

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 Safe Drinking Water Act (Public Law 93-523, 93rd Congress) as amended,

Permit No. UI-0000009

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: Sec. 29, T38N, R9E, Ste. Genevieve County
UTM Coordinates: X= 757677; Y= 4207118 (front gate of facility)

Receiving Stream: Groundwater: see page 2
First Classified Stream and ID: Surface water: 8-20-13 MUDD V1.0 (C) (3960) (locally known as South Gabouri Creek)
USGS Basin & Sub-watershed No.: 07140101-0910

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

FACILITY DESCRIPTION

Underground Injection Control (UIC) - SIC #3274

Class V Injection Wells - mine backfill well. The permittee injects lime kiln dust, scrubber sludge, limestone and other waste material (mainly sorbent and lime waste) at various locations at this site. This permit authorizes injection of mine backfill of this material through Class V wells throughout the property.

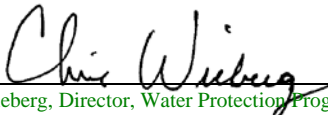
See page 2 for further details.

This permit authorizes only underground injection under the Missouri Clean Water Law and the Safe Drinking Water Act; it does not apply to other regulated areas. This permit may be appealed in accordance with Sections 640.013, 621.250, and 644.051.6 of the Law.

January 1, 2017 September 1, 2017
Effective Date Modification Date

December 31, 2021
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

This facility injects dry, damp, or slurry material from limestone and lime manufacturing byproducts, and stormwater into underground mine for disposal. The mine is located approximately 100-200 feet underground in solid limestone below the alluvial water table. Approximately 90,000 tons of limestone and byproducts are returned to the mine annually by truck. The trucking of waste material into the mine is not regulated by the federal UIC program; however, Missouri Clean Water Law regulates water quality of discharges to waters of the state for the protection of groundwater and drinking water. Therefore, this permit will cover that activity as well.

This permit does not authorize the surface discharge of any of the waste products described above. Surface discharge is covered under MSOP MO-0106852.

Groundwater Aquifers:

The following information describes the aquifers at and around the mine site. The site is located within a shallow carbonate aquifer. This is a karst area, allowing rapid movement of groundwater into and from these aquifers. The primary means of groundwater recharge is precipitation. The general groundwater flow direction in this area is from the southwest to the northeast (towards the Mississippi River). These are groundwater aquifers that require appropriate protections under this permit.

Mississippi River Alluvial Aquifer –

Approximately 100 feet thick. This alluvial aquifer is largely composed of silts, sands and clays. This aquifer serves as a public water supply for the city of Ste. Genevieve. This aquifer is down gradient from the Springfield Plateau Aquifer.

Springfield Plateau Aquifer –

Approximately 500 feet thick. This aquifer is composed of limestone and cherty limestone that contain small quantities of shale and sandstone. This is an adequate source for domestic and stock wells. This is the shallow aquifer that is most influenced by mining activities.

Ozark Aquifer –

Approximately 500 feet to 600 feet thick. This aquifer is composed primarily of dolomite with some sandstone, limestone, chert and small quantities of shale. This is the primary source of groundwater in southeastern Missouri and provides the water for most public supply wells. This is a deeper aquifer that is less influenced by mining activities, however fractures, joints, and solution cavities exist that may allow migration between aquifers.

St. Francis Aquifer –

Approximately 700 feet thick. This aquifer is composed primarily of sandstone and dolomite. This is a source for domestic, public water supply and stock wells. This is also a deeper aquifer that is less influenced by mining activities, however fractures, joints, and solution cavities exist that may allow migration between aquifers.

The information above was gathered from the *Geology and Hydrogeology of Mississippi Lime Company Complex Ste. Genevieve, Missouri* dated January 1996 and prepared by SCS Engineers on behalf of Mississippi Lime Company and information from the Missouri Geological Survey.

A. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I standard conditions dated August 1, 2014, and hereby incorporated as though fully set forth herein.

B. SPECIAL CONDITIONS

1. Surface discharge of process wastewater and stormwater is not authorized by this permit. In order to surface discharge, groundwater, wastewater or stormwater must be pumped to an outfall permitted under MSOP MO-0106825 and must be in compliance with all applicable conditions for the outfall listed in MSOP MO-0106825.
2. In accordance with 40 CFR 144.82, construction, maintenance, conversion, and plugging or closure of injection wells, or the operation of injection wells by the injection of dry, damp, or slurry material from limestone and lime manufacturing byproducts shall not cause movement of fluids containing any contaminant into Underground Sources of Drinking Water (USDWs), if the presence of any contaminant may cause a violation of primary drinking water standards or groundwater standards under 10 CSR 20-7.031, or other health based standards, or may otherwise adversely affect human health.
3. The permittee shall conduct regular inspections of the each injection well and the surrounding area to ensure the dry, damp, or slurry material from limestone and lime manufacturing byproducts are not being released into the environment and to ensure that no leaks of the injection wells occur which could release dry, damp, or slurry material from limestone and lime manufacturing byproducts into areas not intended to be injected into. The permittee shall keep record of these inspections and observations on site and available to a Department inspector upon request. In the event that deficiencies have occurred in and around the injection sites, the permittee must take corrective action to clean up spills and prevent future releases of dry, damp, or slurry material from limestone and lime manufacturing byproducts.
4. All active or new injection wells must be clearly marked in the field.
5. 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 Missouri Clean Water Law or the Safe Drinking Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent 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 Missouri Clean Water Law or the Safe Drinking Water Act when applicable.

6. Water Quality Standards

- (a) To the extent required by law, 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.

B. SPECIAL CONDITIONS (continued)

7. Changes in Discharges of Toxic Substances

In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

- (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, 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;
 - (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
 - (4) One milligram per liter (1 mg/L) for antimony;
 - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
 - (6) The notification level established by the department in accordance with 40 CFR 122.44(f).
- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/L);
 - (2) One milligram per liter (1 mg/L) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
 - (4) The level established by the Director in accordance with §122.44(f).

8. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

9. The permittee shall comply with all other applicable parts of 40 CFR Parts 144, 145, 146 147 and 148, 10 CSR 23-3, Missouri Clean Water Law, the Safe Drinking Water Act and all other State and Federal regulations regarding Underground Injection Control not specifically defined in the conditions above.

C. SCHEDULE OF COMPLIANCE

The facility is required to develop and implement a Groundwater Monitoring and Sampling Plan (GMASP) to monitor the groundwater around the mine to ensure injected material is not migrating into the aquifers. The following schedule has been granted to allow adequate time to develop the GMASP, install representative monitoring wells, and implement the GMASP.

- 1. Within six (6) months of the effective date of this permit, the permittee shall submit a workplan to the Water Protection Program for approval. This workplan shall detail what existing documentation will be used (meaning the geology and hydrogeology report from 1996) and any additional site characterization necessary to properly develop the GMASP. If additional site characterization is necessary, the permittee shall develop a workplan to conduct that site characterization in accordance with *Guidance for Conducting a Detailed Hydrogeologic Site Characterization and Designing a Groundwater Monitoring Program* issued by the Geological Survey Program, Environmental Geology Section, dated December 10, 2010. The purpose of the site characterization workplan will be to characterize groundwater flow outside the zone of influence created by the mine.
- 2. If additional site characterization is *not* required, within one (1) year of the effective date of this permit, the permittee shall submit a GMASP to the Water Protection Program for approval. The GMASP shall be developed in accordance with the guidelines contained in *Guidance for Conducting a Detailed Hydrogeologic Site Characterization and Designing a Groundwater Monitoring Program*.
- 3. If additional site characterization *is* required, within two (2) years of the effective date of this permit, the permittee shall submit a site characterization report, in accordance with the approved workplan, detailing the findings of the site characterization to the Water Protection Program for verification of conclusions.
- 4. Within three (3) years of the effective date of this permit, the permittee shall submit a GMASP to the Water Protection Program for approval. The GMASP shall be developed in accordance with the guidelines contained in *Guidance for Conducting a Detailed Hydrogeologic Site Characterization and Designing a Groundwater Monitoring Program*. The permittee shall also submit a permit modification request to include all groundwater monitoring wells associated with the GMASP in the permit. These wells will be subject to the sampling and reporting requirements listed in this permit.
- 5. Within four (4) years of the effective date of this permit, the permittee shall have all elements of the GMASP fully implemented.

D. SAMPLING AND REPORTING REQUIREMENTS

1. Once the GMSAP has been implemented, which is required by the 4th year of the effective date of this permit as mandated above in part C. Schedule of Compliance, the permittee shall collect quarterly samples from each groundwater monitoring well installed at the site. The following table contains the parameters required to be analyzed from the sample from each groundwater monitoring well.

GROUNDWATER MONITORING WELLS		TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
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 January 1, 2021 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
CONVENTIONAL						
Chemical Oxygen Demand	mg/L	*			once/quarter**	grab
Oil & Grease	mg/L	*			once/quarter**	grab
pH – Units	SU	*			once/quarter**	grab
Total Dissolved Solids	mg/L	*			once/quarter**	grab
OTHER						
Chloride	mg/L	*			once/quarter**	grab
Fluoride	mg/L	*			once/quarter**	grab
Nitrate plus Nitrite as N	mg/L	*			once/quarter**	grab
Phenol, total	µg/L	*			once/quarter**	grab
Sulfate	mg/L	*			once/quarter**	grab
METALS						
Aluminum, Total Recoverable	µg/L	*			once/quarter**	grab
Arsenic, Total Recoverable	µg/L	*			once/quarter**	grab
Barium, Total Recoverable	µg/L	*			once/quarter**	grab
Boron, Total Recoverable	µg/L	*			once/quarter**	grab
Cadmium, Total Recoverable	µg/L	*			once/quarter**	grab
Chromium, Total Recoverable	µg/L	*			once/quarter**	grab
Cobalt, Total Recoverable	µg/L	*			once/quarter**	grab
Copper, Total Recoverable	µg/L	*			once/quarter**	grab
Iron, Total Recoverable	µg/L	*			once/quarter**	grab
Lead, Total Recoverable	µg/L	*			once/quarter**	grab
Manganese, Total Recoverable	µg/L	*			once/quarter**	grab
Mercury, Total Recoverable	µg/L	*			once/quarter**	grab
Selenium, Total Recoverable	µg/L	*			once/quarter**	grab
Zinc, Total Recoverable	µg/L	*			once/quarter**	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2021</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

* Monitoring requirement only.

** See item 3 of the reporting requirements on page 5 for quarterly sampling and reporting requirements.

2. Effective on the 4th year of the permit, the permittee shall use the analytical results of the groundwater monitoring wells (Table A-1) to determine if the underground injection activity is causing migration of injected material that is resulting in exceedances of maximum contaminant levels (MCL's) or water quality standards (WQS's) for the protection of groundwater or drinking water. Depending on the results of the comparison, one of the following must occur:
- The permittee must cease the injection activity and take corrective action if:
 - The analytical results of the injection material are above the MCL's or WQS's, or are above the naturally occurring levels in the surrounding groundwater.
 - No further action is required and injection can proceed if:
 - The analytical results of the injection material are below MCL's or WQS's, and are below the naturally occurring levels in the surrounding groundwater.

The following list shows the MCL's or WQS's, whichever criterion is more stringent for each parameter, that should be used as target levels in this permit.

Parameter	Unit	MCL/WQS	Parameter	Unit	MCL/WQS
CONVENTIONAL					
Oil & Grease	mg/L	None	Total Dissolved Solids	mg/L	500
pH – Units	SU	6.5-8.5			
OTHER					
Chloride	mg/L	250	Phenol, total	µg/L	10
Fluoride	mg/L	4	Sulfate	mg/L	250
Nitrate plus Nitrite as N	mg/L	10			
METALS					
Aluminum, Total Recoverable	µg/L	50	Copper, Total Recoverable	µg/L	1,300
Arsenic, Total Recoverable	µg/L	50	Iron, Total Recoverable	µg/L	300
Barium, Total Recoverable	µg/L	2,000	Lead, Total Recoverable	µg/L	15
Boron, Total Recoverable	µg/L	2,000	Manganese, Total Recoverable	µg/L	50
Cadmium, Total Recoverable	µg/L	5	Mercury, Total Recoverable	µg/L	2
Chromium, Total Recoverable	µg/L	100	Selenium, Total Recoverable	µg/L	50
Cobalt, Total Recoverable	µg/L	1,000	Zinc, Total Recoverable	µg/L	5,000

3. For each injection well, the permittee shall record the amount of dry, damp, or slurry material from limestone and lime manufacturing byproducts injected into the mine. The permittee shall record this amount during each injection event in tons. The total amount of dry, damp, or slurry material from limestone and lime manufacturing byproducts injected into each well shall be submitted quarterly according to the table below.

AMOUNT OF MATERIAL INJECTED		TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
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 January 1, 2017 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Amount of Material Injected	tons	*			once/month	estimate
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2017</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

- * Monitoring requirement only.
** See below for quarterly sampling and reporting requirements.

Minimum Sampling and Reporting Requirements			
Quarter	Months	Effluent Parameters	Report is Due
First	January, February, March	Sample at least once during any month of the quarter	April 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

4. Report as no-injection when injection does not occur during the report period.
5. In accordance with 40 CFR 144.26, the permittee shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. The Class V Well Inventory Form can be requested from the Geological Survey Program or can be found at the following web address: <http://dnr.mo.gov/forms/780-1774-f.pdf>.

E. INJECTION WELL PROVISIONS

1. **Requirements prior to commencing injection:** A new injection well may not commence injection until construction is complete, and
 - (a) The permittee of a proposed new injection well has submitted plans for testing, drilling, and construction as part of the permit application. The submitted information must also include the Universal Transverse Mercator (UTM) coordinates for new injection or monitoring wells to be constructed. No construction may commence until a permit has been issued containing construction requirements (see §144.11).
 - (b) The permittee has constructed wells in accordance with the applicable sections of the Department's Well Construction Code, 10 CSR 23-3, in addition to applicable Federal well construction requirements listed in the Underground Injection Control regulations, 40 CFR 146, including but not limited to:
 - (1) The casing must extend from surface to within 5 feet of top of mine roof and must be made of steel or PVC plastic.
 - i. If using PVC casing, it must be at least schedule 40 and meet ASTM specification F480.
 - ii. If using steel casing, it must have a minimal wall thickness of 0.188 inches and a minimum weight of 13 pounds per foot.
 - (2) The annulus between casing and borehole wall must be grouted full length with neat cement via tremie or pressure method.
 - i. The cement grout is to be mixed at a ratio of 94 pounds of cement to not more than 6 gallons of water.
 - ii. If using bentonite grout, it may be in the form of chips, pellets or slurried with water at a ratio at least 20% bentonite.
 - (3) The borehole diameter must be 4 inches larger than casing diameter.
 - (4) Each well must have lockable protective surface completion.
 - (c) The permittee has submitted notice of completion of construction to the Department; and
 - (d)
 - (1) The Department has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or
 - (2) The permittee has not received notice from the Department of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in subsection (c) of this requirement, in which case prior inspection or review is waived and the permittee may commence injection. The Department shall include in the notice a reasonable time period in which the inspection will occur.
2. **Duty to establish and maintain mechanical integrity:**
 - (a) The permittee shall establish mechanical integrity prior to commencing injection or on a schedule determined by the Department. Thereafter the owner must maintain mechanical integrity as defined in §146.8 of 40 CFR Chapter I, including but not limited to:
 - (1) Ensuring no significant leaks in the casing, tubing or packing occur;
 - (2) Ensuring no significant fluid movement into USDW through vertical channels adjacent to the injection well bore.
 - (b) When the Department determines that a well lacks mechanical integrity pursuant to §146.8 of 40 CFR Chapter I, the permittee shall cease injection into the well within 48 hours of receipt of written notice from the Department. The Department may allow plugging of the well pursuant to Injection Well Provisions 4.(a) or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The permittee may resume injection upon written notification from the Director that the permittee has demonstrated mechanical integrity pursuant to §146.8 of 40 CFR Chapter I.
 - (c) The Department may allow the permittee of a well which lacks mechanical integrity pursuant to §146.8(a)(1) of 40 CFR Chapter I to continue or resume injection, if the permittee has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.
3. The permittee shall notify the Department at such times as the permit requires before conversion or abandonment of the well or in the case of area permits before closure of the project.

4. Requirements prior to abandoning wells:
 - (a) The permittee shall submit a well abandonment plan to the Water Protection Program, which contains at least the details to comply with the following abandonment requirements:
 - (1) The permittee shall close the well in a manner that prevents the movement of fluid containing any contaminant into an USDW, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 141 or may otherwise adversely affect the health of persons.
 - (2) If the Department has determined that the proposed well abandonment plan is not acceptable to the site, the permittee must grout the well full length with neat cement or bentonite.
 - (3) The permittee shall dispose of or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, State, and local regulations and requirements.
5. Plugging and abandonment report: Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the permittee shall submit a report to the Water Protection Program. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:
 - (a) A statement that the well was plugged in accordance with the plan previously submitted to the Water Protection Program; or
 - (b) Where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the regional administrator, specifying the differences.
6. After a cessation of operations the permittee shall plug and abandon the well in accordance with the plan unless the permittee:
 - (a) Provides a written notice to the Water Protection Program that the well will be used within the next two years; and
 - (b) Describes actions or procedures, satisfactory to the Water Protection Program, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Water Protection Program.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS
UI-0000009
MISSISSIPPI LIME COMPANY

This Statement of Basis (Statement) gives pertinent information regarding minor modification(s) to the above listed operating permit without the need for a public comment process. A Statement is not an enforceable part of a Missouri State Operating Permit.

Part I – Facility Information

Facility Type: Industrial
Facility SIC Code(s): 3274

Facility Description:
Underground Injection Control

Class V Injection Wells - mine backfill wells.

Part II – Modification Rationale

This operating permit is hereby modified to reflect removal of the special condition related to Electronic Discharge Monitoring Reports (eDMR). Currently, the eDMR system does not accept reports for non-NPDES permits. This permit has been issued under the authority of the Safe Drinking Water Act and Missouri Clean Water Law and the permittee cannot submit reports via the eDMR system at this time. There are no NPDES components to this permit and the federal NPDES regulations requiring use of eDMR do not apply to this permit. For this reason, the permit has been revised to remove the requirement to report via the eDMR system.

No other changes were made at this time.

Part III – 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.

DATE OF FACT SHEET: AUGUST 7, 2017

COMPLETED BY:

LOGAN COLE, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 751-5827
logan.cole@dnr.mo.gov

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF A NEW
UNDERGROUND INJECTION CONTROL PERMIT
FOR
MISSISSIPPI LIME COMPANY
UI-0000009

The Federal Public Health Service Act ("Safe Drinking Water Act" Title XIV; Public Law 93-523, as amended; 42 United State Code 300f *et seq.*) established the Underground Injection Control (UIC) permit program. This program regulates the discharge of pollutants into Underground Sources of Drinking Water (USDW). All such discharges are unlawful without a permit (Section 1424 of the "Safe Drinking 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 "Safe Drinking 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 [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 an Industrial Facility.

Part I – Facility Information

Facility Type: Industrial
Facility SIC Code(s): 3274

Facility Description:

Underground Injection Control

Class V Injection Wells - mine backfill wells.

This facility injects dry, damp, or slurry material from limestone and lime manufacturing byproducts, and stormwater into underground mine for disposal. The mine is located approximately 100-200 feet underground in solid limestone below the alluvial water table. Approximately 90,000 tons of limestone and byproducts are returned to the mine annually by truck.

This permit does not authorize the surface discharge of any of the waste products described above. Surface discharge is covered under MSOP MO-0106852, Outfall #001 and #015.

Underground injection includes nonhazardous, crushed limestone fines and screenings, lime kiln dust, sorbent, scrubber sludge, and off-specification lime products. The primary method of injecting materials, either dry or wet, is by boreholes into three areas of the abandoned mine. The facility separates the materials for injection by where in the plant the materials originate, i.e., one area is materials from kilns, one area is scrubber sludge and the third area is the lime/hydrate waste materials.

Lime kiln dust is one of the material byproducts being injected at this site. Lime kiln dust from the facility kiln stacks will be collected in a centrifuge, where the heavy particulate matter would be separated from the finer material. The fine lime kiln dust will be injected through a conduit into an inactive chamber of the underground mine. The fine kiln dust will be left to settle in this chamber. The remaining larger particles will be injected through a vertical stack to another portion of the inactive chamber or trucked into the mine.

The following discussion was copied from MSOP MO-0106852 for informational purposes.

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.

Mississippi Lime has other permits from the department. From Water Resources Center, they have two dam 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). From the Air Pollution Program, the facility is considered a major facility (2918600001). From the Water Protection Program, the facility has a NPDES permit for its process wastewater and stormwater (MO-0106852). Mississippi Lime is not required to have a mineral mining permit from the Land Reclamation Program, 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?

☒ - No.

Application Date: 11/05/2009
Expiration Date: 05/06/20015
Last Inspection: Not Applicable – no indication of site-inspection in files or database.

INJECTION WELL(S) TABLE:

INJECTION WELLS	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
Various [¥]	Dependent upon production volumes and waste generated	Underground Injection	Kiln dust, scrubber sludge, limestone and other byproducts (sor bent and lime)

¥ Currently, there are 19 lime kiln dust injection wells, 8 scrubber sludge injection wells, 31 limestone injection wells, and 2 other material injection wells.

Facility Performance History & Comments:

This facility also operates under the MSOP #MO-0106852, which is a site-specific process wastewater and stormwater permit. A site-inspection to determine the permittee's compliance with MSOP #MO-0106852 was conducted on May 11, 2011. The facility was found to be in compliance during the time of the inspection.

Currently, there is no performance history or evaluation of the underground injection operations at this site in the file or database. This part of the operation will be evaluated throughout this permit cycle.

Part II – Receiving Stream Information

Receiving Water Body's Water Quality

The site is located within a shallow carbonate aquifer. This is a karst area, allowing movement of groundwater to and from the Springfield Aquifer. The primary means of groundwater recharge is precipitation. The general groundwater flow in this area is from the southwest to the northeast (towards the alluvial aquifer and the Mississippi River). These are groundwater aquifers that require appropriate protections under this permit. For more information regarding the hydrogeology of the site, the Geology and Hydrogeology of Mississippi Lime Company Complex Ste. Genevieve, Missouri report dated January 1996 can be viewed upon request.

The tributary to South Gabouri Creek is not on the 2014 303(d) list of impaired waters and is not associated with a total maximum daily load (TMDL) assessment.

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 below listed 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)]: ☐
- Lake or Reservoir [10 CSR 20-7.015(3)]: ☐
- Losing [10 CSR 20-7.015(4)]: ☐
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
- Special Stream [10 CSR 20-7.015(6)]: ☐
- Subsurface Water [10 CSR 20-7.015(7)]: ☒
- 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 1st 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*
Groundwater	N/A	N/A	GEN, GRW, DWS, MCL
Surface water – South Gabouri Creek (8-20-13 MUDD V1.0)**	C	3960	AQL, HHP, IRR, LWW, SCR, WBC-B

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), General Criteria (GEN), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW), Maximum Contaminant Level (MCL) – Safe Drinking Water Act standards.

** - Waterbody included for information purposes. Mine dewatering that occurs in the chambers receiving injected material will be pumped for treatment and discharge through Outfall #001 or Outfall #015 in MSOP MO-0106852, which will discharge to South Gabouri Creek.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Groundwater	0.0	0.0	0.0

MIXING CONSIDERATIONS:

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)].

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time

Part III – 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.

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 stringent 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.

- ✓ The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).

BOD has been removed from the permit. This permit protects groundwater and underground sources of drinking water. BOD is an indicator parameter used to determine stream quality for aquatic life. High BOD levels correlate to low dissolved oxygen in streams and reduced oxygen available to aquatic life. Groundwater and underground sources of drinking water are protected for human consumption. BOD does not directly impact the ability for humans to consume water. Therefore, the permit writer has used best professional judgment to remove this parameter. Permit MO-0106852 protects surface waters.

Sulfide and sulfite have been removed from the permit. This permit protects groundwater and underground sources of drinking water. There are no minimum level concentrations or water quality standards for sulfide or sulfite in state regulations for the protection of groundwater or underground sources of drinking water. Because of this, there is no standard to base monitoring or limits on. Controls and best management practices do not have a contaminant level to reach as a goal for protection of groundwater or underground sources of drinking water. Therefore, it is the permit writer's best professional judgment to remove this parameter from the permit.

Final effluent limitations for oil and grease have been removed from the permit, and replaced with monitoring only. Again, this permit protects groundwater and underground sources of drinking water. There are no minimum level concentrations or water quality standards for protection of groundwater or underground sources of drinking water. The limits in the previous permit were derived from the chronic water quality standard for the protection of aquatic life, 10 mg/L. This was incorrectly used in the previous permit. There are no standards for protection of groundwater or underground sources of drinking water. Therefore, it is the permit writer's best professional judgment to remove effluent limitations for this parameter.

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.

☒ - Renewal no degradation proposed and no further review necessary.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). 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.

☒ Not applicable; This condition is not applicable to the permittee for this facility.

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.

INJECTION WELL CONSTRUCTION:

Injection Wells must be constructed in accordance with 40 CFR 144, 145, 146 and 147, the Department's Well Construction Code [10 CSR 23-3], and all site-specific construction requirements associated with Class V injection wells.

☒ Applicable; The permittee/facility shall comply with construction standards.

INJECTION WELL MECHANICAL INTEGRITY:

In accordance with 40 CFR 146.8, wells must be maintained to ensure mechanical integrity in order to prevent any leaks or cracks that could potentially introduce fluids into USDW, and must comply with all site-specific mechanical integrity requirements associated with Class V injection wells. Casing, tubing or packing must be reinforced or replaced upon discovery of any leaks. Evaluation of the mechanical integrity must be completed using one of the methods listed in 40 CFR 146.8(b) & (c).

☒ Applicable; The permittee/facility shall maintain the mechanical integrity of all injection wells.

INJECTION WELL PLUGGING AND ABANDONMENT:

In accordance with 40 CFR 144.51 and 144.58, wells must be plugged and abandoned properly to prevent fluid movement into USDW, and in accordance with all site-specific plugging and abandonment requirements associated with Class V injection wells. The permittee shall dispose of any contaminated soil, gravel, sand, sludge, liquids or other materials appropriately and in accordance with any applicable solid or hazardous waste regulations.

☒ Applicable; The permittee/facility shall comply with plugging and abandonment standards for all wells.

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.

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;

The permittee has been granted four years to develop and implement a Groundwater Monitoring and Sampling Plan (GMSAP). The permittee already has a detailed site characterization report from 1996 that fully covers the injection area. The GMSAP can be developed with that existing report or with addition site characterization as determined necessary by the permittee. The time given will allow the permittee to determine the best locations to install groundwater monitoring wells for determining the impact of the injection activity to the groundwater in and around the site. The department feels that four years provides adequate time to determine these locations and implement the monitoring program.

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.

☒ Not Applicable; At this time, the permittee is not required to develop and implement a SWPPP. MSOP MO-0106852 addresses stormwater management at the site.

SPILL REPORTING:

Per 10 CSR 24-3.010, any emergency involving a hazardous substance must be reported to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the Noncompliance Reporting requirement found in Standard Conditions Part I.

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.

☒ Not Applicable; Wasteload allocations were not calculated.

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.

☒ Not Applicable; At this time, the permittee is not required to conduct WET test for this facility.

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

☒ Not Applicable; This facility does not discharge to a 303(d) listed stream.

Part IV – Effluent Limits Determination

Groundwater Monitoring Wells and Injection Wells

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

In order to comply with the federal underground injection control requirements [40 CFR 144, 145, 146, and 146] authorized under the Safe Drinking Water Act and Missouri Clean Water Law, the permit writer has developed monitoring requirements to ensure compliance with all applicable maximum contaminant levels (MCL's) and water quality standards (WQS's) for the protection of drinking water supply (DWS) or groundwater (GRW). In order to provide the maximum protection to the aquifers in and around this site, and to comply with Missouri Clean Water Law [10 CSR 20-6.010(8)(A)8.], the most stringent requirement of the MCL's or WQS's will be implemented for each parameter in this permit. The derivation and discussion section below details the MCL and WQS for each parameter listed in the table.

GROUNDWATER MONITORING AND INJECTION MATERIAL SAMPLING REQUIREMENTS TABLE:

PARAMETERS	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	MONTHLY AVERAGE MAXIMUM	PREVIOUS PERMIT LIMITATIONS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
CONVENTIONAL								
OIL & GREASE	MG/L	1, 6	*		15/10	ONCE/QUARTER	ONCE/QUARTER	GRAB
pH	SU	1, 6	*		6.0-9.9	ONCE/QUARTER	ONCE/QUARTER	GRAB
TOTAL DISSOLVED SOLIDS	MG/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
OTHER								
CHLORIDE	MG/L	1, 6	*		*/*	ONCE/QUARTER	ONCE/QUARTER	GRAB
FLUORIDE	MG/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
NITRATE PLUS NITRITE AS N	MG/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
PHENOL, TOTAL	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
SULFATE	MG/L	1, 6	*		*/*	ONCE/QUARTER	ONCE/QUARTER	GRAB
METALS								
ALUMINUM, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
ARSENIC, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
BARIUM, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
BORON, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
CADMIUM, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
COBALT, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
COPPER, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
IRON, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
LEAD, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
MANGANESE, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
MERCURY, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
SELENIUM, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
ZINC, TOTAL RECOVERABLE	µg/L	1, 6	*		**	ONCE/QUARTER	ONCE/QUARTER	GRAB
AMOUNT OF MATERIAL INJECTED								
AMOUNT OF MATERIAL INJECTED	tons	6	*		**	ONCE/MONTH	ONCE/QUARTER	ESTIMATE

* - Monitoring requirement only

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

Basis for Limitations Codes:

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

DERIVATION AND DISCUSSION OF REPORTING REQUIREMENTS:

CONVENTIONAL:

Oil & Grease.

Monitoring only is included in this permit. MCL = none; WQS = none. The permit writer used best professional judgment to remove numeric effluent limitations for this parameter and replace with monitoring only. The injection material, being limestone and lime manufacturing byproduct, does not have reasonable potential to contain this parameter. The permittee reported < 5mg/L on the 2004, 2010, and 2011 annual reports required in the previous permit. Additionally, there are no MCL's or WQS's for this parameter.

pH

Monitoring only is included in this permit. MCL = 6.5-8.5 standard units; WQS = 6.5-9.0 standard units. The permit writer used best professional judgment to remove numeric effluent limitations for this parameter and replace with monitoring only. The permittee will be required to assess the pH in the surrounding groundwater through the GMSAP. This will dictate the pH range allowed for the injection material. The goal is to prevent alteration of natural conditions of the groundwater. The permittee reported a range of 7.6-12.4 SU for all the injection material on the permit application.

Total Dissolved Solids

Monitoring only is included in this permit. MCL = 500 mg/L; WQS = none. The permit writer used best professional judgment to add monitoring for this parameter. Underground sources of drinking water (USDW's) are defined primarily by the amount of dissolved solids in the groundwater. This parameter is important in determining if an aquifer is a USDW and for determining the degree of protection required to maintain that USDW for continued human consumption. Therefore, the permit writer has included monitoring for this parameter.

OTHER:

The permit writer used best professional judgment to add monitoring for the following parameters. These parameters are listed as contaminants in drinking water regulations, and have the same level as the WQS listed for protection of groundwater or drinking water, except for total phenol. The permit application also contained analytical data with values above the MCL or WQS for at least one of the types of injection material. This shows reasonable potential to cause contamination of the aquifers or USDW's in and around the injection site. For this reason, the permit writer has established monitoring of these parameters. The permittee shall compare background levels to levels after injection of material to determine impact on the groundwater.

Chloride

Monitoring only is included in this permit. MCL = 250 mg/L (actually secondary MCL); WQS = 250 mg/L for DWS. This parameter has been continued from the previous permit.

Fluoride

Monitoring only is included in this permit. MCL = 4 mg/L; WQS = 4 mg/L for DWS and GRW.

Nitrate plus Nitrite as N

Monitoring only is included in this permit. MCL = 10 mg/L; WQS = 10 mg/L for DWS and GRW.

Phenol, Total

Monitoring only is included in this permit. MCL = 10 µg/L; WQS = 100 µg/L for DWS and 300 µg/L GRW.

Sulfate

Monitoring only is included in this permit. MCL = 250 mg/L; WQS = 250 mg/L for DWS. This parameter has been continued from the previous permit.

METALS:

The permit writer used best professional judgment to add monitoring for the following metals. These metals are listed as contaminants in drinking water regulations, and have the same level as the WQS listed for protection of groundwater or drinking water, except for aluminum, boron, and cobalt. The permit application also contained analytical data with values above the MCL or WQS for at least one of the types of injection material. This shows reasonable potential to cause contamination of the aquifers or USDW's in and around the injection site. For this reason, the permit writer has established monitoring of these parameters. The permittee shall compare background levels to levels after injection of material to determine impact on the groundwater.

The application data shown below is in units of µg/L in order to compare to the MCL or WQS. However, the permittee actually reported the data in units of mg/kg. The permit writer converted the mg/kg to µg/L using ppm as the conversion unit. Thus, 1 mg/kg equals 1 ppm; and 1 ppm equals 1 mg/L; and finally 1 mg/L equals 1,000 µg/L.

Aluminum, Total Recoverable

Monitoring only is included in this permit. MCL = 50-200 µg/L; WQS = none.
Application data: 135,000 – 59,000,000 µg/L.

Arsenic, Total Recoverable

Monitoring only is included in this permit. MCL = 50 µg/L; WQS = 50 µg/L for DWS and GRW.
Application data: 17,100 µg/L.

Barium, Total Recoverable

Monitoring only is included in this permit. MCL = 2,000 µg/L; WQS = 2,000 µg/L for DWS and GRW.
Application data: 560,000 µg/L.

Boron, Total Recoverable

Monitoring only is included in this permit. MCL = none; WQS = 2,000 µg/L for GRW.
Application data: 2,300-600,000 µg/L.

Cadmium, Total Recoverable

Monitoring only is included in this permit. MCL = 5 µg/L; WQS = 5 µg/L for DWS and GRW.
Application data: 1,000-2,500 µg/L.

Chromium, Total Recoverable

Monitoring only is included in this permit. MCL = 100 µg/L; WQS = 100 µg/L for DWS and GRW.
Application data: 9,500-44,000 µg/L.

Cobalt, Total Recoverable

Monitoring only is included in this permit. MCL = none; WQS = 1,000 µg/L for GRW.
Application data: 7,500-21,000 µg/L.

Copper, Total Recoverable

Monitoring only is included in this permit. MCL = 1,300 µg/L; WQS = 1,300 µg/L for DWS and GRW.
Application data: 4,900-110,000 µg/L.

Iron, Total Recoverable

Monitoring only is included in this permit. MCL = 300 µg/L; WQS = 300 µg/L for GRW.
Application data: 288,000-24,000,000 µg/L.

Lead, Total Recoverable

Monitoring only is included in this permit. MCL = 15 µg/L; WQS = 15 µg/L for DWS and GRW.
Application data: 11,800-52,700 µg/L.

Manganese, Total Recoverable

Monitoring only is included in this permit. MCL = 50 µg/L; WQS = 50 µg/L for DWS and GRW.
Application data: 1,110,000-24,000,000 µg/L.

Mercury, Total Recoverable

Monitoring only is included in this permit. MCL = 2 µg/L; WQS = 2 µg/L for DWS and GRW.
Application data: 410 µg/L.

Selenium, Total Recoverable

Monitoring only is included in this permit. MCL = 50 µg/L; WQS = 50 µg/L for DWS and GRW.
Application data: 16,000 µg/L.

Zinc, Total Recoverable

Monitoring only is included in this permit. MCL = 5,000 µg/L; WQS = 5,000 µg/L for DWS and GRW.
Application data: 32,200-85,000 µg/L.

AMOUNT OF MATERIAL INJECTED:

Amount of Material Injected

Monitoring only requirement. Monitoring the amount of materials being injected will allow the permittee to better manage the activity and ensure materials are not being pushed beyond the injection boundaries of the mine.

SAMPLING AND REPORTING FREQUENCY AND SAMPLING TYPE:

Sampling Frequency Justification

Sampling and Reporting Frequency will be increased from once per year to once per quarter. More frequent sampling is required to better control the injection materials and volumes entering the mine cavities. This will also account for seasonal variations in groundwater elevations and flows. By monitoring on a quarterly basis, the permittee will be able to better control the injection and prevent any contamination of groundwater and USDW's in and around the site. The amount of material injected will be measured on a monthly basis. This is current practice for EPA requirements.

Sampling Type Justification

Sampling Type was retained from the previous permit. All other parameters will also be collected as grab samples. Due to the fact that it is an underground injection site, a grab sample will be practical while providing a representative sample of the injection material and the surrounding groundwater. The amount of material injected will be an estimate. The operation is a continuous flow through a conduit. Therefore, an estimate based on production will provide most representative data.

Part V– 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.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

- ✓ The permittee/facility is not currently using the eDMR data reporting system. The permittee shall submit an eDMR Permit Holder and Certifier Registration form within **60 days** of the effective date of this permit.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than three years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

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 began on January 22, 2016 and ended on February 22, 2016. No comments were received during the Public Notice period. The permit writer noticed an error in the permit. The permit did not require a permit modification requirement to include the groundwater monitoring wells as permitted features in the permit. This modification requirement is necessary so that the appropriate wells become subject to the sampling and reporting requirements listed in this permit. This new condition has prompted an additional Public Notice period. This Public Notice period began April 8, 2016 and ended May 9, 2016. No comments were received during this Public Notice period.

DATE OF FACT SHEET: MARCH 11, 2016

COMPLETED BY:

**LOGAN COLE, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 751-5827
logan.cole@dnr.mo.gov**



STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
 - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
 - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
 - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
 4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
 7. **Discharge Monitoring Reports.**
 - a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.
- b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A permittee with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
- a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- i. Violations of any terms or conditions of this permit or the law;
- ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
- iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- iv. Any reason set forth in the Law or Regulations.
- b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

RECEIVED

**Missouri Department of Natural Resources
WATER PROTECTION PROGRAM**
P.O. BOX 176, JEFFERSON CITY MO 65102
FORM UIC - APPLICATION FOR CLASS V PERMIT

NOV 06 2009

FOR AGENCY USE ONLY

CHECK NO

312240

DATE RECEIVED

AMOUNT RECEIVED

11/4/09

\$1500.00

(16)

PART A - DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTION
1.00 ACTION REQUESTED
☒ **OPERATING PERMIT RENEWAL APPLICATION**
2.00 FACILITY INFORMATION

FACILITY NAME

Mississippi Lime Company

TELEPHONE

573 883 4050

ADDRESS

16147 US Highway 61, Ste Genevieve, MO 63670

FAX NUMBER

573 883 4101

2.1 CONSTRUCTION PERMIT NUMBER IF APPLICABLE

2.2 OPERATING PERMIT NUMBER IF APPLICABLE

UIC -0000009 NPDES MO -0106852

2.3 FACILITY LOCATION (ATTACH A 1"-TOOO'SCALE USGS TOPOGRAPHIC MAP SHOWING LOCATION)

1/4 All 1/4 SEC 32 TWP 38 N RNG 9E

3.00 OWNER NAME

NAME

MISSISSIPPI LIME COMPANY

TELEPHONE

573 883 4050

ADDRESS

16147 US HIGHWAY 61, STE. GENEVIEVE, MO 63670

FAX NUMBER

573 883 4101

4.00 CONTINUING AUTHORITY INFORMATION

NAME

MISSISSIPPI LIME COMPANY

TELEPHONE

573 883 4050

ADDRESS

16147 US HIGHWAY 61, STE. GENEVIEVE, MO 63670

FAX NUMBER

573 883 4101

5.00 FACILITY CONTACT INFORMATION

NAME

Steve Castleberry

TITLE

Environmental Manager - P.G.

TELEPHONE

573 883 4059

6.00 GENERAL INFORMATION

 6.10 BRIEF DESCRIPTION OF PURPOSE OF INJECTION INCLUDE ANALYSES AND CONCENTRATION OF ANY POLLUTANTS TO BE REMIATED
(ATTACHE A SEPARATE SHEET IF NECESSARY)

 Emplacement of limestone and lime manufacturing byproducts in underground mine for reclamation.
Reduction of surface deposition of process waste for management of storm water runoff and fugitive emissions

6.20 BRIEF DESCRIPTION OF FACILITIES TO ACCOMPLISH INJECTION. ATTACHED A SIMPLIFIED GEOLOGIC CROSS SECTION SHOWING DEPTH TO BEDROCK, DEPTH TO AQUIFERS, AND DEPTH OF INJECTION. ALSO ATTACH MATERIAL SAFETY DATA SHEETS FOR EACH OF THE INJECTED MATERIALS IF INJECTION WELL IS TO BE CASED PROVIDE SCHEMATIC

This facility is an existing limestone mine that has been in operation for 85 years. The mine is accessible directly by dump truck or through large air ventilation holes from the surface. The mine is located approximately 100-200 feet underground in solid limestone well below the alluvial water table.

6.3 IF BIOLOGICAL AGENTS ARE TO BE INTRODUCED IN THIS PROCESS, A BIOLOGICAL PROFILE AND LITERATURE RESEARCH MUST BE SUBMITTED WITH THIS APPLICATION

☐ YES ☒ NONE

6.4 WILL THIS PROCESS INVOLVE A HAZARDOUS WASTE AS DEFINED IN 10CSR 25-4.010?

☐ YES ☒ NO

6.5 WILL THIS PROCESS RESULT IN DISCHARGE TO THE SURFACE WATER?

☐ YES ☒ NO

6.00 GENERAL INFORMATION**6.6 HOW MANY TOTAL POUNDS OF CHEMICALS OR BIOLOGIC MATERIALS WILL BE INJECTED?**

Approximately 90,000 tons of limestone and byproducts are returned to the mine annually by truck.

6.7 IF THIS INJECTION IS NOT AN AQUIFER, HOW WILL THE INJECTED CHEMICALS BE WITHDRAWN OR REDUCED TO INJECTION LEVELS?

There are no hazardous ingredients contained in the solid and semi-solid materials. Groundwater carrying sediment from the disposal areas collects in sumps. Discharges from the mine are monitored and discharged through a permitted NPDES outfall

6.8 IF THE CHEMICALS OR BIOLOGIC AGENTS TO BE INJECTED ARE ALREADY PRESENT IN THE GROUNDWATER, GIVE CONCENTRATIONS

CHEMICAL BIOLOGIC AGENT	PRE-INJECTION CONCENTRATION
NA	NA

7.0 OTHER WELL TYPES ON SITE

YES	NO	TYPE OF INJECTION WELL	NUMBER AT LOCATION	ACTIVE	INACTIVE PLUGGED	INACTIVE NOT PLUGGED
<input type="checkbox"/>	<input type="checkbox"/>	ABANDONED WATER WELL		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	AQUIFER RECHARGE WELL		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	AQUIFER REMEDIATION WELL		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	AUTOMOBILE SERVICE STATION DISPOSAL		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	GROUND SOURCE HEAT PUMP		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	IMPROVED SINK HOLE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	INDUSTRIAL DRAINAGE WELL		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MINE BACKFILL WELL	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	SEPTIC TANK WITH LATERAL FIELD (>20 PERSONS)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	OTHER		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7.1 WILL INJECTION WELL BE CASED? If yes a permit may be required from the Geological Survey and Resource Assessment Division

☒ ☐

Dry and wet materials may be injected into the mine from surface boreholes that are cased through overburden and into bedrock. Primary transfer method is via dump truck to abandoned mine area.

8.00 SIGNATURE INFORMATION

NAME & OFFICIAL TITLE (TYPE OR PRINT)

TELEPHONE NUMBER

Steve Castleberry - Env Manager/ Professional Geologist

573 883 4059

SIGNATURE



DATE SIGNED

10/26/09

9.0 DATA

9.1 THIS SECTION MUST BE COMPLETED IF INJECTION IS INTO AN AQUIFER. IT MUST BE COMPLETED PRIOR TO INJECTION. AT LEAST ONE ANALYSIS MUST BE PERFORMED FOR EACH POLLUTANT LISTED IF INJECTION IS NOT TO AN AQUIFER, SKIP AND GO TO PART 9.2

POLLUTANT	SOLIDS WASTE STREAM ANALYSIS					
	KILN DUST	SCRUBBER SLUDGE	SORBENT	LIME	LIMESTONE	Dry Units
Biochemical Oxygen Demand (BOD)	-1(Note)	1.7	-2	-1	2.5	mg/Kg
Chemical Oxygen Demand (COD)	30100	25900	7.4	16400	46400	mg/Kg
Total Organic Carbon (TOC)	2990	16000	NT	401	916	mg/Kg
Ammonia(as N)	NT	NT	59.2	NT	NT	mg/Kg
Flow (GPM/TPD)	-200	-200	-200	-200	-200	mg/Kg
Temperature (Winter)	20	20	20	20	15	C
Temperature (Summer)	20	20	20	20	20	C
pH (Minimum/Maximum)	8 - 12.4	8 - 12.4	12.22	8 - 12.4	7.60	SU

9.2 MARK "X" IN COLUMN (a) FOR EACH POLLUTANT YOU KNOW OF HAVE REASON TO BELIEVE IS PRESENT. MARK "X" IN COLUMN (b) FOR EACH POLLUTANT YOU BELIEVE TO BE ABSENT. IF YOU MARK COLUMN(a) FOR ANY [POLLUTANT YOU MUST PROVIDE THE RESULTS OF AT LEAST ONE ANALYSIS FOR THE POLLUTATN. COMPLETE ONE TABLE FOR EACH WELL. SEE THE INSTRUCTIONS FOR ADDITIONAL DETAILS AND REQUIREMENTS.

POLLUTANT AND CAS NO. (IF AVAILABLE)	SOLIDS WASTE STREAM ANALYSIS					
	KILN DUST	SCRUBBER SLUDGE	SORBENT	LIME	LIMESTONE	Dry Units
Bromide (24959-67-9)	-0.20	-0.20	12.0	-0.20	-0.20	mg/Kg
Chlorine (Total Residual)	-0.04	-0.04	NT	-0.04	-0.04	"
Color	Buff	Light Gray	NT	White	White	alpha
Coliform (Fecal)	-2	-2	NT	-2	-2	#/1.1L
Fluoride (16984-48-8)	7.12	3.87	34.1	0.672	2.19	mg/Kg
Nitrate/Nitrite (as N)	-0.10	-0.10	59.20	-0.10	0.54	mg/Kg
Nitrogen (Total Organic as N)	-200	-200	568	-200	-200	mg/Kg
Oil & Grease	-170	-170	-5	-170	-170	mg/Kg
Phosphorus (Ph Total) 7723-14-0	276.0	35.6	193	62.1	7.3	mg/Kg
Radioactivity Total Alpha	Believed to be at or below level of detection					pCi/L
Radioactivity Total Beta	"	"	"	"	"	"
Radioactivity Total Radium	"	"	"	"	"	"

NOTE (-) = Reported value < detection level

9.0 DATA CONTINUED

POLLUTANT AND CAS NO. (IF AVAILABLE)	SOLIDS WASTE STREAM ANALYSIS					
	KILN DUST	SCRUBBER SLUDGE	SORBENT	LIME	LIMESTONE	Dry Units
Sulfate (as SO ₄) 14808-79-8	15400	80.4	12.00	176	220	mg/Kg
Sulfide (as S)	156	3620	NT	<10	<10	"
Sulfite (as SO ₃)	23.2	33900	NT	-2	3.3	"
Surfactants	NT	NT	NT	NT	NT	"
Aluminum-Total	12600	2320	59000	730	135	"
Barium (Total)	-200	-200	560	-200	-200	"
Boron (Total)	140	55.8	600	2.3	2.5	"
Cobalt (Total)	7.5	-2	21	-2	-2.0	"
Iron (Total)	9000	1800	24000	576	288	"
Magnesium (Total)	2450	1110	24000	4450	2160	"
Molybdenum (Total)	12.0	3.87	7.00	-2	-2	"
Manganese (Total)	23.4	12.1	130	15.3	8.0	"
Tin (Total)	-100	-100	3.5	-100	-100	"
Titanium (Total)	773	161	3900	-100	-100	"

METALS, CYANIDE, & TOTAL PHENOLS

1M AntimonyTotal 7440-36-9	-2	-2	-2	-2	-2	mg/Kg
2M ArsenicTotal 7440-38-2	17.1	-2	-3	-2	-2	"
3M BerylliumTotal 744-41-7	1.8	-0.5	-0.2	-0.5	-0.5	"
4M CadmiumTotal 7440-43-9	2.3	1.0	2.5	1.1	1.0	"
5M ChromiumTotal 7440-47-3	24.1	9.5	44.0	26.5	14.6	"
6M CopperTotal 7550-50-8	18.5	4.9	110.0	12.3	8.2	"
7M LeadTotal 7439-97-6	52.7	11.8	14	15.6	16.4	"
8M Mercury7439-97-6	-0.10	-0.10	0.41	-0.10	-0.10	"
9M NickelTotal 7440-02-0	134	43.7	31	-5	-5.0	"
10M SeleniumTotal 7782-49-2	-4.0	-4.0	16.0	-4.0	-4.0	"
11M Silver (Ag)Total 7440-22-4	-0.50	-0.50	-0.30	-0.50	-0.50	"
12M ThalliumTotal 7440-28-0	-4	-4	-4	-4	-4	"
13M Zinc (Zn)7440-66-6	83.2	37.3	85	45.2	32.2	"
14M CyanideTotal 57-12-5	-1.0	-1.0	-1.0	-2.0	-1.0	"
15M PhenolsTotal	0.300	-0.250		-0.250	0.375	"

GC/MS FRACTION - VOLATILE COMPOUNDS

1V Acrolein107-02-8	Believed to be at or below level of detection					ug/Kg
2V Acrylonitrile107-13-1	"	"	"	"	"	"
3V Benzene71-43-2	"	"	"	"	"	"
4V Bis (Chloromethyl)Ether 542-88-1	"	"	"	"	"	"
5V Bromoform75-25-2	"	"	"	"	"	"
6V Carbon Tetrachloride56-23-5	"	"	"	"	"	"
7V Chlorobenzene108-90-7	"	"	"	"	"	"

NOTE (-) = Reported value < detection level

9.0 DATA CONTINUED

POLLUTANT AND CAS NO. (IF AVAILABLE)	SOLIDS WASTE STREAM ANALYSIS					
	KILN DUST	SCRUBBER SLUDGE	SORBENT	LIME	LIMESTONE	Dry Units
GC/MS FRACTION - VOLATILE COMPOUNDS						
8V Chlorodibromo-methane 124-48-1	<i>Believed to be at or below level of detection</i>					ug/Kg
9V Chloroethane75-00-3	"	"	"	"	"	"
10V 2-ChloroethylvinylEther 110-75-8	"	"	"	"	"	"
11V Chloroform67-66-3	"	"	"	"	"	"
12V Dichlorobromomethane 75-27-4	"	"	"	"	"	"
13VDichlorodifluoromethane 75-71-8	"	"	"	"	"	"
14V 1,1-Dichloroethane75-34-3	"	"	"	"	"	"
15V 1,2-Dichlorethane107-06-2	"	"	"	"	"	"
16V 1,2-Dichloroethylene 75-35-4	"	"	"	"	"	"
17V 1,2-Dichloropropane78-87-5	"	"	"	"	"	"
18V 1,2-Dichloropro-pylene 542-75-6	"	"	"	"	"	"
19V Ethylbenzene100-41-4	"	"	"	"	"	"
20V Methyl Bromide74-83-9	"	"	"	"	"	"
21V Methyl Chloride74-87-3	"	"	"	"	"	"
22V Methylene Chloride75-09-2	"	"	"	"	"	"
23V 1,1,2,2-Tetrachloro-ethane 79-34-5	"	"	"	"	"	"
24V Tetrachlorethylene127-18-4	"	"	"	"	"	"
25V Toluene108-88-3	"	"	"	"	"	"
26V 1,2-Trans Dichloro-ethylene 156-60-5	"	"	"	"	"	"
27V 1,1,1-Trichloro-ethane 71-55-6	"	"	"	"	"	"
28V 1,1,2- Trichloro-ethane 79-00-5	"	"	"	"	"	"
29V Trichloroethylene79-01-6	"	"	"	"	"	"
30V Trichlorofluoro-methane 75-69-4	"	"	"	"	"	"
31V Vinyl Chloride75-01-04	"	"	"	"	"	"
GC/MS FRACTION - ACID COMPOUNDS						
1A 2-Chlorophenol95-57-8	<i>Believed to be at or below level of detection</i>					ug/Kg
2A 2,4-Dichloro-phenol 120-83-2	"	"	"	"	"	"
3A 2,4-Dimethyl-phenol 105-67-9	"	"	"	"	"	"
4A 4,6-Dinitro-O-Cresol 534-52-1	"	"	"	"	"	"
5A 2,4-Dinitro-phenol 51-28-5	"	"	"	"	"	"
6A 2-Nitrophenol88-75-5	"	"	"	"	"	"
7A 4-Nitrophenol100-02-7	"	"	"	"	"	"
8A P-Chloro-M-Cresol 59-50-7	"	"	"	"	"	"
9A Pentachlorophenol 87-86-5	"	"	"	"	"	"
10A Phenol108-95-2	"	"	"	"	"	"
11A 2,4,6-Trichlorophenol 88-06-02	"	"	"	"	"	"
NOTE (-) = Reported value < detection level						

9.0 DATA CONTINUED

POLLUTANT AND CAS NO. (IF AVAILABLE)	SOLIDS WASTE STREAM ANALYSIS					
	KILN DUST	SCRUBBER SLUDGE	SORBENT	LIME	LIMESTONE	Dry Units
GC/MS FRACTION - BASENEUTRAL COMPOUNDS						
1B Acenaphthene83-32-9	<i>Believed to be at or below level of detection</i>					ug/Kg
2B Acenaphthylene208-96-8	"	"	"	"	"	"
3B Anthracene120-12-7	"	"	"	"	"	"
4B Benzidine92-87-5	"	"	"	"	"	"
5B Benzo (a) Anthracene 56-55-3	"	"	"	"	"	"
6B Benzo (a) Pyrene 50-32-8	"	"	"	"	"	"
7B 3,4-Benzofluoro-anthene 205-99-2	"	"	"	"	"	"
8B Benzo (ghi)Perylene 191-24-2	"	"	"	"	"	"
9B Benzo (k) Fluor-anthene 207-08-9	"	"	"	"	"	"
10B Bis (2-Chloroethoxy)Methane 111-91-1	"	"	"	"	"	"
11B Bis (2-Chloroethyl)Ether 111-44-4	"	"	"	"	"	"
12B Bis (2-Chloroisopropyl)Ether 39638-32-9	"	"	"	"	"	"
13B Bis (2-Ethylhexyl)Phthalate 117-81-7	"	"	"	"	"	"
14B 4-BromophenylPhenyl Ether 101-55-3	"	"	"	"	"	"
15B Butyl BenzylPhthalate 85-68-7	"	"	"	"	"	"
16B 2-Chloronaphthalene91-58-7	"	"	"	"	"	"
17B 4-ChlorophenylPhenyl Ether 7005-72-3	"	"	"	"	"	"
18B Chrysene218-01-9	"	"	"	"	"	"
19B Dibenzo (a,h)Anthracene 53-70-3	"	"	"	"	"	"
20B 1,2-Dichlorobenzene95-50-1	"	"	"	"	"	"
21B 1,3-Dichlorobenzene541-73-1	"	"	"	"	"	"
22B 1,4-Dichlorobenzene106-46-7	"	"	"	"	"	"
23B 3,3'-Dichlorobenzene91-94-1	"	"	"	"	"	"
24B Diethyl Phthalate84-66-2	"	"	"	"	"	"
25B Dimethyl Phthalate131-11-3	"	"	"	"	"	"
26B Di-N-butyl Phthalate84-74-2	"	"	"	"	"	"
27B 2,4-Dinitrotoluene121-14-2	"	"	"	"	"	"
28B 2,6-Dinitrotoluene606-20-2	"	"	"	"	"	"
29B Di-N-Octyl Phthalate117-84-0	"	"	"	"	"	"
30B 1,2-Diphenylhydrazine(as Azobenzene)122-6	"	"	"	"	"	"
31B Fluoranthene206-44-0	"	"	"	"	"	"
32B Fluorene86-73-7	"	"	"	"	"	"
33B Hexachlorobenzene87-68-3	"	"	"	"	"	"
34B Hexachlorobutadiene87-68-3	"	"	"	"	"	"
35B Hexachloro-cyclo-pentadiene 77-47-4	"	"	"	"	"	"
36B Hexachloroethane67-72-1	"	"	"	"	"	"
37B Indeno (1,2,3-c-d)Pyrene 193-39-5	"	"	"	"	"	"

NOTE (-) = Reported value < detection level

9.0 DATA CONTINUED

POLLUTANT AND CAS NO. (IF AVAILABLE)	SOLIDS WASTE STREAM ANALYSIS					
	KILN DUST	SCRUBBER SLUDGE	SORBENT	LIME	LIMESTONE	Dry Units
GC/MS FRACTION - BASENEUTRAL COMPOUNDS						
38B Isophorone78-59-1	Believed to be at or below level of detection					ug/Kg
39B Naphthalene91-20-3	"	"	"	"	"	"
40B Nitrobenzene98-95-3	"	"	"	"	"	"
41B N-Nitro-sodimethyl-amine 62-75-9	"	"	"	"	"	"
42B N-NitrosoN-Propylamine 621-64-7	"	"	"	"	"	"
43B N-Nitro-sodiphen-ylamine 86-30-6	"	"	"	"	"	"
44B Phenanthrene85-01-8	"	"	"	"	"	"
45B Pyrene129-00-0	"	"	"	"	"	"
46B 1,2,4-Trichlorobenzene 120-82-1	"	"	"	"	"	"
CGC/MS FRACTION - PESTICIDES						
1P Aldrin309-000-2	Believed to be at or below level of detection					ug/Kg
2P a-BHC319-84-6	"	"	"	"	"	"
3P B-BHC319-84-6	"	"	"	"	"	"
4P G-BHC58-89-9	"	"	"	"	"	"
5P S-BHC319-84-6	"	"	"	"	"	"
6P Chlordane57-74-9	"	"	"	"	"	"
7P 4,4'-DDT50-29-3	"	"	"	"	"	"
8P 4,4'DDE72-55-9	"	"	"	"	"	"
9P 4,4'DDD72-54-8	"	"	"	"	"	"
10P Dieldrin60-57-1	"	"	"	"	"	"
11P a-Endosulfan115-29-7	"	"	"	"	"	"
12P B-Endosultan115-29-7	"	"	"	"	"	"
13P Endosulfan Sulfate1031-07-8	"	"	"	"	"	"
14P Endrin72-20-8	"	"	"	"	"	"
15P Endrin Aldehyde7421-93-4	"	"	"	"	"	"
16P Hepatachlor76-44-8	"	"	"	"	"	"
17P Heptachlor Epoxide1024-57-3	"	"	"	"	"	"
18P PCB-124253469-21-9	"	"	"	"	"	"
19P PCB-125411097-69-1	"	"	"	"	"	"
20P PCB-122111104-28-2	"	"	"	"	"	"
21P PCB-123211141-16-5	"	"	"	"	"	"
22P PCB-124812672-29-6	"	"	"	"	"	"
23P PCB-126011096-82-6	"	"	"	"	"	"
24P PCB-101612674-11-2	"	"	"	"	"	"
25PToxaphene8001-35-2	"	"	"	"	"	"
DIOXIN						
2,3,7,8 Tetrachlorordibenzo-P-Dioxin (1764-01-6)	Believed to be at or below level of detection					ug/Kg
NOTE (-) = Reported value < detection level						