

## Overview

Louisiana's Water Quality Regulations (LAC 33:Chapter IX) require permit authorization both for the intake of raw water from, and the discharge of wastewater into, waters of the state of Louisiana. Accordingly, Koch Methanol St. James (KMe) has a Major Individual Louisiana Pollutant Discharge Elimination System (LPDES) Permit (Permit No. LA0127367) for the intake of raw water from the Mississippi River and the discharge of wastewater to the Mississippi River and St. James Canal. KMe has filed an application with LDEQ for the renewal of its LPDES permit in support of recent and upcoming projects and to incorporate updates to reflect the as-built operation of the KMe Facility.

## Water Management at KMe (See Flow Diagram Attachment)

- **River Water Intake:** Mississippi River Water is used for process operations. The raw water is filtered and treated to make it suitable for use in the process, with removed solids returned to the Mississippi river.
- **Potable Water Intake:** Municipal potable water is used for non-process related operations and activities, such as safety showers and road dust mitigation.
- **Water Usage:** KMe strives to be efficient with water usage and uses a cooling water recycling system that reuses cooling water onsite. Additionally, several process-related water streams are recycled into the process to recover usable product (*i.e.*, methanol), minimize treated wastewater production, and minimize steam loss – resulting in less water being used and discharged.
- **Wastewater Treatment:** For process wastewater streams that require treatment prior to discharge, the KMe Facility is equipped with a wastewater collection and treatment plant that is designed and operated to meet the stringent federal and state wastewater discharge requirements of the LPDES permit. This is achieved via equalization, pH adjustment, biological treatment, and clarification. Sanitary wastewater (e.g., restrooms, showers, sinks) generated by onsite personnel, contractors, and visitors is treated to meet required water quality standards and the site is permitted to discharge treated sanitary wastewater to the Mississippi River.
- **Process-related Wastewaters:** The KMe Facility was designed to minimize methanol streams sent to its wastewater collection and treatment plant and waste streams that contain higher concentrations of methanol are recycled back into the process to recover the methanol product. Process wastewaters generated directly in the process of making methanol are treated in the wastewater treatment plant before being monitored and discharged to the Mississippi River. Other non-contact process wastewaters generated indirectly in the process of making methanol, such as boiler and cooling tower blowdown, are monitored and discharged to the Mississippi River. Miscellaneous process wastewaters from maintenance activities (*e.g.*, water used to pressure test equipment) are either treated in the wastewater treatment plant, monitored, and discharged to the Mississippi River or monitored prior to discharge to either the Mississippi River or St. James Canal.
- **Stormwater:** Stormwater collected in the process block areas (with higher potential for contamination) is treated in the wastewater treatment plant and monitored prior to discharge at the Mississippi River. For the majority of stormwater events, the full amount of stormwater is treated in the wastewater treatment plant; however, during high-rate rainfall events, after the first inch of rainfall when the potential for contamination is lower, the stormwater may be diverted via a monitored outfall to a pond that discharges to the Mississippi River. Non-process area stormwater (with a low potential for contamination) is monitored and discharged to the St. James Canal via monitored outfalls.

### KMe's Current LPDES Permit Coverage

- **Water Intake Streams:** KMe is required to follow federal requirements to minimize any adverse impacts of its water intake structure on aquatic species in the Mississippi River. These requirements include designing, maintaining, and operating intake equipment in such a way that prevents aquatic species in the river from being drawn in with the water coming into the plant. Sampling of the intake water is performed to confirm aquatic species are not being impacted.
- **Permitted Discharge Streams:** The LPDES Permit indicates the specific water streams that are permitted to discharge to each designated outfall and specific applicable water quality limits based on the final discharge to either the Mississippi River or St. James Canal.
- **Sampling & Monitoring:** The permit includes short term (maximum daily) discharge limits, long term (monthly average) discharge limits, and substantial sampling and monitoring requirements for pollutants and operational conditions to ensure water discharges meet pollutant limitations and are protective of receiving waterbodies.
- **Toxicity Testing:** The LPDES Permit also requires KMe to conduct Whole Effluent Toxicity (WET) testing of the water discharge to the Mississippi River to ensure that the discharge at the final outfall is safe for aquatic species.
- **Other:** Requirements for recordkeeping, reporting, and other standard conditions for maintaining water quality are also specified in the LPDES permit.

### KMe's Proposed Changes to LPDES Permit

KMe has requested revised permit conditions in support of portions of recent projects and standard updates to its LPDES permit to reflect the as-built operation of the plant. The permit application is all-inclusive of requested changes to the LPDES Permit. The full scope of the individual projects comprising the KMe Optimization Project is targeting up to 25% increase in production of methanol product. Additionally, the Backup Oxygen Supply Project will provide a backup oxygen supply in the event of loss of oxygen from the existing third party oxygen source. As a result of the full production increase and some new equipment, the facility will produce additional wastewaters.

- **Water Intake Streams:** In support of the KMe Optimization Project, the required amount of process water will increase versus what is used today; however, the amount of water used will remain within what KMe is currently permitted to pull from the Mississippi River.
- **Permitted Discharge Streams:** The concentration of pollutants is not anticipated to change with the KMe Optimization Project. Additionally due to updating actual discharge volume information, the updated LPDES Permit will reflect a decrease in permitted total mass of pollutants discharged to the Mississippi River from the wastewater treatment plant.
- **Stormwater:** The stormwater flows to the St. James Canal will not change due to the KMe Optimization Project because it is not anticipated that the project will result in a change of stormwater flow from the site (either quality or quantity).

The KMe plant began operation of some utility systems in December 2020 and thus began water discharges at that time. A number of minor permit-related items need to be updated, which is typical for facilities that are recently constructed and are operating under their original permit. The types of updates requested include:

- **Permitted Discharge Streams:** Updating the information and descriptions to better reflect the treatment technologies utilized for process-related wastewaters. KMe is continually improving its processes and recently

replaced and upgraded the equipment used for clarification (DAF) reducing total suspended solids (TSS). Additionally, the site requested updates to descriptions of types of water routed to specific outfalls (discharge locations) to account for “clean” water streams such as potable water, firewater, treated water, boiler feedwater, steam condensate, and demineralized water.

- **Stormwater:** Consolidation of stormwater outfalls to better represent the site layout and stormwater discharge from the site. Additionally, for one of the site’s monitored stormwater outfalls, the site is requesting the upper pH limit to increase from 8.5 SU to 9.0 SU, which remains protective of the receiving waterbody.
- **Reverse Osmosis System:** Process used to further purify water utilized by the site for process purposes. The reject water from this treatment system will be discharged through a monitored outfall to the Mississippi River.
- **Backup Oxygen System:** A planned project to provide a backup oxygen supply in the event of loss of oxygen from the existing third party oxygen supplier. Any additional potential wastewater from this process will be routed through the site’s wastewater treatment system before being discharged to the Mississippi River. Stormwater will be discharged through existing monitored outfalls.
- **Other:** Updating the list of water chemical additives used along with other miscellaneous changes to better reflect the site’s operations.

### Feedback & Comments

More information regarding Koch Methanol St. James and the KMe Optimization Project can be found at the following webpage: [kochmethanol.com](http://kochmethanol.com).

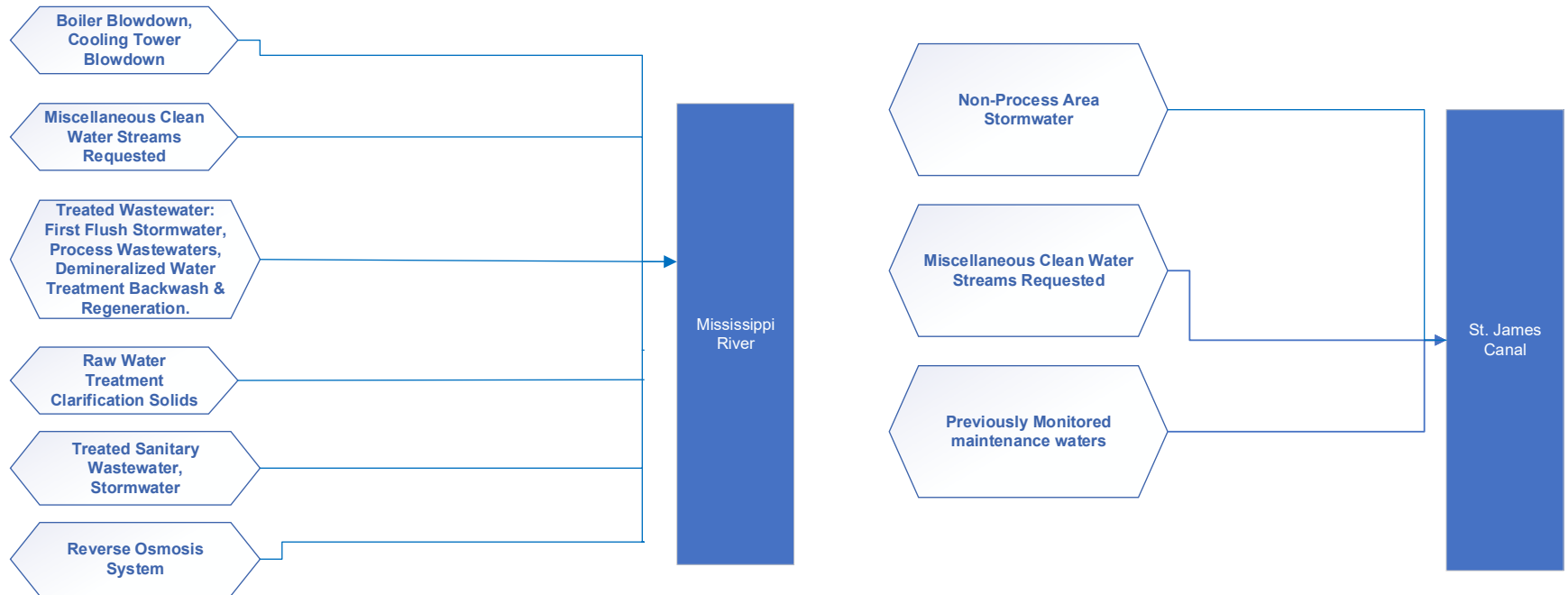
KMe welcomes your questions and feedback on the content provided above. Please submit any requests for more information, comments, or questions using the following:

**Email:** [kochmethanolinfo@kochind.com](mailto:kochmethanolinfo@kochind.com)

OR

**Mail:** Koch Methanol St. James, P.O. Box 510, Vacherie, LA 70086

### Overview of Current LPDES Permit & Planned Updates



*More detail regarding permitted water streams and permit limits can be found in KMe’s LPDES Permit No. LA0127367.*