

# STATE OF MISSISSIPPI SOLID WASTE MANAGEMENT PERMIT

TO OPERATE A SOLID WASTE MANAGEMENT FACILITY IN  
ACCORDANCE WITH THE REGULATIONS GOVERNING  
SOLID WASTE MANAGEMENT

## THIS CERTIFIES THAT

**Tronox, LLC**  
has been granted permission to operate a solid waste management facility

located at  
Section 19, Township 15 South, Range 18 West  
of Monroe County  
under the name of

**Tronox Landfill No. 2**

This permit is issued in accordance with the provisions of the Mississippi Code Annotated, and the regulations and guidelines adopted and promulgated thereunder

**MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD**

**DRAFT**

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**AUTHORIZED SIGNATURE**  
**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Issued:**  
**Expires:**

**Permit No. SW0480040573**

## CONDITIONS

### A. EFFECT OF PERMIT

The permittee shall operate the solid waste management facility in accordance with the Mississippi Nonhazardous Solid Waste Management Regulations (11 Miss. Admin. Code Pt. 4, Ch. 1), applicable federal regulations, and conditions of this permit. Any changes, alterations, or modifications of the above referenced regulations which pertain to any condition of this permit shall supersede and replace the affected conditions of this permit. In such instances, the permittee shall comply with the altered condition(s) of the Mississippi Nonhazardous Solid Waste Management Regulations.

### B. PERMIT ACTIONS

This permit may be modified, revoked, and/or reissued for good cause or noncompliance with the terms and conditions of the permit. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

### C. SEVERABILITY

The provisions of the permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

### D. DUTIES AND REQUIREMENTS

1. Duty to Comply. The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the solid waste law and regulations promulgated thereunder and is grounds for enforcement action, permit termination, revocation, reissuance, or modification, or for denial of a permit renewal application.
2. Duty to Reapply. If the permittee wishes to continue an activity authorized by this permit after the expiration date of this permit, the permittee must submit a complete application for a new permit at least 180 days before this permit expires.
3. Duty to Mitigate. The permittee shall take all reasonable steps to minimize, prevent, or correct any adverse impact on human health or the environment resulting from noncompliance with this permit.
4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all equipment and systems which are

installed or used by the permittee to achieve compliance with the conditions of this permit and application as submitted and approved by the Mississippi Department of Environmental Quality (Department).

5. Duty to Provide Information. The permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking, reissuing, or terminating this permit or to determine compliance with this permit.
6. Inspection and Entry. The permittee shall allow an authorized representative of the Department upon the presentation of credentials and other documents as may be required by law to:
  - (a) Enter on the permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this 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, practices, or operations regulated or required under this permit;
  - (d) Sample or monitor at reasonable times for the purposes of assuring permit compliance.
7. Property Rights. It is the responsibility of the permittee to possess and maintain a sufficient interest in or right to the use of the properties described in this permit, including the access route(s)

The issuance of this permit does not convey any property rights or interest in either real or personal property; nor does it authorize any injury to private property, invasion of personal rights, or impairment of previous contract rights; nor any infringement of federal, state or local laws or regulations outside the scope of the authority under which the permit is issued.
8. Anticipated Noncompliance. The permittee shall give written notice to the Department at least thirty (30) days in advance of any planned changes in the permitted facility or activity which may result in noncompliance with the requirements of this permit or the Mississippi Nonhazardous Solid Waste Management Regulations.
9. Modification of Permits. Any proposed modification to the approved application or plan of operations resulting in an expansion of the facility or a significant change in the method of waste management must be approved

by the Mississippi Environmental Quality Permit Board or the Board's Designee prior to implementation. Other proposed modification to the approved facility design or operations must be approved by the Department prior to implementation.

10. Transfer of Permits. This permit is not transferable to any person except after notice to and approval of the Mississippi Environmental Quality Permit Board. The Permit Board 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.
11. Signature Requirements. The permittee shall ensure that an application for the re-issuance, modification or transfer of this permit and all reports required by this permit or by state regulations shall be signed in accordance with Rule 1.2.G of the Mississippi Nonhazardous Solid Waste Management Regulations.
12. Financial Assurance. The permittee shall establish, maintain and annually update financial assurance for the estimated closure and post-closure costs of the landfill as required by Rule 1.4 of the Mississippi Nonhazardous Solid Waste Management Regulations

**E. SITE PREPARATION AND CONSTRUCTION REQUIREMENTS**

1. The permittee shall ensure that site preparation and construction activities are conducted in accordance with the Mississippi Nonhazardous Solid Waste Management Regulations and the approved plans as submitted to the Department.
2. The permittee shall ensure that the construction of the components of the landfill is conducted by qualified and experienced personnel.
3. The permittee shall ensure that the constructed disposal area is limited to the approved area defined in the final submitted application, consisting of approximately 42.4 acres of the property located in Section 19, Township 15 South, Range 19 West of Monroe County.
4. Prior to construction or preparation of any new disposal cell, the cell boundaries shall be appropriately located and marked by a land surveyor licensed by the State of Mississippi to ensure construction within the approved area. The permittee shall maintain and repair or replace permanent markers that have been damaged or inadvertently removed. Property line setback distances as indicated in the approved permit application shall be maintained.
5. The permittee shall ensure that the perimeter storm water management system and the surficial run-off collection system including the perimeter and interior diversion ditches and dikes, access road storm water ditches,

storm water collection swales, side slope diversion swales, down chutes, and the runoff collection basin shall be constructed and maintained as per the approved plans to inhibit erosion and minimize storm water contact with the waste.

**F. SITE SPECIFIC OPERATING CONDITIONS**

1. The permittee shall ensure that the facility is operated in accordance with all applicable regulations and the approved plan of operations.
2. The permittee shall implement and maintain security and monitoring measures to prevent uncontrolled access and disposal. An attendant shall be on duty at any time access to the site is unsecured.
3. The permittee is authorized to accept and dispose of the following nonhazardous wastes generated by the Tronox Hamilton Facility as described in the approved plan of operations:
  - a. used processed sand, titanium dioxide, or other similar manufacturing waste material mixtures generated from the process;
  - b. filter cake and other solids generated from dewatered sludges, and
  - c. other waste generated onsite and approved by the Department prior to disposal.

No waste generated offsite shall be disposed of in the landfill.

4. The permittee shall implement a program in accordance with the Mississippi Nonhazardous Solid Waste Management Regulations and the approved plan of operations to ensure that unauthorized wastes are prohibited from disposal.
5. The permittee shall ensure that, should a fire occur within the disposal area, the owner and/or operator of the facility will take immediate action to extinguish the fire and will notify the Department within 24-hours. Initial Department notification may consist of either written or verbal communication. However, written correspondence describing the incident and the conditions of its extinguishment shall be submitted within 5 working days of the incident.
6. Periodic earthen cover shall be provided as needed to control fugitive dust emissions and in accordance with the plan of operation. The Department may alter the cover frequency based on site conditions, compliance issues or other factors.
7. The permittee shall take appropriate actions to inhibit waste from becoming windblown. Appropriate dust control measures shall be implemented as necessary to contain and/or suppress fugitive dust emissions from the disposal area, from access and transport roads, and/or from other facility components.
8. The conveyor system and/or vehicles for delivering waste to the landfill

- shall be operated and maintained to prevent the loss of solid waste material.
9. The permittee shall construct and maintain all-weather access and transport roads to maintain operations during inclement weather conditions or during conveyor downtime.
  10. The permittee shall at all times provide, properly operate, and maintain equipment and systems utilized to achieve compliance with the conditions of this permit and all applicable laws, ordinances and regulations. The permittee shall ensure proper training of all facility employees and ensure the employment of an adequate number of employees required to properly operate the facility.
  11. The permittee shall ensure that waste will not be disposed in standing water, in any waters of the state, nor in any manner that may result in washout of waste. Furthermore, the site shall be developed and contoured to direct storm water run-off/run-on away from the active disposal area and to prevent ponding of water.
  12. The permittee shall ensure that the landfill will be operated and maintained with earthen berms, ditches, or other appurtenances such that uncontaminated surface water run-off is directed around and away from the developed landfill area. The permittee shall additionally ensure that erosion, sloughing, or other damage is promptly repaired.
  13. The permittee shall ensure that the facility's sedimentation basins will be maintained to collect and control, at a minimum, the water volume resulting from a 24-hour, 25-year storm event. Additionally, the permittee shall ensure that periodic dredging of the basins will be conducted to maintain proper elevations and the required capacity.
  14. Surface water which has contacted waste, surface leachate flowing from filled areas of the landfill, and subsurface leachate shall be collected and managed as leachate. Surface leachate and contaminated surface water shall not be allowed to flow offsite of the landfill but shall be conveyed to the facility's wastewater treatment system and discharged in accordance with the approved National Pollutant Discharge Elimination System (NPDES) Permit Number MSO002232.
  15. The permittee shall ensure that the leachate collection system will be operated as follows:
    - a. The leachate collection system of pipes, trenches, and sumps shall be cleaned, maintained, and pumped to ensure proper leachate collection.
    - b. The depth of leachate over the liner, excluding the trenches and sumps, shall not exceed 30 cm.
  16. The permittee shall construct and maintain internal and external slopes of the landfill in such a manner to ensure an adequate factor of safety to prevent slides and slope failures.
  17. The permittee shall ensure that operations of the facility are conducted in

accordance with all applicable requirements of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

18. The permittee shall ensure that excavation, mining, and/or removal of solid waste from the disposal area is prohibited unless plans are submitted to and approved by the Department.

**G. MONITORING, RECORDKEEPING, AND REPORTING  
REQUIREMENTS**

1. Leachate Monitoring Requirements
  - a. The permittee shall ensure that depth of leachate measurements is made and/or monitored daily in each active, inactive and closed disposal cell.
  - b. The permittee shall maintain records at the facility confirming daily leachate monitoring and shall ensure that the records also consist of documentation of the following:
    1. leachate depth measurements that exceed 30 cm or greater over the liner;
    2. any electronic pumping failures;
    3. any corrective measures implemented for repairs or other actions to return depth of leachate over liner to less than 30 cm;
    4. quantities of leachate pumped;
    5. results of any required leachate analysis; and
    6. system cleaning and maintenance records.
2. Groundwater Monitoring Requirements
  - a. The permittee shall install a groundwater monitoring system in accordance with Rule 1.4 of the Mississippi Nonhazardous Solid Waste Management Regulations prior to the disposal of wastes. Groundwater monitoring system plans and specifications for each phase of landfill development shall be submitted to the Department for approval prior to well installation. All wells installed prior to waste disposal shall be sampled to establish background data. Well installation reports containing methodology, construction logs, well specifications, depths, and surveyed locations shall be submitted to the Department no later than sixty (60) days after installation of the wells.
  - b. The permittee shall conduct detection groundwater monitoring at the facility in accordance with State and Federal regulations and the approved groundwater monitoring plan. Proposed changes or modifications to the approved groundwater monitoring plan must be approved by the Department prior to implementation.
  - c. The permittee shall conduct groundwater monitoring semi-annually, unless otherwise directed by the Department. The semi-annual

groundwater monitoring periods shall be January through June and July through December. Although samples may be obtained at any time during the monitoring period, the permittee shall ensure that all required sampling events, excluding background events, will be at least four months apart.

- d. The permittee shall submit a copy of the results of the groundwater monitoring to the Department within 60 days of the sampling event. Additionally, the permittee shall retain reports and records for each groundwater monitoring event in the operating record and ensure that the report and records consist of the following:
1. The dates, exact location, and time of sampling
  2. Identification of individuals who performed the sampling
  3. Results of groundwater level measurements and a map indicating the direction of groundwater flow
  4. The date(s) laboratory analyses were performed
  5. Identification of individuals who performed the laboratory analyses
  6. The analytical techniques or methods utilized
  7. The results of such analyses, prepared according to industry standards or as directed by Department
  8. The statistical report of the analyses
  9. A determination of statistically significant increases, and
  10. The chain of custody forms
- e. The permittee shall conduct groundwater monitoring at the landfill in accordance with the approved groundwater monitoring plan for the following analytical parameters:

Chemical Oxygen Demand (COD)	Specific Conductance
Chloride	Total Chromium
Fluoride	Total Hardness
Nitrate/Nitrite	Total Iron
Nitrogen/Ammonia	Total Phosphorus
Sulfate	Total Titanium

Field measurements shall be recorded and reported and include:

pH  
Specific conductance  
Temperature  
Turbidity  
Static groundwater level

- f. Any time a statistically significant increase is identified for any parameter listed in G.2.e., the permittee shall ensure that the Department



is notified within 14 days. Additionally, the permittee shall conduct groundwater assessment monitoring and corrective action, if necessary, at the facility in accordance with the Mississippi Nonhazardous Solid Waste Management Regulations.

3. Solid Waste Recordkeeping and Reporting Requirements
  - a. The permittee shall maintain an accurate daily record of waste entering the facility. The record shall include the following:
    1. The name of the hauler,
    2. The source of the waste,
    3. The type(s) of waste received, and
    4. The weight of the waste in units of tons.
  - b. The permittee shall ensure that an annual report will be submitted to the Department each year on or before February 28th providing information regarding the operations of the preceding calendar year. The report shall include the following items:
    1. Aggregate information on the types, amounts, and sources of wastes received during the previous calendar year.
    2. A contour drawing of the landfill showing areas filled during the report year and total areas filled.
    3. The estimated remaining capacity, in terms of volume and years of life remaining.
    4. An adjusted closure and post closure cost estimate.
    5. An audit of the financial assurance document and the end of year value of the financial assurance mechanism.
    6. A modified financial assurance document, if necessary; and
    7. Other information as requested by the Department.

**F. CLOSURE/POST-CLOSURE REQUIREMENTS**

1. The permittee shall conduct closure and post-closure activities in accordance with the Mississippi Nonhazardous Solid Waste Management Regulations and the approved closure/post-closure plan in the application. Any proposed changes to the closure/post-closure plan must be approved by the Department.
2. The permittee shall ensure that the final cover system is designed to minimize infiltration and erosion. The final cover system shall be designed to have a permeability less than or equal to the permeability of the bottom liner system and include:
  - a. An infiltration layer comprised of a minimum of 18 inches of earthen material that has a permeability of  $1 \times 10^{-7}$  cm/sec, and
  - b. An erosion layer consisting of a minimum of 6 inches of earthen material

capable of sustaining native plant growth, or

- c. An alternate final cover design may be approved by the Department
3. The permittee shall ensure that the final cover gradient shall be a minimum of 4% and a maximum of 25%, unless otherwise approved by the Department.
4. The permittee shall ensure that the final height of the facility, including the final cover system, does not exceed 297 feet above mean sea level (MSL).
5. At least 30 days prior to the initiation of final closure, the permittee shall submit an updated closure/post-closure construction plan for the landfill. This plan must be approved by the Department prior to initiating closure activities. This plan shall include, at a minimum:
  - a. a description of the construction details of the final cover system and the surface water control structures;
  - b. a construction quality assurance (CQA) plan for the final cover system components, drainage system features and any other appropriate closure components;
  - c. a proposed schedule of closure activities; and
  - d. an updated description of the post-closure monitoring and maintenance plans for the landfill.
6. The permittee shall ensure that final closure activities are completed within 180 days of beginning closure activities, unless otherwise approved by the Department.
7. The permittee shall ensure that within 60 days of completion of final closure that the following documents are submitted to the Department:
  - a. a certification, signed by a registered professional engineer, verifying that the final cover system has been constructed in accordance with the regulations and the approved closure plan;
  - b. a survey drawing, prepared by a registered surveyor, depicting final contours, total acreage, and the boundaries of the landfill; and
  - c. a report documenting the final volume and tonnage of waste deposited in the landfill.
8. The permittee shall ensure that within 90 days of completion of final closure activities, the deed for the property is notated in accordance with Rule 1.4.E(2)(g) of the Mississippi Nonhazardous Solid Waste Management Regulations.
9. The permittee shall conduct post-closure maintenance and monitoring in accordance with Rule 1.4.E(3) of the Mississippi Nonhazardous Solid Waste Management Regulations and approved post-closure plan. The post-closure monitoring period for the landfill shall be a minimum of 30 years, unless otherwise determined by the Department