

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0106852

Owner: Mississippi Lime Company  
Address: 16147 US Highway 61, Ste. Genevieve, MO 63670

Continuing Authority: Same as above  
Address: Same as above

Facility Name: Mississippi Lime Company  
Facility Address: 16147 US Highway 61, Ste. Genevieve, MO 63670

Legal Description: See Page Two  
UTM Coordinates: See Page Two

Receiving Stream: See Page Two  
First Classified Stream and ID: See Page Two  
USGS Basin & Sub-watershed No.: See Page Two

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

**FACILITY DESCRIPTION**

See Pages Two (2) through Four (4) for facility description. Facility is underground mining and sizing of limestone with the production of calcium oxide, calcium hydroxide (lime manufacturing) and calcium based products.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

December 1, 2012  
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

December 31, 2016  
Expiration Date

John Madros, Director, Water Protection Program

**FACILITY DESCRIPTION** (continued):

Outfall #001 - SIC #1422

Underground limestone mine/pit dewatering/settling basin.  
UTM Coordinates: x = 758135; y = 4206712  
Legal Description: Landgrant #88, Ste. Genevieve Co.  
Receiving Stream: South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 13.7 MGD.  
Actual flow is 3.29 MGD.

Outfall #002 - SIC #3274

Storm water runoff from manufacturing area and railway area.  
UTM Coordinates: x= 757438; y= 4206971  
Legal Description: NE ¼, NW ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.  
Receiving Stream: South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 3.78 MGD.  
Actual flow is dependant on precipitation events.

Outfall #003 - SIC #3274

Storm water runoff from waste product disposal site.  
UTM Coordinates: x= 757077; y= 4206867  
Legal Description: SW ¼, NW ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.  
Receiving Stream: Unnamed tributary to South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 10.35 MGD.  
Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 1.45 MGD.

Outfall #004 - SIC #3274

Storm water runoff from manufacturing area, railway area, and waste product disposal site/settling basin/pH Neutralization.  
UTM Coordinates: x= 756961; y= 4206679  
Legal Description: Landgrant #3249, Ste. Genevieve Co.  
Receiving Stream: South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 7.4 MGD.  
Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 0.136 MGD.

Outfall #005 - SIC #3274

Storm water runoff from waste product disposal site. When pH is high, the facility pumps water to Outfall 004.  
UTM Coordinates: x=756151; y= 4205943  
Legal Description: Landgrant #3249, Ste. Genevieve Co.  
Receiving Stream: South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 3.0 MGD.  
Actual flow is dependant on precipitation events.

Outfall #006 - SIC #3274

Treated process water/holding basin/pumped to Outfall 009/reuse. Treated stormwater can be discharged from Outfall 010.  
UTM Coordinates: x=757674; y= 4206781  
Legal Description: SE ¼, NW ¼, Sec. 29, T38N, R09E, Ste. Genevieve Co.  
Receiving Stream: Unnamed tributary to South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 2.4 MGD. Actual flow is dependant on precipitation events. No discharges reported during the previous permit cycle.

**FACILITY DESCRIPTION** (continued):

Outfall #007 - SIC #3274

Emergency spillway-process water/tailings ponds/storm water runoff.

UTM Coordinates: x= 757648; y= 4206734

Legal Description: SE ¼, NW ¼, Sec. 29, T38N, R09E, Ste. Genevieve Co.

Receiving Stream: South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 16.8 MGD. Actual flow is dependant on precipitation events. No discharges reported during the previous permit cycle.

Outfall #008 – SIC #3274

No-discharge single cell sanitary lagoon/spray irrigation/sludge is retained in lagoon.

UTM Coordinates: x= 756988; y= 4206380

Legal Description: Landgrant #3249, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

USGS Basin & Sub-watershed No.: (07140101-0910)

Design population equivalent is 1,140 employees.

Design flow is 0.017 MGD (17,100 GPD).

Actual flow is 0.013 MGD (13,021 GPD).

Design sludge production is 1.46 dry tons/year.

Receiving Stream Watershed is a gaining stream setting.

Application rate is based on irrigation of secondary treated wastewater using a hydraulic loading rate.

Storage lagoon dimensions: 200 ft. x 55 ft. x 12 ft. depth.

Operating levels of storage lagoon are:

- Freeboard of two (2) foot above the emergency spillway;
- Maximum level of one (1) foot below overflow level; and
- Minimum level of two (2) feet above the lagoon bottom.

Operating storage capacity between minimum and maximum operating levels is 508,640 gallons and 95 days storage including 1-in-10 year storm water flows.

Irrigation design flow is 1,370 gallons/day; 500,050 gallons/year including 1-in-10 year storm water flows.

Application rates are: 0.2 inch/hour; 1.0 inch/day; 3.0 inches/week; 60 inches/year.

Irrigation site(s) are at total of 5.77 acres. Irrigation site(s) have field slopes less than 12% slope.

Vegetation grown on the irrigation site is grassland.

Irrigation equipment type is sprinklers.

**FACILITY DESCRIPTION** (continued):

Outfall #009 - SIC #3274

Partially treated process water/holding basin/evaporative cooling.  
UTM Coordinates: x= 756841; y= 4206446  
Legal Description: Landgrant #3249, Ste. Genevieve Co.  
Receiving Stream: Unnamed tributary to South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 3.6 MGD. Actual flow is dependant on precipitation events.

Outfall #010 - SIC #3274

Storm water from railway area. Also can receive treated stormwater flows from Outfall #006.  
UTM Coordinates: x= 758002; y= 4206751  
Legal Description: SW ¼, NE ¼, Sec. 29, T38N, R09E, Ste. Genevieve Co.  
Receiving Stream: Unnamed tributary to South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 1.61 MGD.  
Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 0.48 MGD.

Outfall #014 - SIC #4491

Storm water from barge loading facility.  
UTM Coordinates: x= 757490; y= 4209886  
Legal Description: Landgrant #3255, Ste. Genevieve Co.  
Receiving Stream: Mississippi River (P)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)  
Design flow is 0.22 MGD.  
Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 0.057 mgd.

Outfall #015 - SIC #1422

Underground limestone mine/pit dewatering/settling basin.  
UTM Coordinates: x= 756811; y = 4206699  
Legal Description: Landgrant #3249, Ste. Genevieve Co.  
Receiving Stream: Unnamed tributary to South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)

Outfall SM1 – In Stream Monitoring

UTM Coordinates: x= 756097; y= 4205892  
Legal Description: Landgrant #3249, Ste. Genevieve Co.  
Receiving Stream: South Gabouri Creek (U)  
First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))  
USGS Basin & Sub-watershed No.: (07140101-0910)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 5 of 18	
					PERMIT NUMBER: MO-0106852	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b><u>Outfall #001&amp;015 (Note 1, 2)</u></b>						
Flow	MGD	*		*	once/month	24 hr. total
Total Suspended Solids	mg/L	100		70	once/month	grab
pH – Units	SU	**		**	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2013</u> .						
<b><u>SMI – In-stream Monitoring</u></b>						
Hardness as CaCO <sub>3</sub>	mg/L	*		*	once/quarter****	grab
Chlorides	mg/L	*		*	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Outfall 001-Whole Effluent Toxicity (WET) test	% Survival	See Special Condition # 16			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2014</u> .						
<b><u>Outfall 002 – See Notes 4 &amp; 5, no limits, just Benchmarks</u></b>						
<b>INTERIM EFFLUENT LIMITS</b>						
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until November 30, 2015. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
<b><u>Outfall #003,004, 005 &amp;010 (Note 5)</u></b>						
Flow	MGD	*		*	once/month	24 hr. estimate
Settleable Solids	ml/L	2.5		1.5	once/month	grab
pH – Units	SU	***		***	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2013</u> .						

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

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PERMIT NUMBER: MO-0106852

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on December 1, 2015 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b><u>Outfall #003,004, 005 &amp;010</u></b> <b><u>(Note 5)</u></b>						
Flow	MGD	*		*	once/month	24 hr. estimate
Settleable Solids	ml/L	1.5		1.0	once/month	grab
pH – Units	SU	**		**	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JANUARY 28, 2016. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 7 of 18	
					PERMIT NUMBER: MO-0106852	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b>Outfall #004</b> Whole Effluent Toxicity (WET)	% Survival	See Special Condition # 16			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2014</u> .						
<b>Outfall #006, 007&amp;009 (Notes 6 &amp;7)</b>						
Flow	MGD	*		*	once/event	24 hr. estimate
Total Suspended Solids	mg/L	50		25	once/event	grab
pH – Units	SU	**		**	once/event	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>(the 28<sup>th</sup> of the next month after discharge)</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>Outfall #008- See Special Conditions #13-14 for conditions during emergency discharge (Note 8)</b>						
<b>Outfall #008- Land Application</b>						
Lagoon Freeboard	inches	*			once/month	measured
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	inches/acre	*			daily	total
Precipitation	inches	*			once/day	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2014</u> .						

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 8 of 18	
					PERMIT NUMBER: MO-0106852	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until November 30, 2015. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b><u>Outfall #014 (Note 9)</u></b>						
Flow	MGD	*		*	once/month	24 hr. estimate
Settleable Solids	mL/L	2.5		1.5	once/month	grab
pH	SU	***		***	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2013</u> .						
<b>FINAL EFFLUENT LIMITS FOR OUTFALL 014 IS BELOW</b>						
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective December 1, 2015 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/month	24 hr. estimate
Settleable Solids	mL/L	1.5		1.0	once/month	grab
pH – Units	SU	**		**	once/month	grab
Oil and Grease	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2016</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>PART I</u> STANDARD CONDITIONS DATED <u>OCTOBER 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)**

- \* Monitoring requirement only.
- \*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH
- \*\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-10.0 pH.
- \*\*\*\* See table below for quarterly sampling:

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

Note 1- For Outfalls #001 and #015, any untreated flow from a greater than 10-year, 24-hour rainfall event (5.1 inches) is exempt from pH limits, but not the other limits (40 CFR 436.22(b)).

Note 2- For Outfall #015, these limits will not be enforced until the department has received written notice from the permittee indication that activities will be initiated. See Section E. Schedule of Compliance for additional requirements on Outfall 015.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 4- For Outfall 002, see Special Condition #16.

Note 5- Storm water samples shall be collected within the first 60 minutes of storm events of 0.1 inches or greater, that result in a discharge. Storm events include rainfall as well as run-off from the melting of frozen precipitation.

Note 6- For Outfalls 006 and 009, the maximum volume of water discharged through Outfalls #006 and #009 shall not exceed the amount of stormwater introduced into the treatment plant, calculated on a geographical area basis. If no discharge occurs during a specific monthly reporting period, the accumulated volume of treated water must be discharged before the end of the following quarterly period. In addition to the foregoing, Mississippi Lime may discharge water from Outfall #009 in an amount equal to the volumes pumped to the "blue pool" directly from the underground mine. In all respects, effluent discharged from Outfalls #006 and #009 must meet the limits specified in the Table A for these outfalls.

Note 7- For Outfall 007, discharges may only occur after a 10- year, 24 hour storm event (5.1 inches).

Note 8- For Outfall #008, there shall be no discharge during normal operations up to and including the once in 10-year 24-hour storm event (5.1 inches). Wastewater shall be stored and land applied during suitable conditions so that there is no-discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10-year 365 day rainfall (54.0 inches) or the 25-year 24-hour storm event (5.8 inches). See Special Condition #15 for Land Application requirements.

Note 9- For Outfall 014 sampling shall be done once per month. If the area is flooded by the Mississippi River during the month, report "FLOODED" and the dates during which flooding conditions existed.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more protective than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances  
The permittee shall notify the Director as soon as it knows or has reason to believe:
  - (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) One hundred micrograms per liter (100 µg/L);
    - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
    - (4) The level established in Part A of the permit by the Director.
  - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
6. Water Quality Standards
  - (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
  - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
    - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
    - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
    - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
    - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
    - (5) There shall be no significant human health hazard from incidental contact with the water;
    - (6) There shall be no acute toxicity to livestock or wildlife watering;
    - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
    - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

C. SPECIAL CONDITIONS

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.
8. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.

The SWPPP must include the following:

- (a) An assessment of all storm water discharges associated with this facility. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
  - (b) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water. Minimum BMPs are listed in SPECIAL CONDITIONS #9 below.
  - (c) The SWPPP must include a schedule for monthly site inspections and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. The Department must be notified within fifteen (15) days by letter of any corrections of deficiencies. Deficiencies that consist of minor repairs or maintenance must be corrected within seven (7) days. Deficiencies that require additional time or installation of a treatment device to correct should be detailed in the written notification. Installation of a treatment device, such as an oil water separator, may require a construction permit. Inspection reports must be kept on site with the SWPPP. These must be made available to DNR personnel upon request.
  - (d) A provision for designating an individual to be responsible for environmental matters.
  - (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.
9. Permittee shall adhere to the following minimum Best Management Practices:
    - (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
    - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
    - (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
    - (d) Provide good housekeeping practices on the site to keep solid waste from entry into waters of the state.
    - (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.
  10. The purpose of the SWPPP and the BMPs listed therein is to prevent pollutants from entering waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR20-2.010(56)] of waters of the state, or failed to achieve compliance with benchmarks. Corrective action means the facility took steps to eliminate the deficiency.

C. SPECIAL CONDITIONS

11. Federal Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.
12. Biosolids Land Reclamation
  - (a) Biosolids may be land applied for land reclamation of lime waste piles in order to establish and maintain adequate vegetative ground cover for erosion control and water quality protection. The following limitations shall be followed:
    - (1) The biosolids project shall be conducted in accordance with the Sludge Management Plan for Biosolids Land Reclamation Project dated June 1998 and subsequent revisions approved by the department.
    - (2) Only Class A or B sewage sludge biosolids with low metals content and with more than 20 percent total solids content may be used. See permit Standard Conditions Part III, Water Quality Guides WQ 424-245 for requirements for biosolids class A and B, and low metals category. The permittee shall obtain certification from the biosolids generating facility that the biosolids meet this criteria before accepting transport of biosolids onto the Mississippi Lime Company site.
    - (3) Biosolids application rates shall not exceed a Plant Available Nitrogen (PAN) rate of 300 pounds per acre for a one time application rate for land reclamation. The actual application rate shall be adjusted each year based on the actual testing results for the biosolids delivered to the site. Testing results provided by the biosolids generator may be used. In no case, shall the annual biosolids application rate exceed 135 dry tons of biosolids per acre. After establishment of vegetation, additional biosolids may be added as needed not to exceed fertilizer application rates in accordance with permit Standard Conditions Part III.
    - (4) Other organic materials such as sawdust, yard waste compost, straw or other plant vegetation residues may be mixed with biosolids or directly land applied as needed for establishing of adequate soil organic matter for establishing and maintaining vegetative cover on the reclamation sites.
    - (5) Biosolids will be transported to the site and may be temporarily stored in bermed storage areas located on top of the lime tailing piles. Land application will occur as soon as practical to minimize storage time. A construction permit is not required for the temporary storage basins and the basins will be closed upon completion of the reclamation project.
    - (6) Storm water runoff from the land reclamation areas shall be monitored once per month for, pH, nitrate nitrogen as N, ammonia nitrogen as N, and Biochemical Oxygen Demand (BOD), until such time as three consecutive samples record concentration levels of 15 mg/L or less of BOD.
    - (7) An annual report on the land reclamation shall be submitted by January 28<sup>th</sup> of each year. The annual report shall include the amount and location of biosolids mixing and temporary storage sites, amount of biosolids and other materials that are land applied per acre, the number of acres and location map of each site, amount of PAN in pound per acre, method of land application, seed germination, vegetation type and response, daily precipitation received at the site, storm water runoff monitoring results, and biosolids testing results.
    - (8) Biosolids from the City of O'Fallon have been approved for use in the reclamation project. Other biosolids meeting the permit requirements may also be used.

C. SPECIAL CONDITIONS

13. Outfall 008: Emergency Discharge. Outfall 008 may only discharge if rainfall exceeds the 1 in 10 year (Data taken from the Missouri Climate Atlas) or the 24 hour, 25 year (Data taken from NRCS Urban Hydrology for Small Watersheds) rainfall events. **Discharge for any other reason shall constitute a permit violation and shall be recorded in accordance with Standard Conditions, Part 1, Section B.2.b.** Monitoring shall take place once per day while discharging. Test results are due on the 28<sup>th</sup> day of the month after the cessation of the discharge. Permittee shall monitor for the following constituents:

Constituent	Units
Flow	gpd
Biochemical Oxygen Demand <sub>5</sub>	mg/L
Total Suspended Solids	mg/l
Total Ammonia Nitrogen	mg/L
Temperature	°C
pH – Units	Standard Units
<i>Escherichia Coli</i>	#colonies/100 mL

14. Outfall 008: Wastewater Irrigation System
- (a) Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.
  - (b) Irrigation Design. Permittee shall operate the land application system in accordance with 10 CSR 20-8.020(15). Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:
  - (c) No-discharge System. When the Facility Description is “No-discharge”, wastewater must be stored and irrigated at appropriate times. There shall be no-discharge from the irrigation site or storage lagoon except due to precipitation exceeding either the 1-in-10 year rainfall event for the design storage period or the 25-year-24-hour rainfall event.
  - (d) Lagoon Operating Levels – No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one foot (1’) below the overflow point except due to any exceedance of the 1-in-10 year or 25-year-24-hour rainfall events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30<sup>th</sup>.
  - (e) Emergency Spillway. Lagoons and earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot (1’) below the top of berm. The department may waive the requirement for overflow structures on small existing basins.
  - (f) General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours.
  - (g) Saturated / Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions. There shall be no irrigation on days when more than 0.2 inches of precipitation is received or when there is observation by operator of an imminent or impending rainfall event.
  - (h) Buffer Zones. There shall be no irrigation within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwellings; or 50 feet of the property line.
  - (i) Public Access Restrictions. Public access shall not be allowed to the irrigation site(s). Fencing and public access restrictions to land application sites shall be in accordance with requirements in 10 CSR 20-8.020(15)(B)(5).
  - (j) Equipment Checks during Irrigation. The irrigation system and application site shall be visually inspected at least once per day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.
  - (k) Operation and Maintenance Manual. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. The O&M Manual shall be reviewed and updated at least every five years.

C. SPECIAL CONDITIONS

- (l) Nitrogen Loading Rates. Wastewater irrigation rates shall not exceed a nitrogen application rate of 100 pounds total nitrogen per acre per year. The calculation procedures are as follows: (Total N) x (0.226) x (inches per acre irrigated) = pounds total N per acre. Where Total N = [Total Kjeldahl Nitrogen (TKN) as N] + [Nitrate Nitrogen as N]. If the applied wastewater exceeds 100 pounds total nitrogen per acre/year or if the applied wastewater exceeds ten (10) mg/L of nitrate nitrogen as N, the permittee must reduce the application rates or submit a revised permit application to request use of the Plant Available Nitrogen (PAN) method based on crop nitrogen requirements for harvested crops.

15. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALLS	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001 & 004	100%	once/year	grab	Any

Dilution Series						
100% effluent	50% effluent	25% effluent	12.5% effluent	6.25% effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
  - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
  - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
  - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
  - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
  - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
  - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
  - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
  - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
  - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
  - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
  - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
  - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

C. SPECIAL CONDITIONS

- (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
- (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
- (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (4) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
- (5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (6) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (b) PASS/FAIL procedure and effluent limitations:
- (1) To pass a multiple-dilution test:
- (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC<sub>50</sub> concentration for the most sensitive of the test organisms; **OR**,
- (b) For facilities with an AEC greater than 30%, the LC<sub>50</sub> concentration must be greater than 100%; **AND**,
- (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required.
- (c) Test Conditions
- (1) Test Type: Acute Static non-renewal
- (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
- (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

C. SPECIAL CONDITIONS

- (6) Unless otherwise specified above, multiple-dilution tests will be run with:
  - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, ½ AEC and ¼ AEC;
  - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
  - (c) Reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

16. Outfall 002

- (a) Sampling and analysis of storm water discharges for Settleable Solids, pH and Oil & Grease shall occur monthly, while Chemical Oxygen Demand shall occur quarterly. The department may also require sampling and reporting as a result of illegal discharges, compliance issues, complaint investigations, or evidence of off site impacts from activities at the facility. If such an action is needed, the department will specify in writing the sampling requirements, including such information as location and extent. It is a violation of this permit to fail to comply with said written notification to sample.
- (b) This permit stipulates pollutant Benchmarks applicable to your discharge. The Benchmarks do not constitute direct numeric effluent limitations; a benchmark exceedance alone, therefore, is not a permit violation. Benchmark monitoring data are primarily for your use (and department’s use as described in #1, above) to determine the overall effectiveness of your SWPPP and to assist you in knowing when additional corrective action may be necessary to protect water quality. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce that pollutant in your storm water discharge(s). Failure to improve BMPs and achieve compliance with the Benchmarks is a permit violation. Exceedances believed to be the result of legacy chemical uses at the facility are not exempted from this requirement. Permittees are encouraged to contact the Department to formulate a plan for investigation and clean-up if legacy chemical uses are suspected to be the cause of exceedances.
- (c) The following Benchmarks are considered necessary to protect water quality. The BMPs at the facility should be designed to meet these benchmarks during rainfall events up to the 1-in-10 year, 24 hour rain event. At no time shall any discharge result in a violation of Water Quality Standards.

**Benchmarks Table**

<b>Parameter</b>	<b>Units</b>	<b>Benchmark</b>
Settleable Solids (monthly)	mL/L/hr	1.5
pH (monthly)	SU	6.5 – 9.0
Oil & Grease (monthly)	mg/L	10
Chemical Oxygen Demand (quarterly)	mg/L	*

- (d) If data becomes available that indicates existing water quality will be protected by alternative Benchmarks specific to this industry, the department will propose to incorporate those Benchmarks into this permit as part of a permit modification. Such data must be approved by the department as appropriate and representative before it can be considered.

D. Schedule of Compliance for Outfalls 003- 005, 010, and 014

1. The permittee shall comply with the Final Effluent Limitations Table A that shall become effective three (3) years from the effective date of this operating permit.
2. Within one (1) year of the effective date, the permittee shall submit an annual report to the Department's Southeast Regional Office on steps being taken to come into compliance with said Final Effluent Limits contained in Table A of this operating permit.
3. Within two (2) years of the effective date, the permittee shall submit an annual report to the Department's Southeast Regional Office on steps being taken to come into compliance with said Final Effluent Limits contained in Table A of this operating permit.

E. Schedule of Compliance for Outfall #015

1. One hundred eighty (180) days prior to planned start-up of operations, submit a construction permit application to the Central Office Engineering Section for construction.
2. Upon completion of construction, the permittee shall submit a Statement of Work Complete signed by the owner and a Professional Engineer that is registered in the state of Missouri
3. At that time, the permittee shall provide final UTM Coordinates and legal descriptions of the outfall, including how the information was obtained.

## SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more protective methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

### Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test acceptability criterion:	90% or greater survival in controls

### Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test Acceptability criterion:	90% or greater survival in controls

**Missouri Department of Natural Resources**  
**FACT SHEET**  
**FOR THE PURPOSE OF RENEWAL**  
**OF**  
**MO-0106852**  
**MISSISSIPPI LIME COMPANY**

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit. This Factsheet is for a Major , Industrial Facility .

**Part I – Facility Information**

Facility Type: IND  
Facility SIC Code(s): 3274, 1422, 4491

**Facility Description:**

Mississippi Lime has been in operation in Ste. Genevieve since the 1920's. The facility has multiple operations, including working in the underground limestone mine, as well as the production of calcium oxide, calcium hydroxide, and precipitated calcium carbonate. The Mississippi Lime Company currently mines limestone, calcines the limestone changing its physical and chemical characteristics to make chemical lime (calcium oxide), hydrates the calcium oxide to make calcium hydroxide, and further makes high quality pure calcium carbonate through the milk of lime process, and also makes crushed and pulverized limestone. The products and byproducts are transported to consumers by barge, rail and by truck throughout the country. The products produced are used in a variety of different industries, including water treatment plants, pharmaceuticals, and agriculture operations.

The mine area is known as the Mississippi Mine and the Peerless Mine. The mine is all one mine, not two separate mine. The Mississippi Mine is the older area of the mine, which there is not currently any mining going on in this section. In the Mississippi Mine section of the mine, equipment is stored, fueling operations and dewatering operations occur. The Peerless Mine is where the facility is currently mining and is further into the mine. Outfall 015 is planned to be in the Peerless Mine section of the mine, when they get farther into Peerless section. Appendix A contains an aerial map of the main facility and its outfalls. Appendix B contains a more detailed description of each outfall and the parts of the facility they serve.

The operations occurring fall under various effluent limit guidelines, due to the diversity of operations onsite. Outfalls #001 and 015 are subject to 40 CFR 432.20-22, crushed stone subcategory. Outfalls #006, 007, and 009 are process outfalls subject to 40 CFR 415 Inorganic Chemicals Manufacturing, specifically subsections 415.50-52 (calcium oxide production), 415.300-302 (calcium carbonate production), and 415.310-312 (calcium hydroxide production). Outfalls #002, 003-005, 010 and 014 are stormwater runoff outfalls that do not fall under categorical effluent limits. Effluent limits for the stormwater outfalls were developed using best professional judgment, water quality standards and what other Missouri stormwater permits have, such as limestone quarries and motor freight transportation general permits. Effluent limits for the categorical outfalls that are not covered in federal regulation are based on best professional judgment, water quality standards, and what similar facilities effluent limits are.

In the past the facility had problems with high pHs and high total suspended solids which at times affected South Gabouri Creek; however the facility has worked with the department to correct those problems. Over the last ten years, the facility has made a number of upgrades, including enclosing loading areas, adding settling basins to allow solids to settle out, adding pH neutralization, keeping emissions and dust down, started land reclamation on the existing tailing piles, enclosed slurry lines with steel casings and started placing tailings back into the mine to use to create roads underground and to use as fill in mined areas.

The facility recycles and reuses water throughout. Flows from the underground mine sump may be pumped to a holding basin for use in the scrubbers or pumped to the "blue pool" to be used in the kiln, hydration, and precipitation units. Also treated stormwater from outfall 006 maybe pumped to the "blue pool" for use in the kilns, hydration, and precipitation units.

Mississippi Lime has other permits from the department. From Water Resources Center, they have two permits (MO31951 and MO31955), having an area of 55 acres between the two dams. From the hazardous waste program, the facility is a small quantity generator (MOD006285001). The facility has an additional permit from Water Pollution Program for their underground injections (UI-0000009). From the air pollution program, the facility is considered a major facility (2918600001). Mississippi Lime is not required to have a mineral mining permit from Land Reclamation, because Land Reclamation regulations apply to above ground mining or underground coal mining, not underground limestone mining.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation? Yes- .

Settleable solids limits replaced total suspended solids limits at Outfalls #002 and #014. The majority of parameters added are quarterly monitoring only. By having quarterly monitoring, the department can perform a reasonable potential analysis on if effluent limits are appropriate in the future. Additional changes include allowing Outfall #005 to be pumped to Outfall 004 prior to discharge, if the pH is high to allow for the stormwater runoff to be treated with carbon dioxide to reduce the pH. For Outfall 001, pH limits were not allowed to be exceeded at anytime during the previous permit; however that did not conform to federal law 40 CFR 436.22(b), which allows pH limits to be exceeded if there is a precipitation event exceeding the 1- in- 25 year, 24 hour precipitation event. Also, Outfall 006 is treated stormwater, which can be discharged through Outfall 010. WET testing was reduced from Outfalls #001, #003-#005, and #010 to Outfalls #001 and #004. Monitoring frequency reduced from once/week to once/month for Outfalls #001-005, 010, and 014-015. Outfalls 006-009 monitoring requirements are upon discharge only.

Outfall #002 was changed from effluent limits to benchmarks. The facility constructed a large concrete basin in 2006 into the banks of South Gabori Creek, and installed an automatic 600 gallon per minute pumping system that transfers stormwater from the basin up to the sludge impoundments and 1500 gallon per minute diversion into the underground mine. This arrangement as intended to redirect all of the stormwater received during a majority of typical rain events, as well as the first flush of water received during the high-density short duration events, away from #002. The facility demonstrated in March 18-19, 2008 that the outfall can contain the 10 year, 24 hour storm event if the event is spread out over the day, not in a short time span. Besides the construction of the basin and the two pumping systems to divert water to other areas, Mississippi Lime has evaluated a number of options, including increasing flows into the mines through a larger hole, diverting flows, and chemically treating the stormwater. The options evaluated were considered unfeasible due to plant safety concerns, potential mine flooding issues, limited real estate available, location of utilities (above and sub-surface) and costs. The Outfall is land-locked between the railroad spur, the creek, and the utility power lines/easements. The use of benchmarks during this permit cycle will allow the facility and the department to see the effectiveness of the SWPPP and its BMPs in reducing settleable solids from the discharge. The permittee has data upstream of the plant showing that suspended solids coming into the plant property during rain events is higher than the permitted effluent limits. While the permittee proposed discharging based on a percentage of the suspended solids concentration in the stream, the department can not do that as it can not set effluent limits that could exceed the water quality standards or narrative criteria, just because the stream is naturally doing that.

Application Date: 11/06/2009  
Expiration Date: 05/05/2010  
Last Inspection: 06/05/2008 In Compliance

**OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	21.24	sedimentation	dewatering operations	3.00
002	5.89	sedimentation	stormwater run-off	3.52
003	16.04	sedimentation	stormwater run-off	3.83
004	16.04	sedimentation , neutralization, TOMCO system	stormwater run-off	3.85
005	4.65	settling basin	stormwater run-off	4.71
006	3.72	sedimentation and neutralization	process water, stormwater	3.30
007	26.04	sedimentation	process water, stormwater	3.40
008	0.02635	sedimentation	domestic waste	4.17
009	5.58	sedimentation and neutralization	process water, stormwater	4.06
010	2.50	sedimentation	stormwater run-off	3.08
014	0.341	BMPs	stormwater run-off	0.0
015		sedimentation	dewatering operations	

Outfall #001 -#015: See Appendix B for more descriptive information on the outfalls.

Receiving Water Body’s Water Quality & Facility Performance History:

Outfall effluent exceedances from 2005-2011:

- Outfall 002: TSS: 4/2005, 7/2005, 8/2005, 11/2005, 3/2006, 5/2006, 6/2006, 10/2006, 3/2008, 5/2008, 5/2009  
pH: 8/2005, 6/2006, 10/2006, 5/2007, 6/2007, 5/2008
- Outfall 004: pH: 10/2006; 2/2007; 8/2010
- Outfall 014: TSS: 2/2007, 9/2007, 3/2008, 4/2008, 4/2009  
pH: 2/2007; 9/2007

Comments:

Outfall 002 will have sulfate limits at renewal. There is chloride and hardness monitoring at SM1 during this permit period so we can set site specific sulfate limits at renewal.  
Outfalls 007 and 008 are not allowed to discharge unless there is a precipitation even exceeding the 1-in-10 year, 24 hour or 1- in-25 year, 24 hour storm event. Outfall 001’s pH limits are waived in precipitation events exceeding the 1-in-25 year, 24 hour event per 40 CFR 436.22(b), Below are the various precipitation amounts for Ste. Genevieve County from the Missouri Climate Atlas and the NRCS Urban Small Waters publications.

Storm Event	Rainfall Amount <sup>†</sup>
1-10 year, 24 hour rainfall	5.1”
1-in-10 year, 10 day rainfall	8.0”
1-in-10 year, 365 day rainfall amount	54”
1-10 year, rainfall –evaporation	23”
1-in-25 year, 24 hour rainfall	5.8”

<sup>†</sup>Data taken from Missouri Climate Atlas and NRCS Urban Small Waters

**Part II – Operator Certification Requirements**

- As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems.

Not Applicable : This facility is not required to have a certified operator.

**Part III – Receiving Stream Information**

**APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]:   
All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1<sup>st</sup> classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE:**

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Unnamed Tributaries to South Gabouri Creek	U	---	General Criteria	07140101-0910	Ozark/Apple/Joachim
South Gabouri Creek	U	---	General Criteria		
Mississippi River***	P	1707.03	AQL, DWS, IND, IRR, LWW, SCR, WBC(B)		

\* - Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cold Water Fishery (CDF), Cool Water Fishery(CLF), Drinking Water Supply (DWS), Groundwater (GRW), Industrial (IND), Irrigation (IRR), Livestock & Wildlife Watering (LWW), Secondary Contact Recreation (SCR), Whole Body Contact Recreation (WBC).

\*\* - Ecological Drainage Unit

\*\*\* - UAA conducted on 7/14/2005 with comments received showing WBC exists for the Mississippi River.

**RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:**

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed Tributaries to South Gabouri Creek (U)	0.0	0.0	0.0
South Gabouri Creek (U)	0.0	0.0	0.0
Mississippi River (P)*	53,000	60,443	70,000

\* Low flow values calculated from USGS Gaging Station 07020500 at Chester, IL, approximately 15 miles downstream from 01-11-1980 to 04-11-2011. The closest upstream flow data was from the USGS gaging station at St. Louis, approximately 60 miles upstream.

**RECEIVING STREAM MONITORING REQUIREMENTS:**

**Site SM1. (Upstream)**

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Chlorides	quarterly	grab	Upstream from outfall 005 UTM Coordinates: x= 756097; y= 4205892 Legal Description: Landgrant #3249, Ste. Genevieve Co.
Total Hardness as CaCO <sub>3</sub>	quarterly	grab	

**MIXING CONSIDERATIONS TABLE:**

**Outfalls #001- #010, #015**

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

**Outfall #014**

Mixing Zone: one-quarter (¼) of stream width, cross-sectional area, or volume of flow; length of one-quarter (¼) mile [10 CSR 20-7.031(4)(A)4.B.(III)(a)].

Zone of Initial Dilution: one-tenth (0.1) of the mixing zone width, cross-sectional area, or volume of flow and no more than ten (10) times the effluent design flow [10 CSR 20-7.031(4)(A)4.B.(III)(b)]. As flows are dependant on stormwater received, the maximum value from the permit application based on calculations is 0.341 cfs [0.341\*10=3.41 cfs].

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)...]		ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)...]	
7Q10	30Q10	1Q10	7Q10
15,111	17,500	3.41	3.41

**Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions**

**ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:**

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable : The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility. The facility is located near losing streams and in areas where sinkholes are present (see Appendix A for facility map).

**ANTI-BACKSLIDING:**

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as protective as the previous permit with some exceptions.

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44. WET testing was removed from Outfalls 003 and 005 as Outfall 004 discharges more consistently and is a representative discharge outfall for the stormwater runoff from the lime tailings area and production area. Outfall 005 can be pumped to Outfall 004 prior to discharge, if the pH or the settleable solids is too high to provide further treatment. Monitoring of flow, total suspended solids, settleable solids, and pH were reduced as the majority of the outfalls have not experienced an exceedance of effluent limits. For Outfall 001, pH limits were not allowed to be exceeded at anytime during the previous permit; however that did not conform to federal law 40 CFR 436.22(b), which allows pH limits to be exceeded if there is a precipitation event exceeding the 1- in- 25 year, 24 hour precipitation event.

Outfall #002 was changed from effluent limits to benchmarks. Besides the construction of the basin and the two pumping systems to divert water to other areas, Mississippi Lime has evaluated a number of options, including increasing flows into the mines through a larger hole, diverting flows, and chemically treating the stormwater. The options evaluated were considered unfeasible due to plant safety concerns, potential mine flooding issues, limited real estate available, location of utilities (above and sub-surface) and costs. The Outfall is land-locked between the railroad spur, the creek, and the utility power lines/easements. The use of benchmarks during this permit cycle will allow the facility and the department to see the effectiveness of the SWPPP and its BMPs in reducing TSS from the discharge. The permittee has data upstream of the plant showing that suspended solids coming into the plant property during rain events is higher than the permitted effluent limits. While the permittee proposed discharging based on a percentage of the suspended solids concentration in the stream, the department can not do that as it can not set effluent limits that could exceed the water quality standards or narrative criteria, just because the stream is naturally doing that.

**ANTIDegradation:**

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- New discharge. Outfall 015 is a new outfall. The establishment of Outfall 015 is to allow dewatering operations to occur closer to where mining activities are being conducted, rather than pumping water up to Outfall 001. Degradation is not expected on the stream, as with the establishment of Outfall 015, flows from Outfall 001 are expected to be reduced. The potential is present for load to increase in the stream; however this permit contains a reduction in total suspended solid concentrations from all outfalls. Total suspended solids are a narrative condition, which there is not a standard for. When the department made a site visit in April 2011, the stream appeared to be healthy and clear.

**AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:**

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

**BIOSOLIDS, SLUDGE, & SEWAGE SLUDGE:**

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Sludge/biosolids from the wastewater lagoon are stored in the lagoon.

- Permittee land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids management plan. The facility has an approved 1998 approved biosolids management plan to accept biosolids from different communities, including St. Mary's, and Ste. Genevieve to aid in land reclamation of lime piles. The facility is approved to receive biosolids from O' Fallon, but does not currently receive from them. Currently the facility receives approximately 700,000 gallons per year of biosolids and land applies once a year. Actual rate is 110 dry tons per year land applied in July by a contractor with a dry spreader. Currently all biosolids received are Class B. Biosolids are stored in earthen basins with a mixture of wood chips on top of a compacted lime subgrade until sufficient materials accumulate to land apply. The basins maintain a two foot freeboard.

**COMPLIANCE AND ENFORCEMENT:**

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable : The permittee/facility is not currently under Water Protection Program enforcement action. During the previous permit cycle, the facility was under enforcement action for a slurry line break and fish kill. As part of the settlement agreement, the slurry lines are now encased in a protective shell.

**PRETREATMENT PROGRAM:**

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)]. Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Not Applicable : The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

**REASONABLE POTENTIAL ANALYSIS (RPA):**

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard. In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable : A RPA was not conducted for this facility. As the majority of the outfalls are stormwater outfalls, reasonable potential could not be conducted. However, monitoring parameters were added based on the results of the expanded testing required for permit renewal. For each outfall, if the facility reported concentrations greater than half of the water quality standard (as of April 1, 2011), at a minimum quarterly monitoring was added to build point of comparison to see if water quality based effluent limits may be appropriate in the future.

**REMOVAL EFFICIENCY:**

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD<sub>5</sub>) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ [www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm](http://www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm).

Not Applicable : Influent monitoring is not being required to determine percent removal.

**SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):**

Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

Not Applicable : This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

**SCHEDULE OF COMPLIANCE (SOC):**

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable : This permit does contain a schedule of compliance to allow the facility time to make upgrades or change best management practices to meet lower pH effluent limits on Outfalls 003, and 005; settleable solids limits for Outfall 014; lower settleable solids requirements on Outfalls 003, 004, 005 and 010. The permittee has three years to be in compliance with the more protective effluent limits.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP):**

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable : A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan. As Mississippi Lime is a large complex facility, in the development of the SWPPP, they may want to use the draft SWPPP template provided by EPA and consult the Industrial Stormwater Fact Sheets developed by EPA (<http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm>) to ensure the SWPPP is as comprehensive as possible. The fact sheets include the [Sector J: Mineral Mining and Processing Facilities](#) and [Sector Q: Water Transportation Facilities](#). The fact sheets provide further references and resources for developing the SWPPP.

**VARIANCE:**

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable : This operating permit is not drafted under premises of a petition for variance.

**WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:**

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable : Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration  
C<sub>s</sub> = upstream concentration  
Q<sub>s</sub> = upstream flow  
C<sub>e</sub> = effluent concentration  
Q<sub>e</sub> = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID). Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

**WLA MODELING:**

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable : A WLA study was either not submitted or determined not applicable by Department staff.

**WATER QUALITY STANDARDS:**

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

**WHOLE EFFLUENT TOXICITY (WET) TEST:**

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable : Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by **all** facilities meeting the following criteria:

- Facility is a designated Major.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.

WET testing is required for Outfall 001, as it is the dewatering operations, and Outfall 004- stormwater runoff from lime area.

**40 CFR 122.41(M) - BYPASSES:**

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar.

- Not Applicable, this facility does not bypass.

**303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):**

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs. A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable : The Mississippi River is listed on the 2008 Missouri 303(d) List for lead.

- : This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of the Mississippi River.

**Part V – Effluent Limits Determination**

**Outfall #001 & 015 – Mine Dewatering Operations**

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	N	
pH	SU	1,2	**		**	Y	6.0-9.9
TSS	MG/L	1,2	100		70	Y	120/80
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.			N	
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.					Y	once/week

\* - Monitoring requirement only.  
 \*\* - pH shall not be averaged. pH shall be between 6.5-9.0 SU.  
 \*\*\* - Parameter not previously established in previous state operating permit.

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Effluent limitations from the previous state operating permit have been reassessed and lowered to be more in line with dewatering operations at other limestone operations. Effluent limits are higher due to the potential of groundwater impacting underground mine dewatering operations. Based on a review of discharge monitoring reports for the previous five years, the facility can meet the more protective TSS limits at this time, thus a schedule of compliance was not included. Monthly average= 70 mg/L, daily maximum = 100 mg/L.
- **pH.** Effluent limitations have been lowered from 6.0-9.9 SU to 6.5-9.0 SU per 10 CSR 20-7.015(8)(A)2. Based on a review of discharge monitoring reports for the previous five years, the facility can meet the more protective pH limits at this time, thus a schedule of compliance was not included.
- **Sulfate.** Monitoring only to determine if reasonable potential exists to exceed Water Quality Criteria. Based on the expanded testing results submitted with the permit renewal, more data is needed to determine if potential exists to exceed WQS. The results will be evaluated upon renewal to determine if reasonable potential exists.
- **Hardness as CaCO<sub>3</sub>.** Monitoring only as metal toxicity is hardness dependant.
- **WET Test.** WET Testing schedules and intervals are established in accordance with the Department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.
  - Acute
    - No less than **ONCE/YEAR:**
      - Facility is designated as a Major facility or has a design flow  $\geq$  1.0 MGD.
      - Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to unclassified streams are 100%, 50%, 25%, 12.5%, & 6.25%.

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been reduced from previous permit from once/week to once/month for flow, TSS, and pH. In review of the previous permit cycle's discharge monitoring reports, no violations of existing limits was reported.

**Outfall #002-Stormwater Runoff from parking lots and production areas. This outfall is being monitored with benchmarks.**

This outfall drains stormwater runoff from approximately fifty acres. During heavy rainfall events, the stormwater "first flush" (~20 to 30 min) is collected and sent to Outfall 001 or Outfall 007 for treatment. The exact duration depends on many variables including duration of rainfall, intensity of rainfall, time since last rainfall, temperature, and other factors. This permit will contain a site-specific Stormwater Pollution Prevention Plan, Best Management Practices, and Benchmarks to ensure that stormwater discharges from this facility are not causing negative impacts to the receiving stream and degrading the receiving stream's designated uses.

In addition to having a SWPPP with BMPs, the permittee will have Benchmarks. The Benchmarks below are common pollutant/parameters associated with storm water run-off. The concentration for each of the Benchmark pollutants below are based on concentrations needed to protect water quality and have been shown achievable by facilities utilizing applicable and appropriate SWPPP and BMPs.

**BENCHMARK TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	BENCHMARK	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		
CHEMICAL OXYGEN DEMAND	MG/L	2,9	*	Y	***
SETTLABLE SOLIDS	MG/L	2,9	1.5	Y	***
pH	SU	2	**	Y	6.0-9.0
OIL & GREASE (MG/L)	MG/L	2	10	Y	***
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.				

- \* - Monitoring requirement only.
- \*\* - pH shall not be averaged. pH shall be between 6.5-9.0 SU.
- \*\*\* - Parameter not previously established in previous state operating permit.

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #002- DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Chemical Oxygen Demand (COD).** Monitoring only. The expanded sampling submitted with the renewal had high chemical oxygen demand present. To determine if effluent limits are necessary, monitoring has been added to provide more data.
- **Settleable Solids.** Settleable Solids benchmark was added at the request of the permittee. The other stormwater outfalls at the facility have settleable solid effluent limits. Also, with settleable solids the facility can quickly determine if they are in compliance or not. Benchmark= 1.5 mL/L/hr.
- **pH.** Effluent limitations have been lowered from 6.0-10.0 SU to 6.5-9.0 SU per 10 CSR 20-7.015(8)(A)2.
- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been reduced from once/week to once/month for total suspended solids, pH and Oil and Grease. Quarterly monitoring is required for Chemical Oxygen Demand, Sulfate, Aluminum, and Copper. As this is a stormwater outfall from the production areas, weekly monitoring was not appropriate.

**Outfall #003,004,005, & 010- Stormwater Run-off from lime, tailings piles and coal storage areas**

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	N	
pH	SU	2	**		**	Y	6.0-10.0
SETTLABLE SOLIDS	ML/L/HR	2,9	1.5		1.0	Y	2.5/1.5
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.			Y	003,004,005, & 010
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.					Y	once/week

\* - Monitoring requirement only.

\*\* - pH shall not be averaged. pH shall be between 6.5-9.0 SU.

\*\*\* - Parameter not previously established in previous state operating permit.

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #003,004,005, AND 010 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
  - **Settleable Solids (SS).** Effluent limitations from the previous state operating permit have been reassessed and lowered using best professional judgment to be consistent with other stormwater permits issued in Missouri. The facility has a schedule of compliance for three (3) years to come into compliance with the more protective effluent limits. Monthly average = 1.0 mL/L/hr. Daily Maximum = 1.5 mL/L/hr.
  - **pH.** Effluent limitations have been lowered from 6.0-10.0 SU to 6.5-9.0 SU per 10 CSR 20-7.015(8)(A)2. The facility has a schedule of compliance for three (3) years to come into compliance with the more protective effluent limits.
  - **WET Test.** Outfall 004 has WET testing, as it is representative of the runoff from these outfalls. WET testing requirements for Outfalls 003, 005 and 010 have been removed for this permit cycle. WET Testing schedules and intervals are established in accordance with the Department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.
    - Acute
      - No less than **ONCE/YEAR:**
        - Facility is designated as a Major facility or has a design flow  $\geq$  1.0 MGD.
        - Facility has Water Quality-based effluent limitations for toxic substances (other than NH<sub>3</sub>).
- Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to unclassified streams are 100%, 50%, 25%, 12.5%, & 6.25%.
- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been reduced from once/week to once/month. As these are stormwater outfalls from the production areas, weekly monitoring was not appropriate. WET testing for Outfall 004 remains annually.

**Outfall #006,007 & 009- Production Outfalls**

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	N	
TSS	MG/L	1, 2	50		25	N	
pH	SU	1, 2	**		**	Y	6.0-9.0
OIL & GREASE (MG/L)	MG/L	2,9	15		10	Y	***
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.					N	

\* - Monitoring requirement only.

\*\* - pH shall not be averaged. pH shall be between 6.5-9.0 SU.

\*\*\* - Parameter not previously established in previous state operating permit.

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #006, 007 & 009 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **pH.** Effluent limitations have been restricted from 6.0-9.0 SU to 6.5-9.0 SU per 10 CSR 20-7.015(8)(A)2. The facility has a schedule of compliance for three (3) years to come into compliance with the more protective effluent limits.

**Outfall #008- Land Application of Domestic Wastewater, No-discharge lagoon**

Discharges from the emergency spillways of any of the lagoon facilities is allowed **only** if (1) rainfall exceeds the 1 in 10 year (5.1 inches) or the 24 hour, 25 year (Data taken from NRCS Urban Hydrology for Small Watersheds) rainfall events, and (2) if the lagoons are filled to the maximum level of the overflow structure and irrigation of the fields is not feasible or desirable.

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	N	
BOD <sub>5</sub>	MG/L	2	*		*	Y	
TSS	MG/L	2	*		*	Y	
pH	SU	2	*		*	Y	6.0-9.0
AMMONIA AS N	MG/L	2	*		*	Y	***
ESCHERICHIA COLI	***	2	*		*	Y	***
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.					N	

\* - Monitoring requirement only.

\*\*\* - Parameter not previously established in previous state operating permit.

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #008- DERIVATION AND DISCUSSION OF LIMITS:**

- **Emergency Discharges (Flow, Precipitation, Biochemical Oxygen Demand<sub>5</sub>, Total Suspended Solids, pH, Ammonia as N, Temperature, E. coli).** These parameters are being required daily during an emergency discharge event. Emergency discharge events are only allowed when the permittee can document a chronic rainfall period or catastrophic rainfall event and when the permittee can document that they were land applying when it was feasible. This is based on best professional judgment.
- **Escherichia coli (E. coli).** Effective June 30, 2010, E. Coli replaced Fecal Coliform as the indicator bacteria criteria.
- **Land application operational monitoring (Lagoon Freeboard, Irrigation Period, Volume Irrigated, Application Area, Application Rate, and Precipitation).** These parameters are standard monitoring parameters required in all no-discharge operating permits. These are being required to ensure the permittee is operating the facility properly and to ensure that emergency discharges are only when the facility has been adequately land applying when possible. This is based on best professional judgment.
  - **Lagoon Freeboard.** The vertical distance between the water level in the storage cell and the top of the lagoon berm shall be measured and reported in feet.
  - **Irrigation Period.** A written log shall be maintained of the approximate number of hours and minutes each day that the irrigation is conducted.
  - **Volume Irrigated.** The volume of water that is irrigated each day shall be monitored. This can either be a calculated or a measured volume. The method of determining the volume irrigated shall be reported.
  - **Application Area.** The land area in acres that is used each day for irrigating wastewater shall be determined and recorded in the written log.
  - **Application Rate.** The average rate of application in terms of inches per day shall be calculated and recorded. This can be determined by converting the gallons irrigated to cubic feet and then dividing that number by the number of square feet in the land application area. Application rates are: 0.2 inch/hour; 1.0 inch/day; 2.0 inches/week; 36 inches/year.
  - **Precipitation.** The daily precipitation in inches shall be determined and recorded either from a nearby weather station or from an on-site rain gauge, whichever is preferable. The collection of this data will help in determining compliance with emergency discharge requirements for Outfall 008, and for Outfalls 001, 006, 007 and 009.

**Outfall #014- Stormwater Runoff from Barge Loading Facility**

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNITS	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	N	
SETTLABLE SOLIDS	MG/L	2,9	1.5		1.0	Y	****
pH	SU	2	**		**	Y	6.0-9.0
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.					Y	once/week

\* - Monitoring requirement only.

\*\* - pH shall not be averaged. pH shall be between 6.5-9.0 SU.

\*\*\* - Parameter not previously established in previous state operating permit.

**Basis for Limitations Codes:**

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #014 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Settleable Solids.** Facility requested settleable solids limits for this outfall as this is a stormwater outfall and the other stormwater outfalls have settleable solids limits. Interim limits were set equal to the existing stormwater settleable solids limits. The facility has a schedule of compliance for three (3) years to come into compliance with the more protective effluent limits.
- **pH.** Effluent limitations have been lowered from 6.0-10.0 SU to 6.5-9.0 SU per 10 CSR 20-7.015(2)(A)2. The facility has a schedule of compliance for three (3) years to come into compliance with the more protective effluent limits.
- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been reduced from once/week to once/month. The facility has been in compliance with effluent limits since 2007. As this is a stormwater outfall from the barge loading facilities, weekly monitoring was not appropriate. Also as the discharge is directly into the Mississippi River, there are occasions when the area is flooded and the pipe is under water, which in that case the facility shall report flooded.

## **Part VI – Administrative Requirements**

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

### **PUBLIC NOTICE:**

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from August 17, 2012 to September 17, 2012. The Department received a comment letter from the permittee via e-mail on September 10, 2012. The letter contained 8 comments which addressed typographical errors in the permit. The corrections were made as requested.

**DATE OF FACT SHEET:** MAY 16, 2011, REVISED JULY 25, 2011

### **COMPLETED BY:**

LEASUE MEYERS, ENVIRONMENTAL ENGINEER II  
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### **MODIFIED SEPTEMBER 24, 2012, BY:**

ALAN MOREAU  
ENVIRONMENTAL SPECIALIST III  
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**Appendices**

**APPENDIX A: MAP**



## APPENDIX B: OUTFALL DESCRIPTIONS

### **OUTFALL 001:** Underground limestone mine/pit dewatering/incidental stormwater/settling basin. SIC #1422

Flow into the basin is almost continuous due to the infiltration of groundwater; however, the volume varies greatly due to the amount of precipitation received. Also receives overflow flows from Outfall 002 and any water from the underground injection areas covered under UI-0000009.

UTM Coordinates: x = 758135; y = 4206712

Legal Description: Landgrant #88, Ste. Genevieve Co.

Receiving Stream: South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 3.00 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 13.7 MGD. Actual flow is 3.29 MGD.

### **OUTFALL 002:** Storm water runoff from manufacturing area and railway area. SIC #3274

Drains approximately 54 acres of parking lots, roads, grass fields, comingled with stormwater from loading areas, rail yard and plant roofs. At 002, once the basin reaches a certain level, the pumps are turned on to pump stormwater to Outfall 001's settling basin or to Outfall 007's impoundment.

UTM Coordinates: x= 757438; y= 4206971

Legal Description: NE ¼, NW ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 3.52 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 3.78 MGD. Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 0.21 MGD.

### **OUTFALL 003:** Storm water runoff from the Mississippi Rotary Tailings pile. SIC #3274

Stormwater runoff from the Mississippi Rotary tailings pile may include any runoff from the application of biosolids on the tailings piles for land reclamation activities. There is a sedimentation basin to collect runoff. Drains approximately 177 acres. The biosolids are maintained in a holding basin throughout the year.

UTM Coordinates: x= 757077; y= 4206867

Legal Description: SW ¼, NW ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 3.83 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 10.35 MGD.

Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 1.45 MGD.

### **OUTFALL 004:** Stormwater runoff from production and loading areas. SIC #3274

Drains approximately 103 acres. Underground settling basin in the Mississippi Mine receives stormwater runoff from Peerless Rotary, Mississippi Vertical and Maerz Lime manufacturing areas, the inactive Peerless by-product storage area, loading areas, railway area, and the waste product disposal site. Outfall may receive flows from Outfall 005 that need further treatment to achieve pH effluent limits. Treatment includes underground settling basin in the Mississippi Mine followed by pH neutralization using the TOMCO system. The TOMCO system uses carbon dioxide to lower the pH.

UTM Coordinates: x= 756961; y= 4206679

Legal Description: Landgrant #3249, Ste. Genevieve Co.

Receiving Stream: South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 3.85 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 7.4 MGD. Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 0.136 MGD.

**OUTFALL 005:** Storm water runoff from waste product disposal site. SIC #3274

Drains approximately 43 acres. Stormwater runoff from the waste product disposal site/tailings pile and may include any runoff from the application of biosolids on the tailings piles for land reclamation activities. There is a sedimentation basin to collect runoff. Prior to discharge, if the pH is high, flows can be pumped to Outfall 004's holding impoundment for treatment by the TOMCO system.

UTM Coordinates: x=756151; y= 4205943

Legal Description: Landgrant #3249, Ste. Genevieve Co.

Receiving Stream: South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 4.71 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 3.0 MGD. Actual flow is dependant on precipitation events.

**OUTFALL 006:** Treated process water/holding basin/pumped to Outfall 009/reuse. Can flow to Outfall 010.

SIC #3274

UTM Coordinates: x=757674; y= 4206781

Legal Description: SE ¼, NW ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 3.30 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 2.4 MGD. Actual flow is dependant on precipitation events. No discharges reported during the previous permit cycle.

**OUTFALL 007:** Process water/tailings ponds/storm water runoff.

SIC #3274

UTM Coordinates: x= 757648; y= 4206734

Legal Description: SE ¼, NW ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 3.40 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 16.8 MGD. Actual flow is dependant on precipitation events. No discharges reported during the previous permit cycle.

40 CFR 415.50-53 is the effluent limit guideline for calcium oxide

40 CFR 415.310-312 is the effluent limit guideline for calcium hydroxide.

**OUTFALL 008:** No-discharge single cell sanitary lagoon/spray irrigation/sludge is retained in lagoon.

SIC #3274

UTM Coordinates: x= 756988; y= 4206380

Legal Description: Landgrant #3249, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 4.17 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design population equivalent is 1,140 employees.

Design flow is 0.017 MGD (17,100 GPD).

Actual flow is 0.012 MGD (12,000 GPD).

Design sludge production is 1.46 dry tons/year.

Receiving Stream Watershed is a gaining stream setting. Application rate is based on irrigation of secondary treated wastewater using a hydraulic loading rate. Storage lagoon dimensions: 200 ft. x 55 ft. x 12 ft. depth.

Operating levels of storage lagoon are:

Freeboard of two (2) foot above the emergency spillway;

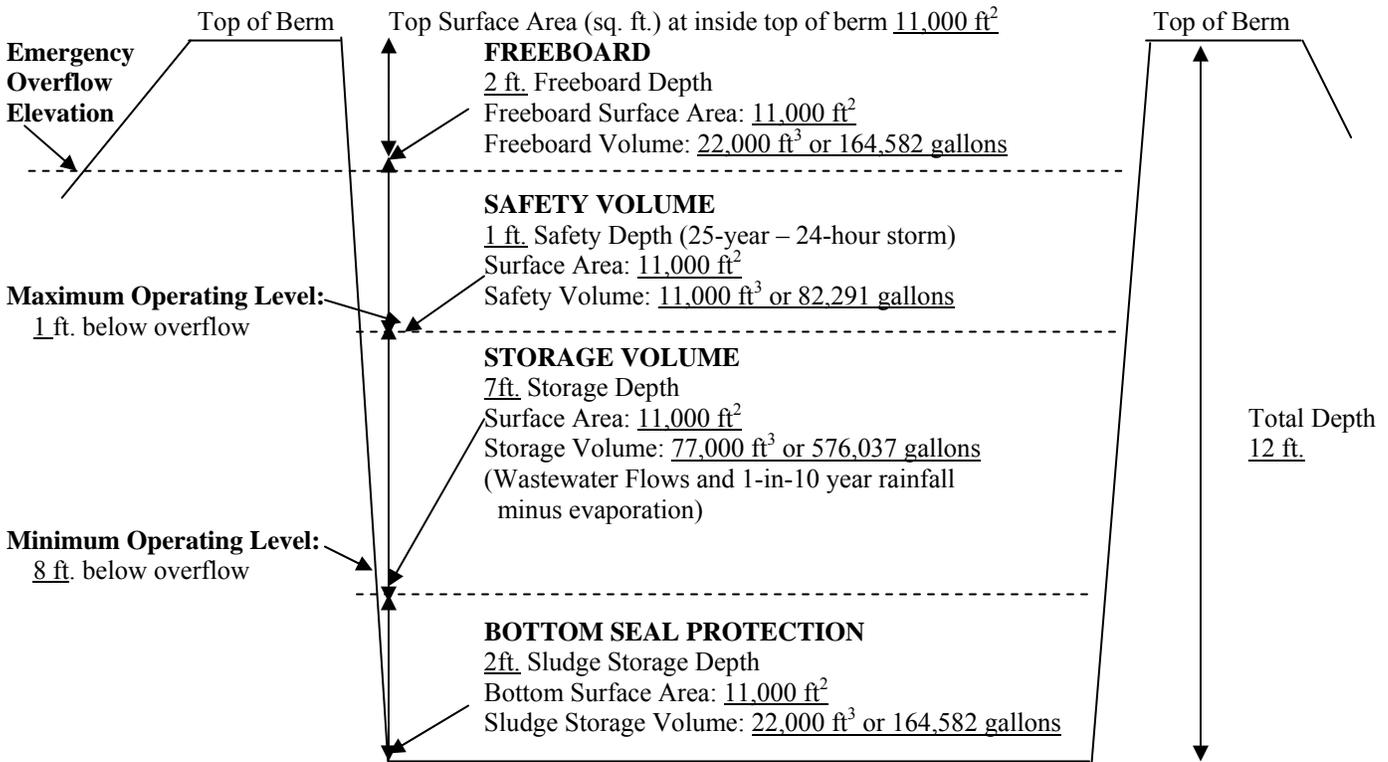
Maximum level of one (1) foot below overflow level; and

Minimum level of two (2) feet above the lagoon bottom.

Operating storage capacity between minimum and maximum operating levels is 576,037 gallons and 95 days storage including 1-in-10 year storm water flows.

**OUTFALL 008 (CONTINUED):**

Irrigation design flow is 1,370 gallons/day; 500,050 gallons/year including 1-in-10 year storm water flows. Application rates are: 0.2 inch/hour; 1.0 inch/day; 3.0 inches/week; 60 inches/year. Irrigation site(s) are at total of 5.77 acres. Irrigation site(s) have field slopes less than 12% slope. Vegetation grown on the irrigation site is grassland. Irrigation equipment type is sprinklers.



**OUTFALL 009:** Partially treated process water/holding basin/evaporative cooling/water reuse. SIC #3274

Blue Pool basin designed to be no-discharge. Facility pumps treated water from underground mine holding basin or 006 holding basin here to be mixed with water from the deep well to be reused throughout the facility in the kilns, hydration, and precipitation units. Facility can discharge water equal to the amount of non-process water it receives in Outfall 006 and 009 per 40 CFR 415. In review of discharge monitoring reports, only discharged twice during the last permit cycle in May 2008 and 2009.

UTM Coordinates: x= 756841; y= 4206446

Legal Description: Landgrant #3249, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 4.06 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 3.6 MGD. Actual flow is dependant on precipitation events.

**OUTFALL 010:** Storm water from railway area and coal storage area. May receive flows from Outfall 006. SIC #3274

UTM Coordinates: x= 758002; y= 4206751

Legal Description: SW ¼, NE ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

Distance to classified stream: 3.08 miles

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 1.61 MGD.

Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 0.48 MGD.

**OUTFALL 011: ELIMINATED IN 2000;**

Outfall closed in 1998. stormwater flows were routed to the treatment plant and the outfall was eliminated. Outfall 011 drained a small area adjacent to the Mississippi Rotary Glass Stone Plant.

UTM Coordinates: x= 758002; y= 4206751

Legal Description: SW ¼, NE ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

USGS Basin & Sub-watershed No.: (07140101-0910)

**OUTFALL 012: ELIMINATED IN 2005**

Outfall closed in 2001; Outfall 012 drained the area adjacent to the Peerless Rotary; however flows were rerouted and the outfall was eliminated.

UTM Coordinates: x= 758002; y= 4206751

Legal Description: SW ¼, NE ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

USGS Basin & Sub-watershed No.: (07140101-0910)

**OUTFALL 013: ELIMINATED IN 2005**

Outfall 013 was closed in 1999. flows were routed to other areas and the outfall was eliminated. Outfall 013 drained the area adjacent to Mississippi Vertical PCC and the Mississippi Vertical kilns.

UTM Coordinates: x= 758002; y= 4206751

Legal Description: SW ¼, NE ¼, Sec. 29, T29N, R09E, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

USGS Basin & Sub-watershed No.: (07140101-0910)

**OUTFALL 014:** Storm water from barge loading facility and railroad area.

SIC #4491

UTM Coordinates: x= 757490; y= 4209886

Legal Description: Landgrant #3255, Ste. Genevieve Co.

Receiving Stream: Mississippi River (P)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

USGS Basin & Sub-watershed No.: (07140101-0910)

Design flow is 0.22 MGD. Actual flow is dependant on precipitation events. Average flow during the previous permit cycle was 0.057mgd.

**OUTFALL 015: OUTFALL NOT CURRENTLY IN USE.** Underground limestone mine/pit dewatering/settling basin.SIC #1422

Activities at Outfall #015 have not yet begun. The effluent limitations at this outfall will not be enforced until construction of settling basin is complete and dewatering activities have been initiated. The permittee shall notify the department prior to start up. The effluent limitations will then become effective.

UTM Coordinates: x= 756811; y = 4206699

Legal Description: Landgrant #3249, Ste. Genevieve Co.

Receiving Stream: Unnamed tributary to South Gabouri Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.03) (303(d))

USGS Basin & Sub-watershed No.: (07140101-0910)