

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)

Permit No. MO-0000311

Owner: Ashland Inc.  
Address: 5200 Blazer Parkway, Dublin, OH, 43017

Continuing Authority: same as above  
Address: same as above

Facility Name: Hercules Incorporated  
Facility Address: 11083 Highway D, Louisiana, MO 63353

Legal Description: Landgrant 3178, Pike County  
UTM Coordinates: X = 669919, Y = 4366255 (center of former ash ponds)

Receiving Stream: Groundwater  
First Classified Stream and ID: Not Applicable  
USGS Basin & Sub-watershed No.: Buffalo Creek-Mississippi River (07110004-0702)

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

**FACILITY DESCRIPTION**

This facility is not allowed to discharge wastewater. This facility is closed but will be continuing with groundwater monitoring.

This permit authorizes only groundwater monitoring under the Missouri Clean Water Law; 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.

FEBRUARY 27, 2012      MARCH 18, 2015  
Effective Date      Modification Date

Sara Parker Pauley, Director, Department of Natural Resources

FEBRUARY 26, 2017  
Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION

Outfall #001 – The facility has closed and no longer discharges through this outfall (Dyno Nobel and Calumet still use this outfall)

Outfall #002 – Outfall was transferred to Dyno Nobel (MO-0105783)

Outfall #003 – Outfall was transferred to Dyno Nobel (MO-0105783)

Outfall #006 – Outfall was transferred to Calumet Missouri (MO-0137243)

Outfall #007 – Former emergency ash pond overflow, the outfall has been eliminated because the ash pond has been closed and capped.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

See special condition # 10 regarding groundwater monitoring requirements.

Minimum Sampling Requirements			
Quarter	Months		Report is Due
First	January, February, March	Sample at least once during any month of the quarter	With Permit Renewal Materials
Second	April, May, June	Sample at least once during any month of the quarter	
Third	July, August, September	Sample at least once during any month of the quarter	
Fourth	October, November, December	Sample at least once during any month of the quarter	

B. STANDARD CONDITIONS

Applicable standard conditions from PART I, AUGUST 1, 2014.

*Section I – 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 Missouri Department of Natural Resources (Department) approved sampling location(s), following industry accepted groundwater monitoring guidance.
  
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, 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 II, 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.

B. STANDARD CONDITIONS (CONTINUED)

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.** 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 five 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.** 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 II – 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. 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. **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.
3. **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.
4. **Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 3, and 5 of this section, at the time reports are submitted.
5. **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.

## B. STANDARD CONDITIONS (CONTINUED)

### *Section III – 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 is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

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 permittees 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.

## B. STANDARD CONDITIONS (CONTINUED)

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. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.
9. **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.
10. **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 Missouri Clean Water Law, any substances or parameters at any location.
11. **Signatory Requirement.**
  - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 10 CSR 20-6.010)
  - b. 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.
12. **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.

## C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - a. Comply with any applicable effluent standard or limitation issued or approved under 10 CSR 20-6 or 20-7, if the effluent standard or limitation so issued or approved:
    - i. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - ii. controls any pollutant not limited in the permit.
  - b. Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - c. Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

C. SPECIAL CONDITIONS (CONTINUED)

2. All monitoring wells must be clearly marked in the field.
3. 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:
    - i. 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;
    - ii. Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
    - iii. Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses;
    - iv. Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life;
    - v. There shall be no significant human health hazard from incidental contact with the water;
    - vi. There shall be no acute toxicity to livestock or wildlife watering;
    - vii. Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
    - viii. 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.
4. Reporting of Non-Detects
  - a. An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
  - b. The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
  - c. The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
  - d. The permittee shall use one-half of the detection limit for the non-detect result when calculating and reporting monthly averages.
  - e. See Standard Conditions Part I, *Section I, #4* regarding proper detection limits used for sample analysis.
5. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
6. Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 ET. SEQ.) and the use of such pesticides shall be in a manner consistent with its label.
7. The permittee shall adhere to the following minimum Best Management Practices (BMPs):
  - a. Evaluate and record ash pond cap vegetative cover and any other possible issues with the ash pond cap quarterly in an Operation and Maintenance (O&M) plan. The plan and inspection records will be available to the department if requested.
  - b. The O&M plan records will document inspections and issues, and provide remedies for cap malfunctions or failure, and records of implementing and completing repairs of the cap.
  - c. Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
  - d. Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with general water quality criteria.
  - e. Ensure adequate provisions are provided to prevent surface water intrusion into the ash pond basin, to divert stormwater runoff around the basin, and to protect embankments from erosion.
8. The purpose of the BMPs listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.

C. SPECIAL CONDITIONS (CONTINUED)

9. Release of a hazardous substance must be reported to the department in accordance with 10 CSR 24-3.010. A record of each reportable spill shall be retained and made available to the department upon request.
10. Groundwater monitoring requirements. The facility will continue to monitor groundwater for pollutants associated with the former coal ash ponds.
  - a. The monitoring system must be capable of comparing up-gradient to down-gradient water quality in the first continuous water-bearing zone beneath the impoundment. The monitoring system must be based upon a thorough hydrogeologic characterization of the impoundment area that determines the appropriate hydrostratigraphic unit to monitor, its groundwater gradient(s) and any seasonal variations in its gradient(s). Any hydrogeologic characterization conducted for the design of the groundwater monitoring program shall be approved by the department's Geological Survey Program and must be conducted under the guidance of a geologist registered in the State of Missouri. The design of the groundwater monitoring program shall be approved by the department prior to installation. The number of monitoring wells required for the groundwater monitoring program shall be based on site-specific hydrogeologic conditions and sufficient for effective monitoring, but shall include a minimum of one up-gradient and three down-gradient wells.
  - b. In order to accomplish this, the permittee shall:
    - i. Submit the hydrogeologic characterization and monitoring well plan within one (1) year of the effective date of this operating permit;
    - ii. Upon submittal of the renewal application for this facility, the permittee shall submit a Toxic Characterization Report based on a minimum of eight quarterly samples, not limited to analytical water testing from their coal ash impoundment and groundwater monitoring wells.
    - iii. The facility shall construct and maintain the groundwater monitoring network in good working order and according to 10 CSR 23-1 through 23-4.
  - c. In the event the United States Environmental Protection Agency promulgates regulations affecting coal ash impoundments, the permit may be re-opened to incorporate regulatory changes.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES**  
**FACT SHEET**  
**FOR THE PURPOSE OF MODIFICATION OF**  
**MO-0000311**  
**HERCULES INCORPORATED**

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 state laws ("Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified. After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. 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 a former industrial facility.

**Part I. FACILITY INFORMATION**

FACILITY PERMIT MODIFICATION HISTORY & COMMENTS

**2015 (current) modification:** Removed all outfalls. Groundwater monitoring is still required. At this time, the department is permitting this facility for groundwater monitoring. No discharge of wastewater occurs. Outfall #006 was transferred to Calumet.

**2013 modification:** Removed outfalls 002 and 003, transfer to Dyno Nobel.

**2013 modification:** The applicant sold part of its operation to Calumet Missouri LLC. This process was covered by outfall #005 in the previous permit. Calumet Missouri LLC has applied for a new permit and this outfall is covered under their permit number MO-0137243 hence outfall 005 was removed from their permit.

FACILITY HISTORY & COMMENTS

Hercules Incorporated, Missouri Chemical Works (MCW) facility, ceased manufacturing with the sale of its synthetic lubricants business to Calumet Missouri on January 3, 2012. The site formerly produced formaldehyde, pentaerythritol, sodium formate, ureaform and nitrogen fertilizers. The facility previously produced its own power via a coal fired power plant which has ceased operation. Additionally, the facility produced process and soft water for use at the facility. The process wastewater was treated by activated sludge aerobic treatment. Decommissioning activities associated to ceasing production of formaldehyde, pentaerythritol, sodium formate, ureaform and nitrogen fertilizers took place in 2012. The power generating facility and associated buildings were removed in 2013 and 2014.

The coal ash ponds were closed with an LDPE cap in 2014. The former ponds were not lined and therefore have certain hazards associated with this aspect. The Environmental Protection Agency has published several technical documents indicating negative issues associated with unlined/poorly lined CCR storage areas. Most recently, the EPA pre-published a new rule (docket EPA-HQ-RCRA-2009-0640) indicating CCR was in fact going to be managed under Resource Conservation Recovery Act Subtitle D. To quote from the summary: "The available information demonstrates that the risks posed to human health and the environment by certain CCR management units warrant regulatory controls. EPA is finalizing national minimum criteria for existing and new CCR landfills and existing and new CCR surface impoundments and all lateral expansions consisting of location restrictions, design and operating criteria, groundwater monitoring and corrective action, closure requirements and post closure care, and recordkeeping, notification, and internet posting requirements. The rule requires any existing unlined CCR surface impoundment that is contaminating groundwater above a regulated constituent's groundwater protection standard to stop receiving CCR and either retrofit or close..." However, since the ash ponds have closed, it becomes the water protection program's responsibility to direct facilities to monitor for pollutants which remain in place. This modification reinforces groundwater monitoring to assess the potential to cause contamination to groundwaters of the state.

**Part II. RECEIVING STREAM INFORMATION**

RECEIVING WATER BODY'S WATER QUALITY

This facility is monitoring potential discharges to groundwater at the site. A small amount of data was submitted to the water protection program regarding conditions at the site in three groundwater sampling events which occurred in August 2011, October 2013, and April 2014. Exceedences of groundwater quality standards were noted. With this factor, the department has determined it necessary to continue monitoring of the groundwater for the facility's toxic characterization report based on eight sequential quarters of groundwater monitoring data. Because of the proximity of the Missouri River, the groundwater has the potential to flow into the river which should also be addressed in the toxics report.

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 seven categories. Each category lists effluent limitations for specific parameters. Section seven specifically mentions "Effluent Limitations for Subsurface Waters".

10 CSR 20-7.031(6) of the Missouri Water Quality Standards, the Department explains the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses" which are drinking water, livestock watering, and irrigation for groundwater. Table A supplies numeric limitations which all groundwater should meet.

#### MIXING CONSIDERATIONS

Mixing occurs with groundwater during the percolation of contaminants from unlined/inadequately lined coal combustion residual holding ponds. However, when determining limits, mixing is not allowed for groundwater parameters.

### **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.

- ✓ Not applicable. This permit is issued under state statutes, therefore 40 CFR 122 is not applicable. All outfalls were removed or transferred to other facilities on site, no effluent limitations are applicable. The facility has closed and this permit is only for groundwater monitoring.

#### 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.

- ✓ Modification-- 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://extension.missouri.edu/main/DisplayCategory.aspx?C=74>, 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.

#### INDUSTRIAL SLUDGE

Industrial sludge is solids, semi-solids, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

- ✓ Not applicable. This condition is not applicable to the permittee for this facility.

#### 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)(1)(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.

✓ Not Applicable. This permit does not contain a SOC.

#### 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.

#### 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. A SWPPP is for industrial facilities where industrial wastewater is being generated. While not applicable to this facility at this time, the facility will need to follow Best Management Practices for the ash pond cap.

#### 303(D) LIST

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.

✓ Not applicable. This facility does not discharge to an impaired segment of a 303(d) listed stream.

#### TOTAL MAXIMUM DAILY LOAD (TMDL)

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 is not associated with a TMDL.

#### 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(4)], general criteria shall be applicable to all waters of the state at all times including mixing zones.

#### 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. WET testing is not relevant to groundwater.

### **Part IV. GROUNDWATER MONITORING**

#### SAMPLING FREQUENCY JUSTIFICATION

Sampling frequency will be quarterly for groundwater monitoring. This requirement is in-line with other facilities doing this type of monitoring and provides temporal separation of the samples. See table in Section A of the permit for frequencies.

#### SAMPLING TYPE JUSTIFICATION

Grab samples are appropriate for groundwater monitoring.

### **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.

#### 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.

✓ Modification, no synchronization is allowed.

#### 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.

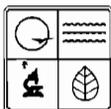
For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

✓ Because this permit is considered a minor modification, the revised permit is not subject to public notice.

**DATE OF FACT SHEET: MARCH 2015**

#### **COMPLETED BY:**

Pam Hackler, Environmental Specialist  
Missouri Department of Natural Resources  
Water Protection Program  
Operating Permits Section - Industrial Unit  
573-526-3386  
pam.hackler@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**FORM A – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT  
 UNDER MISSOURI CLEAN WATER LAW**

**RECEIVED**

AP18800

JUN 25 2008

FOR AGENCY USE ONLY	
CHECK NUMBER	11005810
DATE RECEIVED	6/25/08
FEE SUBMITTED	\$1256.00

88

**Note** ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

**1.** This application is for:

- An operating permit and antidegradation review public notice
- A construction permit following an appropriate operating permit and antidegradation review public notice
- A construction permit and concurrent operating permit and antidegradation review public notice
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- An operating permit for a new or unpermitted facility Construction Permit # \_\_\_\_\_
- An operating permit renewal: permit # MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_
- An operating permit modification: permit # MO-0000311 Reason: Remove Outfalls

**1.1** Is the appropriate fee included with the application? (See instructions for appropriate fee)  YES  NO

**2. FACILITY**

NAME HERCULES INCORPORATED		TELEPHONE WITH AREA CODE (614) 790-4641	
		FAX (614) 790-6080	
ADDRESS (PHYSICAL) 11083 HIGHWAY D	CITY LOUISIANA	STATE MO	ZIP CODE 63353

**3. OWNER**

NAME ASHLAND INC.		E-MAIL ADDRESS klong@ashland.com	TELEPHONE WITH AREA CODE (614) 790-4641	
			FAX (614) 790-6080	
ADDRESS (MAILING) 5200 BLAZER PARKWAY, EH&S	CITY DUBLIN	STATE OH	ZIP CODE 43017	

**3.1** Request review of draft permit prior to public notice?  YES  NO

**4. CONTINUING AUTHORITY**

NAME ASHLAND INC.		TELEPHONE WITH AREA CODE (614) 790-4641		
		FAX (614) 790-6080		
ADDRESS (MAILING) 5200 BLAZER PARKWAY, EH&S	CITY DUBLIN	STATE OH	ZIP CODE 43017	

**5. OPERATOR**

NAME ASHLAND WATER TECHNOLOGIES		CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE (614) 790-4641	
			FAX (614) 790-6080	
ADDRESS (MAILING) 11083 HIGHWAY D	CITY LOUISIANA	STATE MO	ZIP CODE 63353	

**6. FACILITY CONTACT**

NAME KARA LONG		TITLE CORPORATE ENV. ENGINEER	TELEPHONE WITH AREA CODE (614) 790-4641	
			FAX (614) 790-6080	

**7. ADDITIONAL FACILITY INFORMATION**

**7.1** Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_  
*For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)*

002 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_

003 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_

004 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_

**7.2** Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 – SIC \_\_\_\_\_ and NAICS \_\_\_\_\_      002 – SIC \_\_\_\_\_ and NAICS \_\_\_\_\_  
 003 – SIC \_\_\_\_\_ and NAICS \_\_\_\_\_      004 – SIC \_\_\_\_\_ and NAICS \_\_\_\_\_

HE

**8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION**  
**(Complete all forms that are applicable.)**

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? YES  NO   
 If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).
- B. Is your facility considered a "Primary Industry" under EPA guidelines: YES  NO   
 If yes, complete Forms C and D.
- C. Is application for storm water discharges only? YES  NO   
 If yes, complete EPA Form 2F.
- D. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.
- E. Is wastewater land applied? If yes, complete Form I. YES  NO
- F. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? YES  NO   
 If yes, complete Form R.

**9. DOWNSTREAM LANDOWNER(S)** Attach additional sheets as necessary. See Instructions.  
**(PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).**

NAME			
ADDRESS	CITY	STATE	ZIP CODE

**10.** I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Kara Long, Corporate Environmental Engineer	TELEPHONE WITH AREA CODE (614) 790-4641
SIGNATURE	DATE SIGNED

MO 780-1479 (01-09)

**BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.**

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- Appropriate Fees?
- Map at 1" = 2000' scale?
- Signature?
- Form C, if applicable?
- Form D, if applicable?
- Form 2F, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?

Ashland Hercules MO-000311 Outfalls Locations

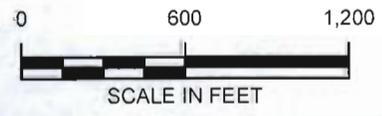
Outfall	DMS		UTM		Receiving Water	Legal Description				Status	
	Lat	Long	Easting	Northing		1/4	1/4	Sec	Twn		Range
001	392555.0	+910107.0	670531	4366585	Mississippi River	E	SW	21	54-N	1W	Request to Remove from permit
002	392610.0	+910143.0	669660	4367029	Mississippi River	NW	SE	20	54-N	1W	Transferred to Dyno
003	392527.0	+910118.0	670286	4365716	Buffalo Creek	SW	NW	28	54-N	1W	Transferred to Dyno
005	392523.0	+910133.0	669930	4365585	Buffalo Creek	SE	NE	29	54-N	1W	Transferred to Calumet
006	392530.0	+910140.0	669750	4365797	Mississippi River	SE	NE	29	54-N	1W	Request to Transfer to Calumet
007	392544.3	+910113.4	670384	4366251	Buffalo Creek	NW	NW	28	54-N	1W	Request to Remove from permit



CITY: Novi DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER:  
path: D:\GIS\Project Files\Hercules\NPDES\_Outfalls.mxd -User: T\Yarborough

**LEGEND**

-  INPDES OUTFALL
-  ASHLAND PROPERTY BOUNDARY
-  DYN0 NOBEL PROPERTY
-  CALUMET PROPERTY



HERCULES  
ASHLAND MCW  
LOUISIANA, MISSOURI

**NPDES OUTFALL LOCATION MAP**



FIGURE  
**1**

RECEIVED

**ASHLAND**

Environmental, Health and Safety

Ashland Inc. WATER PROTECTION PROGRAM  
P.O. Box 2219  
Columbus, OH 43216  
Tel: 614-790-3333, Fax: 614-790-6080  
www.ashland.com

June 23, 2014

Ms. Amanda Sappington  
Water Pollution Control Branch  
Missouri Department of Natural Resources  
1101 Riverside Dr.  
Jefferson City, MO 65101

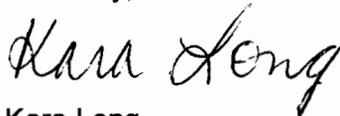
Re: NPDES Permit MO 0000311  
3.500 Pike County

Dear Ms. Sappington:

Enclosed please find the required forms and fee to modify the permit referenced above. At this time we would like to remove Outfall 001, 006, and 007 from this permit. Outfall 007 is no longer present due to the closure of the ash ponds. Since the ash ponds have been closed, Ashland no longer contributes industrial discharge to Outfall 001 since all manufacturing operations at this site for Ashland have ceased. We request Outfall 006 be transferred to Calumet for use in their future wastewater treatment options. Ashland will no longer be discharging to Outfall 006 since the previous waste water ponds have been cleaned of sludge and filled in. It is our understanding that Calumet has already submitted an application to acquire Outfall 006. With the removal of these outfalls from this permit, there will no longer be any permitted outfalls for this site for Ashland. Ashland at this time requests that this permit be terminated. We appreciate your review of this matter! If you have any questions, please contact me either by email [klong@ashland.com](mailto:klong@ashland.com) or phone at (614) 790-4641.

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,



Kara Long  
Corporate Environmental Engineer

Attachment

CC:

Ms. G. Irene Crawford  
Regional Director  
Missouri Department of Natural Resources  
1709 Prospect Drive  
Macon, Missouri 63552  
(660) 385-8000



Roger A. Ladewig  
Plant Manager

**Ashland Water Technologies**

11083 Highway D  
Louisiana, MO 63353  
Tel: (414) 535-6205; FAX: (414) 614-9561  
Mobile: (414) 614-9561  
rladewig@ashland.com

RECEIVED

June 23, 2014

JUN 23 2014

Ms. G. Irene Crawford  
Regional Director  
Missouri Department of Natural Resources  
1709 Prospect Drive  
Macon, Missouri 63552  
(660) 385-8000

WATER PROTECTION PROGRAM

Re: NPDES Permit MO 0000311  
3.500 Pike County

Dear Ms. Crawford:

Enclosed are the Discharge Monitoring Reports for the month of May 2014 for the Outfalls serially numbered 001, 006, and 007.

Also included, in this report, are the results from Dyno Nobel.

If you have any questions, please contact me at (614) 790-4641 or Roger Ladewig at the above telephone number.

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,

Kara Long  
Corporate Environmental Engineer

Attachment

CC: Amanda Sappington – MDNR Water Protection Program



DYNO  
Dyno Nobel

**Dyno Nobel Americas**

Regional Director  
Mrs. Irene Crawford  
Missouri Department of Natural Resources  
1709 Prospect Drive  
Macon, MO 63552

DYNO NOBEL INC.  
LOMO Plant  
11025 Highway D  
Louisiana, Missouri  
63353 USA  
Telephone: 573-754-4501  
Fax: 573-754-6525  
www.dynonobel.com

**Date** 6/18/14      **Your ref.** May Temperature DMR  
NPDES PERMIT MO-0105783  
3.500 PIKE COUNTY  
**File no.** May Temp  
DYNO NOBEL INC/LOMO PLANT

Enclosed is the discharge temperature mixing report for the month of May 2014 for Outfall 001.

Delta T, Tcap, and Tmax results are within permit limit and the Mississippi River Zone A limits for May 2014.

If you have any questions regarding this information, please contact Brian Gregory at 573-754-4501 x 3023.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Regards

Samuel J. Correnti Jr.  
Plant Manager  
Phone: +1 573 754 4501, X3007  
E-mail: [sam.correnti@am.dynonobel.com](mailto:sam.correnti@am.dynonobel.com)

Attachments

bcc: Ashland Hercules Water Technologies, Kara Long





3.500 Pike County  
Outfall 006 - Clarifier

Outfall 006 - Clarifier

Daily Maximum Monthly Average	Report Report	284 106	Report Report	473 146	Report Report	6.0 - 9.0 6.0 - 9.0	71.4 38.2	48.5 24.7	Report Report	Report Report	Report Report	Report Report	Report Report	Report Report	Report Report
Date (MM/DD/YY)	Flow (mgd)	BOD (ppd)	BOD (mg/l)	TSS (ppd)	TSS (mg/l)	pH (SU)	Organic N (ppd)	NH3-N (ppd)	NH3-N (mg/l)	Sulfate* (mg/l)	Aluminum* (ug/l)	Barium* (ug/l)	Iron* (ug/l)	Delta-BHC* (ug/l)	
05/01/14	0.073														
05/02/14	0.059														
05/03/14	0.063														
05/04/14	0.036														
05/05/14	0.049														
05/06/14	0.065														
05/07/14	0.070	22.9	39	8.2	14	7.81	1.4	10.6	18	170					
05/08/14	0.077														
05/09/14	0.046														
05/10/14															
05/11/14															
05/12/14															
05/13/14															
05/14/14															
05/15/14															
05/16/14															
05/17/14															
05/18/14															
05/19/14	0.081														
05/20/14	0.090														
05/21/14	0.089	23.7	32	11.1	15	8.32	2.2	19.3	26						
05/22/14															
05/23/14															
05/24/14															
05/25/14															
05/26/14															
05/27/14															
05/28/14															
05/29/14															
05/30/14															
05/31/14															
Total															
Average	0.066	23.3	35.5	9.7	14.5		3.6	15.0	22						
Max	0.090	23.7	39	11.1	15	8.32	2.2	19.3	26	170					

\* PDC Laboratories, Inc.

**Bold indicates insufficient uptake**

By: *Kara Long*  
Corporate Environmental Engineer

Date: 6/20/14

Outfall #006  
Permit # MO0000311

Parameter	CAS #	Daily Flow (MGD)	Results (mg/l)	Results (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (lbs/day)	Limit of Quantitation (mg/l)
Chromium, total	7440-47-3	0.070	0.018	0.011	8.48	3.4	0.0020
Copper, total	7440-50-8	0.070	0.043	0.025	10.35	4.44	0.0020
Cyanide, total	57-12-5	0.070	0	0	3.67	1.29	0.005
Lead, total	7439-92-1	0.070	0.035	0.020	2.11	0.98	0.0100
Nickel, total	7440-02-0	0.070	0.017	0.010	12.18	5.17	0.0020
Zinc, total	7440-66-6	0.070	0.025	0.015	7.99	3.21	0.0100
Trichloroethane, 1,1,1	71-55-6	0.070	0	0	0.17	0.06	0.005
Trichloroethane, 1,1,2	79-00-5	0.070	0	0	0.17	0.06	0.005
Dichloroethane, 1,1	75-34-3	0.070	0	0	0.18	0.07	0.005
Dichloroethylene, 1,1	75-35-4	0.070	0	0	0.08	0.05	0.005
Trichlorobenzene, 1,2,4	120-82-1	0.070	0	0	0.43	0.21	0.01
Dichlorobenzene, 1,2 -	95-50-1	0.070	0	0	0.5	0.24	0.005
Dichloroethane, 1,2	107-06-2	0.070	0	0	0.65	0.21	0.005
Dichloropropane, 1,2	78-87-5	0.070	0	0	0.7	0.47	0.005
Dichloroethylene, 1,2-trans	156-60-5	0.070	0	0	0.17	0.06	0.005
Dichlorobenzene, 1,3-	541-73-1	0.070	0	0	0.13	0.09	0.005
Dichloropropylene, 1,3	10061-02-6	0.070	0	0	0.13	0.09	0.005
Dichlorobenzene, 1,4-	106-46-7	0.070	0	0	0.09	0.05	0.005
Dichlorophenol, 2,4	120-83-2	0.070	0	0	0.34	0.12	0.01
Dimethylphenol, 2,4-	105-67-9	0.070	0	0	0.11	0.06	0.01
Dinitrophenol, 2,4-	51-28-5	0.070	0	0	0.38	0.22	0.01
Dinitrotoluene, 2,4-	121-14-2	0.070	0	0	0.87	0.35	0.01
Dinitrotoluene, 2,6-	606-20-2	0.070	0	0	1.96	0.78	0.01
Chlorophenol, 2-	95-57-8	0.070	0	0	0.3	0.09	0.01
Nitrophenol, 2-	88-75-5	0.070	0	0	0.21	0.13	0.01
Benzofluoranthene, 3,4-	205-99-2	0.070	0	0	0.19	0.07	0.01
Dinitro-o-cresol, 4,6-	534-52-1	0.070	0	0	0.85	0.24	0.01
Nitrophenol, 4-	100-02-7	0.070	0	0	0.38	0.22	0.01
Acenaphthene	83-32-9	0.070	0	0	0.18	0.07	0.01
Acenaphthylene	208-96-8	0.070	0	0	0.18	0.07	0.01
Acrylonitrile	107-13-1	0.070	0	0	0.74	0.29	0.01
Anthracene	120-12-7	0.070	0	0	0.18	0.07	0.01
Benzene	71-43-2	0.070	0	0	0.42	0.11	0.005
Benzo(a)anthracene	56-55-3	0.070	0	0	0.18	0.07	0.01
Benzo(a)pyrene	50-32-8	0.070	0	0	0.19	0.07	0.01
Benzo(k)fluoranthene	207-08-9	0.070	0	0	0.18	0.07	0.01
Bis(2-ethylhexyl) phthalate	117-81-7	0.070	0	0	0.85	0.32	0.01
Carbon Tetrachloride	56-23-5	0.070	0	0	0.12	0.06	0.005
Chlorobenzene	108-90-7	0.070	0	0	0.09	0.05	0.005
Chloroethane	75-00-3	0.070	0	0	0.82	0.32	0.01
Chloroform	67-66-3	0.070	0	0	0.14	0.06	0.005
Chrysene	218-01-9	0.070	0	0	0.18	0.07	0.01
Diethyl phthalate	84-66-2	0.070	0	0	0.62	0.25	0.01
Dimethyl phthalate	131-11-3	0.070	0	0	0.14	0.06	0.01
Di-n-butyl phthalate	84-74-2	0.070	0	0	0.17	0.08	0.01
Ethylbenzene	100-41-4	0.070	0	0	0.33	0.1	0.005
Fluoranthene	206-44-0	0.070	0	0	0.21	0.08	0.01
Fluorene	86-73-7	0.070	0	0	0.18	0.07	0.01
Hexachlorobenzene	118-74-1	0.070	0	0	0.09	0.05	0.01
Hexachlorobutadiene	87-68-3	0.070	0	0	0.15	0.06	0.01
Hexachloroethane	67-72-1	0.070	0	0	0.17	0.06	0.01
Methyl Chloride (chloromethane)	74-87-3	0.070	0	0	0.58	0.26	0.01
Methylene Chloride	75-09-2	0.070	0	0	0.27	0.12	0.005
Napthalene	91-20-3	0.070	0	0	0.18	0.07	0.01
Nitrobenzene	98-95-3	0.070	0	0	0.21	0.08	0.01
Phenanthrene	85-01-8	0.070	0	0	0.18	0.07	0.01
Phenol	108-95-2	0.070	0	0	0.08	0.05	0.00005
Pyrene	129-00-0	0.070	0	0	0.21	0.08	0.01
Tetrachloroethylene	127-18-4	0.070	0	0	0.17	0.07	0.005
Toluene	108-88-3	0.070	0	0	0.24	0.08	0.005
Trichloroethylene	79-01-6	0.070	0	0	0.17	0.06	0.005
Vinyl Chloride	75-01-4	0.070	0	0	0.82	0.32	0.005
TOTAL				0.081			

Sample taken 5/07/2014 &  
analyzed by PDC Laboratories,  
Inc.

3.500 Pike County  
 Outfall 007 - Fly Ash

Once/dischage at a minimum per calendar week Emergency Bypass (Flyash) - Outfall 007					
Date (MM/DD/YY)	Flow (gpm)	Flow (mgd)	SS (ppm)	pH (SU)	Oil & Grease (ppm)
		Report	100	6.5 - 9.0	"10/15"
05/01/14					
05/02/14					
05/03/14					
05/04/14					
05/05/14					
05/06/14					
05/07/14					
05/08/14					
05/09/14					
05/10/14					
05/11/14					
05/12/14					
05/13/14					
05/14/14					
05/15/14					
05/16/14					
05/17/14					
05/18/14					
05/19/14					
05/20/14					
05/21/14					
05/22/14					
05/23/14					
05/24/14					
05/25/14					
05/26/14					
05/27/14					
05/28/14					
05/29/14					
05/30/14					
05/31/14					
Total	0	0	0		
Average	0	0	0		
Max	0	0	0		

By *Kara Long*  
 Corporate Environmental Engineer

Date 6/20/14



PDC Laboratories, Inc.  
 3278 N Highway 67 • Florissant, MO 63033  
 (314) 432-0550 • (800) 333-FAST • FAX (314) 432-4977



Ashland Hercules Water Technologies  
 Missouri Chemical Works 11083 Highway D  
 Louisiana, MO 63353  
 Attn: Kara Long

Date Received: 05/07/14 16:09  
 Report Date: 05/21/14  
 Customer #: 230878  
 PO#: 4502233229

\*Laboratory Results\*

Sample No: **4051481-01**  
 Sample Description: **006 Annual**

Collect Date: **05/07/14 14:20**  
 Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<b>General Chemistry - STL</b>					
Cyanide	< 0.0050 mg/L		05/19/14 14:00	DWM	SM 4500-CN C E 18Ed*
Phenol	< 0.050 mg/L		05/13/14 10:00	DWM	EPA 420.1 04KS
<b>Semivolatile Organics - STL</b>					
1,2,4-Trichlorobenzene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
1,2-Dichlorobenzene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625*
1,3-Dichlorobenzene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625*
1,4-Dichlorobenzene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625*
2,4,5-Trichlorophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625*
2,4,6-Trichlorophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2,4-Dichlorophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2,4-Dimethylphenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2,4-Dinitrophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2,4-Dinitrotoluene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2,6-Dimethylaniline	< 5.00 ug/L		05/20/14 09:35	BP	EPA 625*
2,6-Dinitrotoluene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2-Chloronaphthalene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2-Chlorophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
2-Nitrophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
3,3'-Dichlorobenzidine	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
4,6-Dinitro-2-methylphenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625*
4-Bromophenyl phenyl ether	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
4-Chloro-3-methylphenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
4-Chlorophenylphenyl ether	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
4-Nitrophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Acenaphthene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Acenaphthylene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Anthracene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Azobenzene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625*
Benzidine	< 10.0 ug/L	Q1	05/20/14 09:35	BP	EPA 625*
Benzo(a)anthracene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Benzo(a)pyrene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Benzo(b&k)fluoranthene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Benzo(b)fluoranthene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS

4051481



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Ashland Hercules Water Technologies  
 Missouri Chemical Works 11083 Highway D  
 Louisiana, MO 63353  
 Attn: Kara Long

Date Received: 05/07/14 16:09  
 Report Date: 05/21/14  
 Customer #: 230878  
 PO#: 4502233229

\*Laboratory Results\*

Sample No: 4051481-01  
 Sample Description: 006 Annual

Collect Date: 05/07/14 14:20  
 Matrix: Waste Water

Parameters	Result	Qual	Analysis Date	Analyst	Method
<b>Semivolatile Organics - STL</b>					
Benzo(g,h,i)perylene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Benzo(k)fluoranthene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Bis(2-chloroethoxy) methane	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Bis(2-chloroethyl) ether	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Bis(2-chloroisopropyl) ether	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Bis(2-ethylhexyl) phthalate	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Butyl benzyl phthalate	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Chrysene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Dibenzo(a,h)anthracene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Diethyl phthalate	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Dimethyl phthalate	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Di-n-butyl phthalate	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Di-n-octyl phthalate	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Diphenylamine	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Fluoranthene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Fluorene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Hexachlorobenzene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Hexachlorobutadiene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Hexachlorocyclopentadiene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Hexachloroethane	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Indeno(1,2,3-cd)pyrene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Isophorone	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Naphthalene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Nitrobenzene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
N-Nitrosodimethylamine	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
N-Nitrosodi-n-propylamine	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Pentachlorophenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Phenanthrene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Phenol	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Pyrene	< 10.0 ug/L		05/20/14 09:35	BP	EPA 625 04KS
Surrogate: 2-Fluorophenol	10 % 10-121		05/16/14 14:31	BP	EPA 625
Surrogate: Phenol- d5	8 % 10-157	T	05/20/14 09:35	BP	EPA 625
Surrogate: Nitrobenzene-d5	30 % 10-109		05/20/14 09:35	BP	EPA 625



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 (314) 432-0550 • (800) 333-FAST • FAX (314) 432-4977



Ashland Hercules Water Technologies  
 Missouri Chemical Works 11083 Highway D  
 Louisiana, MO 63353  
 Attn: Kara Long

Date Received: 05/07/14 16:09  
 Report Date: 05/21/14  
 Customer #: 230878  
 PO#: 4502233229

\*Laboratory Results\*

Sample No: **4051481-01**  
 Sample Description: **006 Annual**

Collect Date: **05/07/14 14:20**  
 Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<b>Semivolatile Organics - STL</b>					
Surrogate: 2-Fluorobiphenyl	21 %	10-107	05/20/14 09:35	BP	EPA 625
Surrogate: 2,4,6-Tribromophenol	17 %	10-74	05/20/14 09:35	BP	EPA 625
Surrogate: p-Terphenyl-d14	33 %	10-133	05/20/14 09:35	BP	EPA 625
<b>Total Metals - STL</b>					
Arsenic	0.015 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Barium	0.071 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Cadmium	< 0.0020 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Chromium	0.018 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Copper	0.043 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Lead	0.035 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Nickel	0.017 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Selenium	0.021 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Silver	< 0.0020 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
Zinc	0.025 mg/L		05/14/14 09:52	WPS	EPA 200.7 R4.4 04KS
<b>Volatile Organics - STL</b>					
1,1,1-Trichloroethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,1,2,2-Tetrachloroethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,1,2-Trichloroethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,1-Dichloroethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,1-Dichloroethene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,2-Dichlorobenzene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,2-Dichloroethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,2-Dichloropropane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,3-Dichlorobenzene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
1,4-Dichlorobenzene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
2-Chloroethylvinyl ether	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Acrolein	< 50 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Acrylonitrile	< 10 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Benzene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Bromodichloromethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Bromoform	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Bromomethane	< 10 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Carbon tetrachloride	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS

4051481



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Ashland Hercules Water Technologies  
 Missouri Chemical Works 11083 Highway D  
 Louisiana, MO 63353  
 Attn: Kara Long

Date Received: 05/07/14 16:09  
 Report Date: 05/21/14  
 Customer #: 230878  
 PO#: 4502233229

\*Laboratory Results\*

Sample No: 4051481-01  
 Sample Description: 006 Annual

Collect Date: 05/07/14 14:20  
 Matrix: Waste Water

Parameters	Result	Qual	Analysis Date	Analyst	Method
<b><u>Volatiles Organics - STL</u></b>					
Chlorobenzene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Chloroethane	< 10 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Chloroform	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Chloromethane	< 10 ug/L		05/15/14 07:53	BP	EPA 624 04KS
cis-1,3-Dichloropropene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Dibromochloromethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Ethylbenzene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
m,p-Xylene	< 10 ug/L		05/15/14 07:53	BP	EPA 624*
Methylene chloride	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
o-Xylene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624*
Tetrachloroethene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Toluene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
trans-1,2-Dichloroethene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
trans-1,3-Dichloropropene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Trichloroethene	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Trichlorofluoromethane	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Vinyl chloride	< 5.0 ug/L		05/15/14 07:53	BP	EPA 624 04KS
Surrogate: 1,2-Dichloroethane-d4	105 % 60.7-121		05/15/14 07:53	BP	EPA 624
Surrogate: Toluene-d8	96 % 60.6-116		05/15/14 07:53	BP	EPA 624
Surrogate: Bromofluorobenzene	104 % 69.7-113		05/15/14 07:53	BP	EPA 624



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Louisiana, MO 63353  
Attn: Kara Long

Date Received: 05/07/14 16:09  
Report Date: 05/21/14  
Customer #: 230878  
PO#: 4502233229

\*Laboratory Results\*

### Notes

This report shall not be reproduced, except in full, without the written approval of the laboratory.

PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by Federal or State Governments or their agencies is not implied.

PIA PDC Laboratories - Peoria, IL

TNI Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230  
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553  
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)  
Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)  
Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)  
UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO  
EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

JER PDC Laboratories - Jerseyville, IL

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17521  
Drinking Water Certifications: Missouri (430)

\* Not a TNI accredited analyte

- T Surrogate recovery failed to meet the required acceptance criteria in the initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery was outside of the required acceptance criteria on the second analysis also.
- Q1 MS Failed %R

Certified by: Barb Pandolfo, Project Manager





Roger A. Ladewig  
Plant Manager

**Ashland Water Technologies**

11083 Highway D  
Louisiana, MO 63353  
Tel: (414) 535-6205; FAX: (414) 614-9561  
Mobile: (414) 614-9561  
riadewig@ashland.com

June 20, 2014

RECEIVED

JUN 23 2014

Ms. G. Irene Crawford  
Regional Director  
Missouri Department of Natural Resources  
1709 Prospect Drive  
Macon, Missouri 63552  
(660) 385-8000

WATER PROTECTION PROGRAM

Re: NPDES Permit MO 0000311  
3.500 Pike County

Dear Ms. Crawford:

Enclosed is the Report of Acute Toxicity Testing for Outfall 001 as required by the referenced permit. Due to failure of FedEx to deliver the WET Test samples taken in mid May to the lab in time to get analyzed, another WET Test was taken May 28.

If you have any questions, please contact me at (614) 790-4641 or Roger Ladewig at the above telephone number.

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,

Kara Long  
Corporate Environmental Engineer

Attachment

CC: Amanda Sappington – MDNR Water Protection Program



# Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



**REPORT OF ACUTE TOXICITY TESTING**  
**Ashland**  
**OUTFALL 001 (24 hour composite) AEC = 10%**  
**MO-0000311**  
**EAS LOG# 1708031**  
**May 28, 2014 through May 30, 2014**

**Tests performed by:**

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)  
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)  
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)  
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. **Report Summation**
  - 1.1. **Data Summation**
  - 1.2. **Conclusion**
2. **Method Summation**
  - 2.1. **Test Conditions and Methods**
  - 2.2. **Potassium chloride Reference Salt Test**
    - 2.2.1. *Pimephales promelas* data
    - 2.2.2. *Ceriodaphnia dubia* data
  - 2.3. **Literature Cited**
3. **Raw Data Bench Sheets**
  - 3.1. **Initial observations (page 1)**
  - 3.2. **Zero hour Observations (page 1)**
  - 3.3. **Twenty-four (24) hour Observations (page 1)**
  - 3.4. **Forty-eight (48) hour Observations (page 1)**
  - 3.5. **Survival Data Table (page 2)**
  - 3.6. **Test Comments (page 3)**
4. **Chain of Custody**
5. **MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)**

# Environmental Analysis South, Inc.

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**REPORT OF ACUTE TOXICITY TESTING**  
**Ashland**  
**OUTFALL 001 (24 hour composite) AEC = 10%**  
**MO-0000311**  
**EAS LOG# 1708031**  
**May 28, 2014 through May 30, 2014**

## 1. REPORT SUMMATION:

### 1.1. Multiple Dilution Data Summation

Test Solution	<i>Pimephales promelas</i> Acute Toxicity Test 48 Hour Survival	<i>Ceriodaphnia dubia</i> Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	100%
2.5% Effluent	100%	100%
5% Effluent	100%	100%
10% Effluent	100%	95%
20% Effluent	55%*	65%
40% Effluent	0%*	10%*
Estimated 48 Hour LC <sub>50</sub> Value	20.71% (17.75%-24.16%)	23.19% Effluent (19.02%-28.28%)
To Pass: All concentrations = or < AEC must not have significant difference to control in survival.	Yes	Yes
Result of Toxicity Test	PASS	PASS

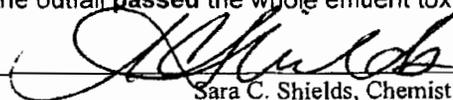
\* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

### Conclusion:

*Pimephales promelas* 48 hour WET results: LC 50 = 20.71% using Trimmed Spearman-Kärber  
NOAEC = 10% by Steel's Many-One Rank Test  
*Ceriodaphnia dubia* 48 hour WET results: LC50 = 23.19% using Trimmed Spearman-Kärber  
NOAEC = 20% by Steele's Many-One Rank Test

Based on these results the outfall passed the whole effluent toxicity test with both indicator species.

Approved by \_\_\_\_\_

  
Sara C. Shields, Chemist

# Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



**REPORT OF ACUTE TOXICITY TESTING**  
**Ashland**  
**OUTFALL 001 (24 hour composite) AEC = 10%**  
**MO-0000311**  
**EAS LOG# 1708031**  
**May 28, 2014 through May 30, 2014**

## 2. TEST METHOD SUMMARY

### 2.1. TEST CONDITIONS AND METHODS:

	<i>Ceriodaphnia dubia</i> :	<i>Pimephales promelas</i> :
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	2
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18<sup>th</sup> edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from C-K Associates Inc. located in Baton Rouge, Louisiana and shipped overnight for use in the whole effluent toxicity test.

# Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



**REPORT OF ACUTE TOXICITY TESTING**  
**Ashland**  
**OUTFALL 001 (24 hour composite) AEC = 10%**  
**MO-0000311**  
**EAS LOG# 1708031**  
**May 28, 2014 through May 30, 2014**

## 2.2. REFERENCE TOXICITY TEST:

Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on May 7, 2014 using KCL Lot #41713. Following are the results:

- 2.2.1. *P. promelas* - 48 hr. Acute Test – LC<sub>50</sub> = 0.912 g/l 95%CI (0.682 g/l -1.142 g/l)  
EAS %CV = 12.6%  
National Warning Limits (75<sup>th</sup> percentile) = 19%CV  
National Control Limits (90<sup>th</sup> percentile) = 33%CV
- 2.2.2. *C. dubia* - 48 hr. Acute Test – LC<sub>50</sub> = 0.468 g/l 95%CI (0.346 g/l - 0.589g/l)  
EAS %CV = 13.0%  
National Warning Limits (75<sup>th</sup> percentile) = 29%CV  
National Control Limits (90<sup>th</sup> percentile) = 34%CV

## 2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*. June 2000. EPA 833-R-00-003.

CLIENT NAME: Ashland, Outfall 001, 24 hr composite

NPDES NUMBER: MO-0000311

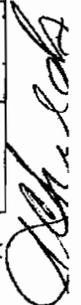
TYPE OF METHOD: multiple dilution, 48 hrs, PP & CD, AEC=10%

DATE & TIME OF COLLECTION: 05/28/14 0700 hrs - 05/27/14 0700 hrs by Lesly J Hall

DATE & TIME OF SUBMISSION: 05/28/14 0855 hrs by Fed Ex

Upstream: Mississippi River  
Collected: 05/27/14

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC					
LOG NUMBER / ID NUMBER						1708031	1708031A	RC4102					
pH - SU	05/28/14	0915 hrs	JPC	SB114 (8.8-9.2)	8.83	7.31	7.27	7.89					
TEMPERATURE °C RECEIVED	05/28/14	0915 hrs	JPC	EAS 106		6	6	23					
SPECIFIC CONDUCTANCE umhos	05/28/14	0915 hrs	JPC	ERA P218-506(286-330)	289	1800	364	259					
HARDNESS - ppm	05/28/14	0915 hrs	JPC	ERA P170-507(107-134)	120	520	160	80					
CHLORINE - ppm	05/28/14	0915 hrs	JPC	tap water	+	<0.04	<0.04	<0.04					
DISSOLVED OXYGEN - ppm	05/28/14	0915 hrs	JPC	cal@840		8	8.4	8.4					
TOTAL ALKALINITY - ppm	05/29/14	1100 hrs	SCS	ERA P218-506(50.2-60.7)	57.0	90	116	66.0					
INITIAL AMMONIA - ppm	06/03/14	1220 hrs	JPC	DMRQA33 (10.0-16.8)	16.3	64.1	<0.05	<0.05					
TOTAL DISSOLVED SOLIDS - ppm													
0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	40%	20%	10%	5.0%	2.5%	X %AEC
pH - SU	05/28/14	1100 hrs	SCS	SB114 (8.8-9.2)	8.83	7.93	7.85	7.23	7.30	7.41	7.49	7.55	
TEMPERATURE °C	05/28/14	1100 hrs	SCS	EAS 106		23.9	23.8	24.5	24.6	24.2	24.1	24.0	
SPECIFIC CONDUCTANCE umhos	05/28/14	1100 hrs	SCS	ERA P218-506(286-330)	289	253	377	1196	762	560	453	408	
DISSOLVED OXYGEN - ppm	05/28/14	1100 hrs	SCS	cal@840		8.5	8.0	8.6	8.5	8.5	8.5	8.6	
24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	40%	20%	10%	5.0%	2.5%	X %AEC
pH - SU	05/29/14	1100 hrs	SCS	SB114 (8.8-9.2)	8.82	7.82	7.47	7.58	7.57	7.56	7.52	7.51	
TEMPERATURE °C	05/29/14	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	05/29/14	1100 hrs	SCS	ERA P218-506(286-330)	319	281	368	1178	778	594	458	409	
DISSOLVED OXYGEN - ppm	05/29/14	1100 hrs	SCS	cal@840		8.1	8	8	8.2	7.9	8	7.9	
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	40%	20%	10%	5.0%	2.5%	X %AEC
pH - SU	05/30/14	1100 hrs	SCS	SB114 (8.8-9.2)	8.83	7.99	7.43	7.49	7.46	7.41	7.39	7.41	
TEMPERATURE °C	05/30/14	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	05/30/14	1100 hrs	SCS	ERA P218-506(286-330)	316	291	376	1170	778	621	471	422	
DISSOLVED OXYGEN - ppm	05/30/14	1100 hrs	SCS	cal@840		8.0	8.0	7.8	8.0	8.0	8.0	8.0	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									
24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	40%	20%	10%	5.0%	2.5%	X %AEC
pH - SU	05/29/14	1100 hrs	SCS	SB114 (8.8-9.2)	8.82	7.79	7.47	7.62	7.65	7.55	7.53	7.51	
TEMPERATURE °C	05/29/14	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	05/29/14	1100 hrs	SCS	ERA P218-506(286-330)	319	282	359	1145	757	563	459	412	
DISSOLVED OXYGEN - ppm	05/29/14	1100 hrs	SCS	cal@840		8.6	9.2	8.5	8.9	8.9	8.8	9.0	
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	40%	20%	10%	5.0%	2.5%	X %AEC
pH - SU	05/30/14	1100 hrs	SCS	SB114 (8.8-9.2)	8.83	7.70	7.54	7.49	7.53	7.58	7.53	7.52	
TEMPERATURE °C	05/30/14	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	05/30/14	1100 hrs	SCS	ERA P218-506(286-330)	316	297	385	1125	756	552	457	407	
DISSOLVED OXYGEN - ppm	05/30/14	1100 hrs	SCS	cal@840		8.6	7.9	8.7	8.7	8.6	8.8	8.4	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

Approved by:  Date: 6/14/14

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027  
Fifth Edition October 2002

Ashland, Outfall 001, 24 hr composite EAS LOG# 1708031  
MO-0000311

Date Test Began: May 28, 2014 Time Test Began: 1100 hrs Analyst 1: DFW  
Date Test Finished: May 30, 2014 Time Test Finished: 1100 hrs Analyst 2: KJR  
Analyst 3: SCS

*P. promelas* (PP) AGE: 9 days HATCH NUMBER: 9094 C-K

PERIOD	RC	UC	40%	20%	10%	5.0%	2.5%	X% AEC
0 HR-PP	ALIVE							
	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
24 HR-PP	10,10	10,10	2,0	10,10	10,10	10,10	10,10	
48 HR-PP	10,10	10,10	0,0	7,4	10,10	10,10	10,10	

*Ceriodaphnia dubia* (CD) AGE: <24 hours HATCH NUMBER: 2866 C-K

PERIOD	RC	UC	40%	20%	10%	5.0%	2.5%	X% AEC
0 HR-CD	ALIVE	ALIVE						
	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
24 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
48 HR-CD	5,5,5,5	5,5,5,5	0,0,2,0	3,2,3,5	5,5,4,5	5,5,5,5	5,5,5,5	

Approved by: 

Date: 6/4/14



Mu. H. H. 10%

**ENVIRONMENTAL ANALYSIS SOUTH, INC.**

4000 East Jackson Blvd  
Jackson, MO 63755  
Phone: (573) 204-8817 Fax: (573) 204-8818



12632c

**WHOLE EFFLUENT TOXICITY TESTING  
CHAIN OF CUSTODY**

CLIENT: Dyna Nobel

NPDES PERMIT NUMBER: MO-0105783

EFFLUENT NAME: Outfall 00T (LEGAL NAME) GRAB  24 HR COMPOSITE

COLLECTION DATA: START DATE: 5-26-14 START TIME: 0700 am

FINISH DATE: 5-27-14 FINISH TIME: 0700 am

UPSTREAM NAME: Mississippi River (LEGAL NAME) (GRAB SAMPLE)

COLLECTION DATA: DATE: 5-27-14 TIME: 0815

SAMPLER NAME: Lesly J. Hall (PRINT NAME) CARRIER: FedEx overnight

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:  
• Sampling & holding time errors (Will results in a setup charge of \$100 to the client)  
• Commercial carrier delivery problems or errors (Will results in a setup charge of \$100 to the client)  
• Problems with health or delivery of test organisms by vendor (No setup charge to client)

**SAMPLER CHECK LIST**  
NO HEADSPACE IN BOTTLES   
SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON 5/28/14   
SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP   
SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 6°C WHEN SHIPPING OVERNIGHT   
RELINQUISHED BY: Lesly J. Hall DATE: 5-27-14 TIME: 0840am

**LABORATORY USE ONLY**  
**EFFLUENT** LOG NUMBER: 1708031  
RECEIVED TEMPERATURE: 6 °C THERMOMETER ASSIGNED NUMBER: \_\_\_\_\_  
HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST  
**UPSTREAM** LOG NUMBER: 1708031A  
RECEIVED TEMPERATURE: 6 °C THERMOMETER ASSIGNED NUMBER: \_\_\_\_\_  
HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST  
RECEIVED BY: John Ceppez DATE: 5/28/14 TIME: 0855 FedEx

05/28/2014



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102

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

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY WATER PROTECTION PROGRAM)

**PART A - TO BE COMPLETED IN FULL BY PERMITTEE**

FACILITY NAME Ashland		DATE & TIME COLLECTED EFFLUENT 05/25/14 0700-05/27/14 0700 UPSTREAM 05/27/14	
PERMIT NUMBER MO-0000311		PERMIT OUTFALL NUMBER Outfall # 001	
COLLECTOR'S NAME Lesly J Hall			
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION Mississippi River			
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC) 10%		EFFLUENT SAMPLE TYPE (CHECK ONE) <input checked="" type="checkbox"/> 24HR COMPOSITE <input type="checkbox"/> GRAB <input type="checkbox"/> OTHER	
SAMPLE NUMBER EFFLUENT 1708031 UPSTREAM 1708031A		UPSTREAM SAMPLE TYPE (CHECK ONE) <input type="checkbox"/> 24HR COMPOSITE <input checked="" type="checkbox"/> GRAB <input type="checkbox"/> OTHER	
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE _____ mg/L		PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA _____ mg/L	

**PART B - TO BE COMPLETED IN FULL BY PERFORMING LABORATORY**

PERFORMING LABORATORY Environmental Analysis South, Inc.		TEST TYPE Acute Static Non renewal Test Multiple Dilution	
FINAL REPORT NUMBER MO_1708031		TEST DURATION 48 hour	
DATE OF LAST REFERENCE TOXICANT TESTING May 7, 2014		TEST METHOD Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY 05/28/14 0855 hrs by Fed Ex		TEST START DATE AND TIME 05/28/14 1100 hrs	TEST END DATE AND TIME 05/30/14 1100 hrs
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		TEST ORGANISM #1 AND AGE Pimephales promelas 9 days	TEST ORGANISM #2 AND AGE Ceriodaphnia dubia < 24 hours
SAMPLE FILTERED <sup>1</sup> PRIOR TO ANALYSIS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		90% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	DILUTION WATER USED TO ACHIEVE AEC upstream 1708031A
FILTER MESH SIEVE SIZE <sup>2</sup> None		EFFLUENT ORGANISM #1 % MORTALITY AT AEC LC50=20.71% Effluent	EFFLUENT ORGANISM #2 % MORTALITY AT AEC LC50=23.19% Effluent
SAMPLE AERATED DURING TESTING? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		UPSTREAM ORGANISM #1 % MORTALITY 0%	UPSTREAM ORGANISM #2 % MORTALITY 0%
pH ADJUSTED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO EFFLUENT _____ UPSTREAM _____		TEST RESULT AT AEC FOR ORGANISM #1 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL	TEST RESULT AT AEC FOR ORGANISM #2 <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

**MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE**

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	6	SM18 2550B stored at 4 degree C until test setup	05/28/14 0915 hrs
pH Standard Units	7.31	SM18 4500-H B	05/28/14 0915 hrs
Conductance µMols	1800	SM18 2510B	05/28/14 0915 hrs
Dissolved Oxygen mg/L	8.0	03/12/14 0945 hrs SM18 4500-O G	05/28/14 0915 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-CI G	05/28/14 0915 hrs
Unionized Ammonia mg/L	64.1x0.01=0.64	SM18 4500-NH3 F @ 25 degree C	06/03/14 1220 hrs
*Total Alkalinity mg/L	90.0	SM18 2320B	05/29/14 1100 hrs
*Total Hardness mg/L	520	SM18 2340 C	05/28/14 0915 hrs

\*Recommended by USEPA guidance, not a required analysis.

<sup>1</sup> Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.  
<sup>2</sup> Filters shall have a sieve size of 60 microns or greater.

## WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE <sup>3</sup>			
PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	6	SM18 2550B stored at 4 degree C until test setup	05/28/14 0915 hrs
pH Standard Units	7.27	SM18 4500-H B	05/28/14 0915 hrs
Conductance µMols	364	SM18 2510B	05/28/14 0915 hrs
Dissolved Oxygen mg/L	8.4	SM18 4500-O G	05/28/14 0915 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	05/28/14 0915 hrs
Unionized Ammonia mg/L	<0.05x0.01<0.010	SM18 4500-NH3 F @ 25 degree C	06/03/14 1220 hrs
*Total Alkalinity mg/L	116	SM18 2320B	05/29/14 1100 hrs
*Total Hardness mg/L	160	SM18 2340 C	05/28/14 0915 hrs

\*Recommended by USEPA guidance, not a required analysis.

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)
<b>PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC):</b> As indicated on permit. Test is invalid otherwise.
<b>EFFLUENT SAMPLE TYPE:</b> As indicated on permit. Test is invalid otherwise.
<b>TEST TYPE:</b> Acute Static Non-Renewal Test or other as indicated on permit. Test is invalid otherwise.
<b>TEST DURATION:</b> Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.
<b>TEST ORGANISMS:</b> As indicated on permit. Test is invalid otherwise.
<b>DILUTION WATER USED TO ACHIEVE AEC:</b> Upstream receiving water required if available.
<b>TEST METHOD:</b> The only acceptable method is the <i>most current edition</i> of <u>Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms</u> , or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.
<b>TEST START DATE &amp; TIME:</b> Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.
<b>FILTER MESH SIEVE SIZE:</b> Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.
<b>90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N):</b> If NO, test is invalid.

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature °C	0 - 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

<sup>3</sup> Where no upstream control is available, enter results from laboratory or synthetic control.



Hercules-LOMO

Hackler, Pam

to:

Kara Long

08/08/2014 12:14 PM

Hide Details

From: "Hackler, Pam" &lt;pam.hackler@dnr.mo.gov&gt;

To: Kara Long/EHS/CORP/Ashland@Ashland,

History: This message has been replied to and forwarded.

RECEIVED

AUG 12 2014

WATER PROTECTION PROGRAM

Good morning Kara,

I have a question regarding your permit application for a modification regarding removing all of the outfalls from the permit as the production has ceased at the Hercules/Ashland (MO-0000311) facility. At this time, the facility has two options regarding the permit modification.

1. Would you like us to modify the permit as soon as possible to remove the outfalls knowing that in December we will have to re-modify the permit once the groundwater monitoring data is submitted (special condition #15)? A second mod fee will be incurred. Or
2. Wait to modify the permit once special condition #15 has been completed? You will need to report "no discharge" on your discharge monitoring report for each reporting period henceforth until the mod is completed.

Regardless of which option you choose, **please re-submit the first two pages of Form A as there is no signature on the one we've received.** I'd also like to inform you, regarding your request for permit termination, the request has been denied by the department at this time because not all of the conditions of the current permit have been met.

Thank you. If you have any questions you may reply to my email or give me a call at the number below. Have a great weekend!

## **Pam Hackler**

Pam Hackler, Environmental Specialist

Missouri Department of Natural Resources

Division of Environmental Quality/Water Protection Program

Tel: 573-526-3386

Email: [pam.hackler@dnr.mo.gov](mailto:pam.hackler@dnr.mo.gov)

*Celebrating 40 years of taking care of Missouri's resources. To learn more about the Missouri Department of Natural Resources visit [dnr.mo.gov](http://dnr.mo.gov).*



Please consider the environment before printing this e-mail.

copy - signed Form A



Environmental, Health and Safety

Ashland Inc.  
P.O. Box 2219  
Columbus, OH 43216  
Tel: 614-790-3333, Fax: 614-790-6080  
www.ashland.com

June 23, 2014

Ms. Amanda Sappington  
Water Pollution Control Branch  
Missouri Department of Natural Resources  
1101 Riverside Dr.  
Jefferson City, MO 65101

RECEIVED

AUG 12 2014

WATER PROTECTION PROGRAM

Re: NPDES Permit MO 0000311  
3.500 Pike County

Dear Ms. Sappington:

Enclosed please find the required forms and fee to modify the permit referenced above. At this time we would like to remove Outfall 001, 006, and 007 from this permit. Outfall 007 is no longer present due to the closure of the ash ponds. Since the ash ponds have been closed, Ashland no longer contributes industrial discharge to Outfall 001 since all manufacturing operations at this site for Ashland have ceased. We request Outfall 006 be transferred to Calumet for use in their future wastewater treatment options. Ashland will no longer be discharging to Outfall 006 since the previous waste water ponds have been cleaned of sludge and filled in. It is our understanding that Calumet has already submitted an application to acquire Outfall 006. With the removal of these outfalls from this permit, there will no longer be any permitted outfalls for this site for Ashland. Ashland at this time requests that this permit be terminated. We appreciate your review of this matter! If you have any questions, please contact me either by email [klong@ashland.com](mailto:klong@ashland.com) or phone at (614) 790-4641.

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,

Kara Long  
Corporate Environmental Engineer

Attachment

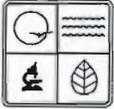
CC:

Ms. G. Irene Crawford  
Regional Director  
Missouri Department of Natural Resources  
1709 Prospect Drive  
Macon, Missouri 63552  
(660) 385-8000

RECEIVED

AUG 12 2014

No Fee Received



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
FORM A - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT  
UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	8/12/14
FEE SUBMITTED	0

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

An operating permit and antidegradation review public notice

A construction permit following an appropriate operating permit and antidegradation review public notice

A construction permit and concurrent operating permit and antidegradation review public notice

A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)

An operating permit for a new or unpermitted facility Construction Permit # \_\_\_\_\_

An operating permit renewal: permit # MO-\_\_\_\_\_ Expiration Date \_\_\_\_\_

An operating permit modification: permit # MO-0000311 Reason: Remove Outfalls

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee)  YES  NO

2. FACILITY

NAME HERCULES INCORPORATED		TELEPHONE WITH AREA CODE (614) 790-4641	
ADDRESS (PHYSICAL) 11083 HIGHWAY D		FAX (614) 790-6080	
CITY LOUISIANA	STATE MO	ZIP CODE 63353	

3. OWNER

NAME ASHLAND INC.		E-MAIL ADDRESS klong@ashland.com	TELEPHONE WITH AREA CODE (614) 790-4641
ADDRESS (MAILING) 5200 BLAZER PARKWAY, EH&S		FAX (614) 790-6080	
CITY DUBLIN	STATE OH	ZIP CODE 43017	

3.1 Request review of draft permit prior to public notice?  YES  NO

4. CONTINUING AUTHORITY

NAME ASHLAND INC.		TELEPHONE WITH AREA CODE (614) 790-4641	
ADDRESS (MAILING) 5200 BLAZER PARKWAY, EH&S		FAX (614) 790-6080	
CITY DUBLIN	STATE OH	ZIP CODE 43017	

5. OPERATOR

NAME ASHLAND WATER TECHNOLOGIES		CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE (614) 790-4641
ADDRESS (MAILING) 11083 HIGHWAY D		FAX (614) 790-6080	
CITY LOUISIANA	STATE MO	ZIP CODE 63353	

6. FACILITY CONTACT

NAME KARA LONG		TITLE CORPORATE ENV. ENGINEER	TELEPHONE WITH AREA CODE (614) 790-4641
		FAX (614) 790-6080	

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_  
*For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)*

002 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_

003 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_

004 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 Sec \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ County \_\_\_\_\_  
 UTM Coordinates Easting (X): \_\_\_\_\_ Northing (Y): \_\_\_\_\_

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 - SIC \_\_\_\_\_ and NAICS \_\_\_\_\_ 002 - SIC \_\_\_\_\_ and NAICS \_\_\_\_\_  
 003 - SIC \_\_\_\_\_ and NAICS \_\_\_\_\_ 004 - SIC \_\_\_\_\_ and NAICS \_\_\_\_\_

**8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION**  
 (Complete all forms that are applicable.)

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? YES  NO   
 If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).
- B. Is your facility considered a "Primary Industry" under EPA guidelines: YES  NO   
 If yes, complete Forms C and D.
- C. Is application for storm water discharges only? YES  NO   
 If yes, complete EPA Form 2F.
- D. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.
- E. Is wastewater land applied? If yes, complete Form I. YES  NO
- F. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? YES  NO   
 If yes, complete Form R.

**9. DOWNSTREAM LANDOWNER(S)** Attach additional sheets as necessary. See Instructions.  
 (PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME			
ADDRESS		CITY	STATE
			ZIP CODE

10. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE WITH AREA CODE
Kara Long, Corporate Environmental Engineer	(614) 790-4641
SIGNATURE <i>Kara Long</i>	DATE SIGNED 6/23/14

MO 780-1479 (01-09)

**BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.**

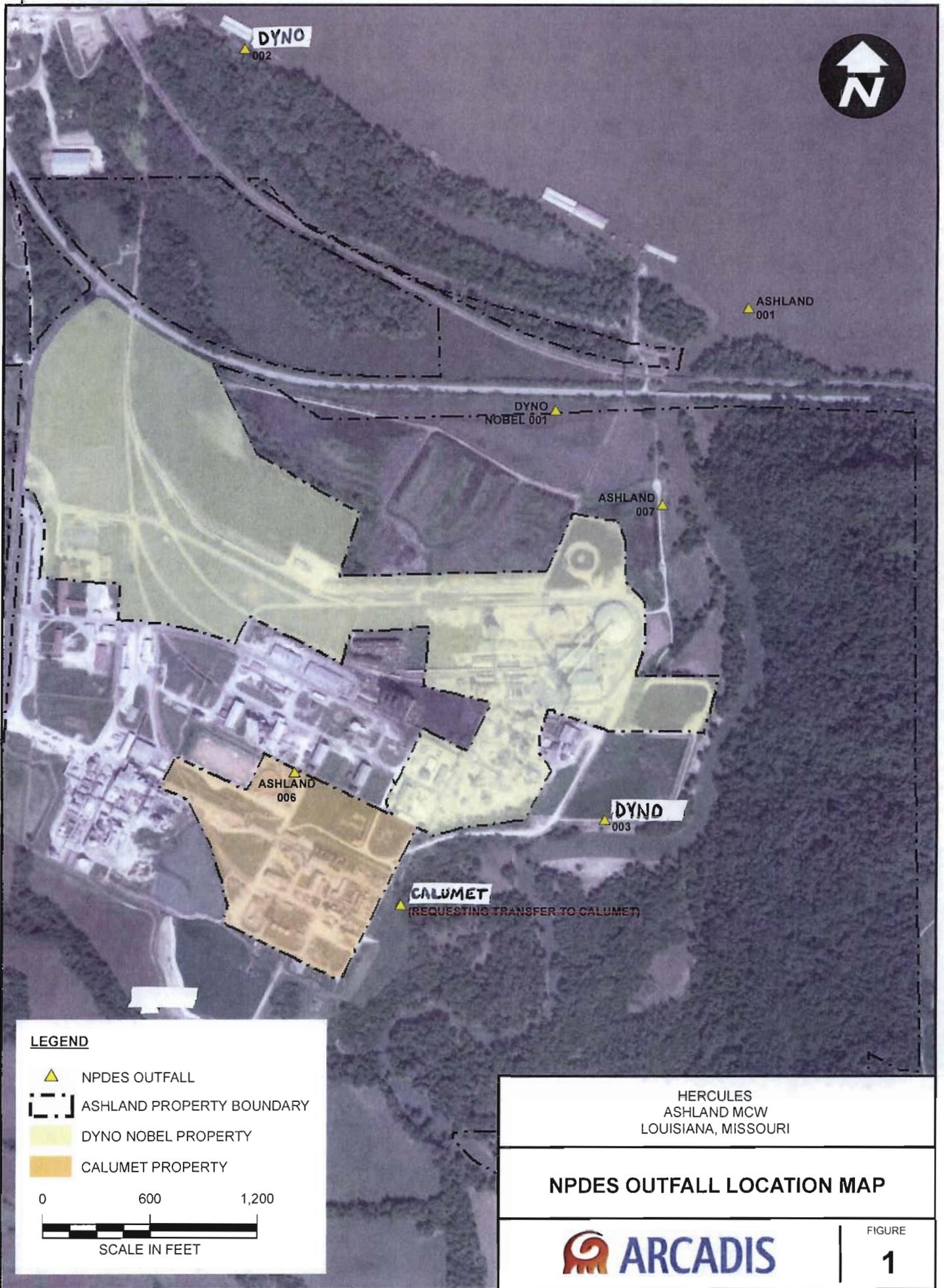
Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- Appropriate Fees?
- Map at 1" = 2000' scale?
- Signature?
- Form C, if applicable?
- Form D, if applicable?
- Form 2F, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?

Ashland Hercules MO-000311 Outfalls Locations

Outfall	DMS			UTM			Receiving Water	Legal Description				Status
	Lat	Long	Easting	Northing	1/4	1/4		Sec	Twn	Range		
001	392555.0	+910107.0	670531	4366585	Mississippi River	E	SW	21	54-N	1W	Request to Remove from permit	
002	392610.0	+910143.0	669660	4367029	Mississippi River	NW	SE	20	54-N	1W	Transferred to Dyno	
003	392527.0	+910118.0	670286	4365716	Buffalo Creek	SW	NW	28	54-N	1W	Transferred to Dyno	
005	392523.0	+910133.0	669930	4365585	Buffalo Creek	SE	NE	29	54-N	1W	Transferred to Calumet	
006	392530.0	+910140.0	669750	4365797	Mississippi River	SE	NE	29	54-N	1W	Request to Transfer to Calumet	
007	392544.3	+910113.4	670384	4366251	Buffalo Creek	NW	NW	28	54-N	1W	Request to Remove from permit	



**LEGEND**

- NPDES OUTFALL
- ASHLAND PROPERTY BOUNDARY
- DYNO NOBEL PROPERTY
- CALUMET PROPERTY



HERCULES  
ASHLAND MCW  
LOUISIANA, MISSOURI

**NPDES OUTFALL LOCATION MAP**



FIGURE

**1**