attainment area for all other criteria pollutants.
- 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 and

fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are conditioned to de minimis levels.
- Emissions testing is not required for the equipment.
- Approval of this permit is recommended with special conditions.
- A modification to the existing Intermediate Operating Permit is currently under review. An updated application to include this new equipment is due within 90 days of the date of equipment startup.

INSTALLATION DESCRIPTION

Lange-Stegmann is located within the City of St. Louis, Missouri. The installation is considered a minor source for construction permitting purposes and currently holds an Intermediate Operating Permit. It is a wholesaler of bulk dry commodities such as urea, fertilizers, agralite, salt, corn, and liquid fertilizer. The installation may receive materials by barge, railroad, or truck. The dry materials are stored in the warehouse, storage domes, or in outdoor storage piles. The liquid fertilizer is stored in two 3 million gallon capacity storage tanks. Products are sent off site via railcar or truck. Koch Agronomic Services is located near Lange-Stegmann, however these installations are considered separate installations for permitting purposes.

The following New Source Review permits have been issued to Lange-Stegmann Company.

Table 1: Permit History

Permit Number	Description
98-12-080*	Washed stoker coal storage and transfer**
00-11-047*	Truck and railcar loading
042007-018	Fertilizer warehouse debottlenecking and granular urea reformulation plant

*Permits issued by City of St. Louis Air Pollution Control Program

**Equipment associated with this permit has been removed from site.

PROJECT DESCRIPTION

Lange-Stegmann Company proposes to construct a new portable conveyor system consisting of one small and one large portable conveyor. The new portable conveyor system will be located outside, and both conveyors are enclosed. Two of the drop points associated with this conveyor system are not enclosed, with the final drop point enclosed in a hood with a baghouse draw point on the receiving conveyor shortly after the drop point. The installation typically receives urea via barge. However, during episodes of low river levels, barges are not able to navigate the river. This project would enable the installation to receive urea product via railcar to ensure they have the ability to receive product even during low river levels.

Three new emission points result from the addition of this portable conveyor system.

The small portable conveyor will swing under railcars for urea receiving. Emission point EP-10-F1 is the transfer of urea from the railcar onto the small conveyor. The urea drops from the railcar into the hopper and onto the conveyor. Emission point EP-10-F2 is the transfer of material from the small portable conveyor to the large portable conveyor. The urea drops from the small conveyor into the hopper on the large conveyor. There are no enclosures or other control device at the first two drop points. These two emission points are considered fugitive. Emission point EP-10-F3 is the transfer of urea from the large portable conveyor to the existing conveyor EP-10-S2. This drop point is completely enclosed by a hood enclosure with a baghouse draw point located on EP-10-S2 immediately after the drop point. The draw point to the baghouse is named CD7A, but the baghouse itself is named is CD7.

The maximum hourly design rate (MHDR) of the new portable conveyor system is 300 tons/hr and it feeds existing conveyor EP-10-S2 which has a MHDR of 500 tons/hr, therefore there is no de-bottlenecking of operations.

The new portable conveyor system is owned by Koch Agronomic Services and is being leased by Lange-Stegmann. This construction permit authorizes the use of the portable conveyor system by Lange-Stegmann under the permitted conditions for the receiving of urea. The portable conveyor system is not permitted for any other use under this permit, either by Lange-Stegmann or Koch Agronomic Services. Koch Agronomic services has submitted an application containing this portable conveyor system for their use, see project #2013-11-011.

EMISSIONS/CONTROLS EVALUATION

Emission calculations are based on webFIRE SCC 30102709, bulk loading of ammonium nitrate, which provides an emission factor of 0.02 pounds PM and PM₁₀/ton of fertilizer for handling operations.. There are currently no EPA published emission factors for solid urea handling. While the conveyor will be used for urea, it is appropriate to use the emission factor for ammonium nitrate because they are both fertilizers and have similar physical characteristics. Based on engineering judgement, an estimated 25% of the PM₁₀ emission factor was used to calculate the PM_{2.5} potential emission from the fertilizer handling. A 90% capture efficiency and 99% control efficiency was given for the hood enclosure and baghouse CD7, based on engineering judgement and AP42, Appendix B.2, Table B.2-3.

The following table provides an emissions summary for this project. Previous permits contained errors in the calculation of potential emissions. However, conservative calculations indicate the potential emissions are less than the major source thresholds for all regulated pollutants. Existing actual emissions were taken from the installation's 2011 EIQ. Unconditioned potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year) and includes control devices. The conditioned project potential emissions includes the limitations found in this permit.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)*	Unconditioned Potential Emissions of the Application	Conditioned Project Potential Emissions
PM	25.0	<250	N/A	78.84	15
PM ₁₀	15.0	<250	11.69	78.84	<15
PM _{2.5}	10.0	<250	0.037	19.71	3.75
SOx	40.0	<250	0.012	N/A	N/D
NOx	40.0	<250	1.95	N/A	N/D
VOC	40.0	<250	0.11	N/A	N/D
CO	100.0	<250	1.64	N/A	N/D
GHG (CO ₂ e)	75,000 / 100,000	<75,000/< 100,000	N/A	N/A	N/D
GHG (mass)	100.0 / 250.0	<100/<250	N/A	N/A	N/D
HAPs	10.0/25.0	<10/<25	0.00	N/A	N/D

N/A = Not Applicable; N/D = Not Determined

*Lange-Stegmann used the reduced reporting option available under 10 CSR 10-6.110 for 2012 emissions. The last full EIQ was submitted for 2011 emissions, and those numbers appear in the table above. The 2011 EIQ also includes emissions generated from Koch Agronomic Services. The ACP Permit Section and Data Management Unit are working with Lange-Stegmann and Koch Agronomic Services to appropriately separate the equipment and emissions.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels. Potential emissions of PM and PM_{2.5} are indirectly conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Lange-Stegmann Company 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. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *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
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Nicole Weidenbenner, P.E.
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 17, 2013 , received October 28, 2013, designating Lange-Stegmann Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment A – PM₁₀ Compliance Worksheet

Lange-Stegmann Company
 St. Louis City County, LG10052
 Project Number: 2013-10-068
 Installation ID Number: 510-0468
 Permit Number: _____

This sheet covers the period from _____ to _____.
(month, year) (month, year)

Emission Point Description	(a)	(b)	(c)
	Monthly Throughput (tons)	Emission Factor (lb/ton)	Monthly PM ₁₀ Emissions (lbs)
EP-10-F1		0.02	
EP-10-F2		0.02	
EP-10-F3		0.002	
(d) Total Monthly PM₁₀ Emissions (lbs)			
(e) Total Monthly PM₁₀ Emissions (tons)			
(f) 12-Month PM₁₀ Emissions (h) from Previous Month's Attachment A (tons)			
(g) Total Monthly PM₁₀ Emissions (e) from Previous Year's Attachment A (tons)			
(h) Current 12-Month PM₁₀ Emissions (tons) (h) = [(e) + (f) – (g)]			

- (a) Record this month's throughput.
- (b) Emission Factor is the total emission factor of each process at this installation. The emission factor for point EP-10-F3 includes capture (90%) and control efficiencies (99%).
- (c) Multiply the Monthly Throughput (a) by the respective Emission Factor (b).
- (d) Sum each individual Monthly PM₁₀ Emissions.
- (e) Divide the Total Monthly PM₁₀ Emissions (d) by 2,000.
- (f) Record the 12-Month PM₁₀ Emissions (h) from the Previous Month's Attachment A.
- (g) Record the Total Monthly PM₁₀ Emissions (e) from the Previous Year's Attachment A.
- (h) Calculate the Current 12-Month PM₁₀ Emissions. A total less than **15.0 tons** indicates compliance.

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
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	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	PM₁₀	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	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Michael Stegmann
President
Lange-Stegmann Company
1 Angelica Street
St. Louis, MO 63147

RE: New Source Review Permit - Project Number: 2013-10-068

Dear Mr. Stegmann:

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, if any, 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, your new source review permit application and with your amended operating permit 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.

If you have any questions regarding this permit, please do not hesitate to contact Nicole Weidenbenner, P.E., 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:nwl

Enclosures

c: St. Louis Regional Office
PAMS File: 2013-10-068

Permit Number: