

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

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

Permit No. MO-0000299

Owner: SunEdison Semiconductor, LLC
Address: 501 Pearl Drive, Mail Zone 65, St. Peters, MO 63376

Continuing Authority: Same as above
Address: Same as above

Facility Name: SunEdison Semiconductor
Facility Address: 501 Pearl Drive, Mail Zone 65, St. Peters, MO 63376

Legal Description: See page two
UTM Coordinates: See page two

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

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

FACILITY DESCRIPTION

This facility manufactures silicon wafers for the electronics industry. See page two. A certified wastewater operator is not required. Facility has ceased land applying industrial sludges. This permit does not authorize land application. Major facility.

This permit authorizes only wastewater and stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Sections 640.013, 621.250, and 644.051.6 of the Law.

March 1, 2017
Effective Date

Steven Feeler, Acting Director, Division of Environmental Quality

December 31, 2019
Expiration Date

David J. Lamb, Acting Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #001 – Industrial Process Wastewater; SIC # 3674; NAICS # 334413

Reverse osmosis reject, air handler condensate, non-contact cooling water, treated groundwater, stormwater

Legal Description: SE¼, Sec.22, T47N, R3E, St. Charles County
UTM Coordinates: X = 703026, Y = 4298860
Receiving Stream: Tributary to Belleau Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) WBID# 3960 - Locally known as Belleau Creek
USGS Basin & Sub-watershed No.: Lower Dardenne Creek (07110009-0105)
Design Flow: 1.2 MGD
Average Flow: 0.366 MGD

OUTFALL #002 – Industrial Process Wastewater; SIC # 3674; NAICS # 334413

Stormwater, non-contact cooling water, treated groundwater, air handler condensate

Legal Description: SW¼, Sec.23, T47N, R3E, St. Charles County
UTM Coordinates: X = 703034, Y = 4298728
Receiving Stream: Tributary to Belleau Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) WBID# 3960 - Locally known as Belleau Creek
USGS Basin & Sub-watershed No.: Lower Dardenne Creek (07110009-0105)
Design Flow: 0 MGD
Average Flow: 0 MGD

OUTFALL #003 – Industrial Process Wastewater; SIC # 3674; NAICS # 334413

Stormwater, reverse osmosis reject, groundwater wells, air handler condensate

Legal Description: SE¼, Sec.22, T47N, R3E, St. Charles County
UTM Coordinates: X = 702966, Y = 4298792
Receiving Stream: Tributary to Belleau Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) WBID# 3960 - Locally known as Belleau Creek
USGS Basin & Sub-watershed No.: Lower Dardenne Creek (07110009-0105)
Design Flow: 0 MGD
Average Flow: 0 MGD

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #001, #002, #003		TABLE A-1 INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on March 1, 2017 and remain in effect through February 28, 2020 . Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/month	24 hr. total
Precipitation	inches	*		*	once/month	24 hr total
Temperature (Note B)	°F	*		*	once/month	measured
CONVENTIONAL						
Oil & Grease	mg/L	15		10	once/month	grab
pH (Note A)	SU	6.5 to 9.0		6.5 to 9.0	once/month	grab
Settleable Solids	mL/L/hr	*		*	once/month	grab
Total Suspended Solids	mg/L	80		60	once/month	grab
METALS						
Arsenic, Total Recoverable	µg/L	33.3		13.6	once/month	grab
Chromium (VI), Dissolved	µg/L	*		*	once/month	grab
Copper, Total Recoverable	µg/L	64.0		27.3	once/month	grab
Silver, Total Recoverable	µg/L	*		*	once/month	grab
Zinc, Total Recoverable	µg/L	*		*	once/month	grab
OTHER						
Chloride	mg/L	*		*	once/month	grab
Chloride Plus Sulfate	mg/L	*		*	once/month	grab
Fluoride	mg/L	5.5		3.2	once/month	grab
Sulfate	mg/L	*		*	once/month	grab
Trichloroethylene	µg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2017</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
WET						
Whole Effluent Toxicity, Chronic See special Condition #15 (& Note B)	TU _c	*			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>YEARLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2018</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

OUTFALL #001, #002, #003		TABLE A-2 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on March 1, 2020 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/month	24 hr. total
Precipitation	inches	*		*	once/month	24 hr total
Temperature (Note B)	°F	*		*	once/month	measured
CONVENTIONAL						
Oil & Grease	mg/L	15		10	once/month	grab
pH (Note A)	SU	6.5 to 9.0		6.5 to 9.0	once/month	grab
Settleable Solids	mL/L/hr	*		*	once/month	grab
Total Suspended Solids	mg/L	80		60	once/month	grab
METALS						
Arsenic, Total Recoverable	µg/L	33.3		13.6	once/month	grab
Chromium (VI), Dissolved	µg/L	*		*	once/month	grab
Copper, Total Recoverable	µg/L	64.0		27.3	once/month	grab
Silver, Total Recoverable	µg/L	*		*	once/month	grab
Zinc, Total Recoverable	µg/L	*		*	once/month	grab
OTHER						
Chloride	mg/L	301		211	once/month	grab
Chloride Plus Sulfate	mg/L	1000		1000	once/month	grab
Fluoride	mg/L	5.5		3.2	once/month	grab
Sulfate	mg/L	*		*	once/month	grab
Trichloroethylene	µg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2020</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
WET						
Whole Effluent Toxicity, Chronic See special Condition #15 (& Note B)	TU _c	*			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2021</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

* Monitoring and reporting requirement only

Note A The facility will report the minimum and maximum values. pH is not to be averaged.

Note B Parameter applicable to outfall #001 only. The facility shall sample for this parameter when there is no influence of stormwater in the discharge.

B. STANDARD CONDITIONS

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

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test, or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls 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:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

C. SPECIAL CONDITIONS (CONTINUED)

4. Changes in Discharges of Toxic Pollutant

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

- (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
 - (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
 - (4) One milligram per liter (1 mg/L) for antimony;
 - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
 - (6) The notification level established by the department in accordance with 40 CFR 122.44(f).
- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
 - (4) The level established by the Director in accordance with §122.44(f).

5. Report as no-discharge when a discharge does not occur during the report period.

6. 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 report the “Non-Detect” result using the less than sign and the minimum detection limit (e.g. <10).
- (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
- (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
- (f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).

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

8. Any pesticide used 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.

9. The purpose of the Stormwater Pollution Prevention Plan (SWPPP) and the Best Management Practices (BMPs) listed herein is the prevention of pollution [10 CSR 20-2.010(56)] of waters of the state. A deficiency of a BMP means it was not effective in preventing pollution of waters of the state exceeding Missouri’s water quality criteria; and corrective actions means the facility took steps to eliminate the deficiency.

C. SPECIAL CONDITIONS (CONTINUED)

10. Electronic Discharge Monitoring Report (eDMR) Submission System
- (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
 - (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
 - (1) Schedule of Compliance Progress Reports; and
 - (2) Any additional report required by the permit excluding bypass reporting.After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
 - (c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
 - (1) Permit Applications/Notices of Intent to discharge (NOIs);
 - (2) Notices of Termination (NOTs);
 - (3) No Exposure Certifications (NOEs);
 - (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: <https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>.
11. The facility's SIC code(s) is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a SWPPP which must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the department unless specifically requested. The SWPPP must be reviewed and updated every five (5) years or as site conditions change (see Part III: Antidegradation Analysis and SWPPP sections in the fact sheet). The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in February 2009 (www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf). The SWPPP must include:
- (a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater. The BMPs should be designed to treat the stormwater up to the 10 year, 24 hour rain event.
 - (b) For new or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. Failure to implement and maintain the chosen BMP is a permit violation. For further guidance, consult the antidegradation implementation procedure at <http://dnr.mo.gov/env/wpp/docs/AIPO50212.pdf>.
 - (c) The SWPPP must include a schedule for once per month site inspections and brief written reports (it is noted the inspection checklist may serve as the report). The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
 - i. Operational deficiencies must be corrected within seven (7) calendar days.
 - ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
 - iii. Major structural deficiencies must be reported to the regional office within seven (7) days of discovery. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including the general timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. The permittee will work with the regional office to determine the best course of action, including but not limited to temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
 - iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs.
 - v. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to department and EPA personnel upon request.
 - (d) A provision for designating an individual to be responsible for environmental matters.
 - (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the department.

C. SPECIAL CONDITIONS (CONTINUED)

12. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
 - (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances.
 - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
 - (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property to comply with general water quality criteria, effluent limits, or benchmarks. This could include the use of straw bales, silt fences, or sediment basins, if needed.
 - (f) Ensure adequate provisions are provided to prevent surface water intrusion into the storage basin, to divert stormwater runoff around the storage basin, and to protect embankments from erosion.
13. To protect the general criteria found at 10 CSR 20-7.031(4), before releasing water accumulated in secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen. If the presence of odor or sheen is indicated, the water shall be treated using an appropriate method or disposed of in accordance with legally approved methods, such as being sent to a wastewater treatment facility. Following treatment, the water shall be tested for oil and grease, benzene, toluene, ethylbenzene, and xylene using 40 CFR part 136 methods. All pollutant levels must be below the most protective, applicable standards for the receiving stream, found in 10 CSR 20-7.031 Table A. Records of all testing and treatment of water accumulated in secondary containment shall be stored in the SWPPP to be available on demand to DNR and EPA personnel.
14. Any reportable spill as defined by 10 CSR 24-3.010 requires a record of such spill be retained with the SWPPP and made available to the department upon request.
15. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows: (Outfall #001 ONLY)
 - (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
 - o The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
 - o The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
 - (b) Chemical and physical analysis of the effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The facility shall use moderately hard or hard laboratory water as the control as there is no upstream point of the discharge.
 - (e) The Allowable Effluent Concentration (AEC) is 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
 - (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
 - (g) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include temperature (°F), pH (SU), conductivity (µmohs/cm), dissolved oxygen (mg/L), total residual chlorine (mg/L), ammonia as N (mg/L), total alkalinity (mg/L), total hardness (mg/L), total recoverable arsenic (µg/L), total recoverable copper (µg/L), chloride (mg/L), and fluoride (mg/L).
 - (h) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.

D. SCHEDULE OF COMPLIANCE

Schedules of compliance are allowed under 40 CFR 122.47. The facility shall attain compliance with final effluent limitations established in this permit as soon as reasonably achievable:

1. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits January 28 each year. The first report is due January 28, 2018.
2. Within three years of the effective date of this permit and as soon as practicable, the permittee shall attain compliance with the final effluent limits at outfall #001, #002, and #003, for chloride, and chlorides plus sulfates.

Please submit progress reports via the eDMR system.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0000299
SUNEDISON SEMICONDUCTOR**

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

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

Part I. FACILITY INFORMATION

Facility Type: Major Categorical Primary Industrial
 Facility SIC Code(s): 3674
 Facility NAICS Code: 334413
 Application Date: 06/14/2016
 Modification Date: 07/22/2013
 Expiration Date: 12/01/2015
 Last Inspection: 06/24/2015 in compliance

FACILITY DESCRIPTION:

This facility manufactures silicon wafers for the electronics industry. The facility has cooling towers.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.366 MGD	1.2 MGD	sedimentation	Reverse osmosis reject, air handler condensate, non-contact cooling water, treated groundwater, stormwater
#002	0 MGD	0 MGD	none (overflow)	Stormwater, non-contact cooling water, treated groundwater, air handler condensate
#003	0 MGD	0 MGD	none (overflow)	stormwater, reverse osmosis reject, groundwater wells, air handler condensate

FACILITY PERFORMANCE HISTORY & COMMENTS:

The electronic discharge monitoring reports were reviewed for the last five years. Exceedances of arsenic, copper, and fluoride were noted. However, the facility submitted a water-effects ratio biotic ligand study to the department which was accepted. Effluent limitations will be elevated per the study which will likely eliminate copper exceedances. To assure the elevated limitations have no synergistic effects on the discharge, the department has determined increasing the frequency of WET testing to be appropriate. The facility will not have WET limitations at this time, but monitoring will advise how to proceed at the next permit renewal. Arsenic concentrations found below are the result of the facility not using sufficiently sensitive analytical methodology. The facility has corrected the issue.

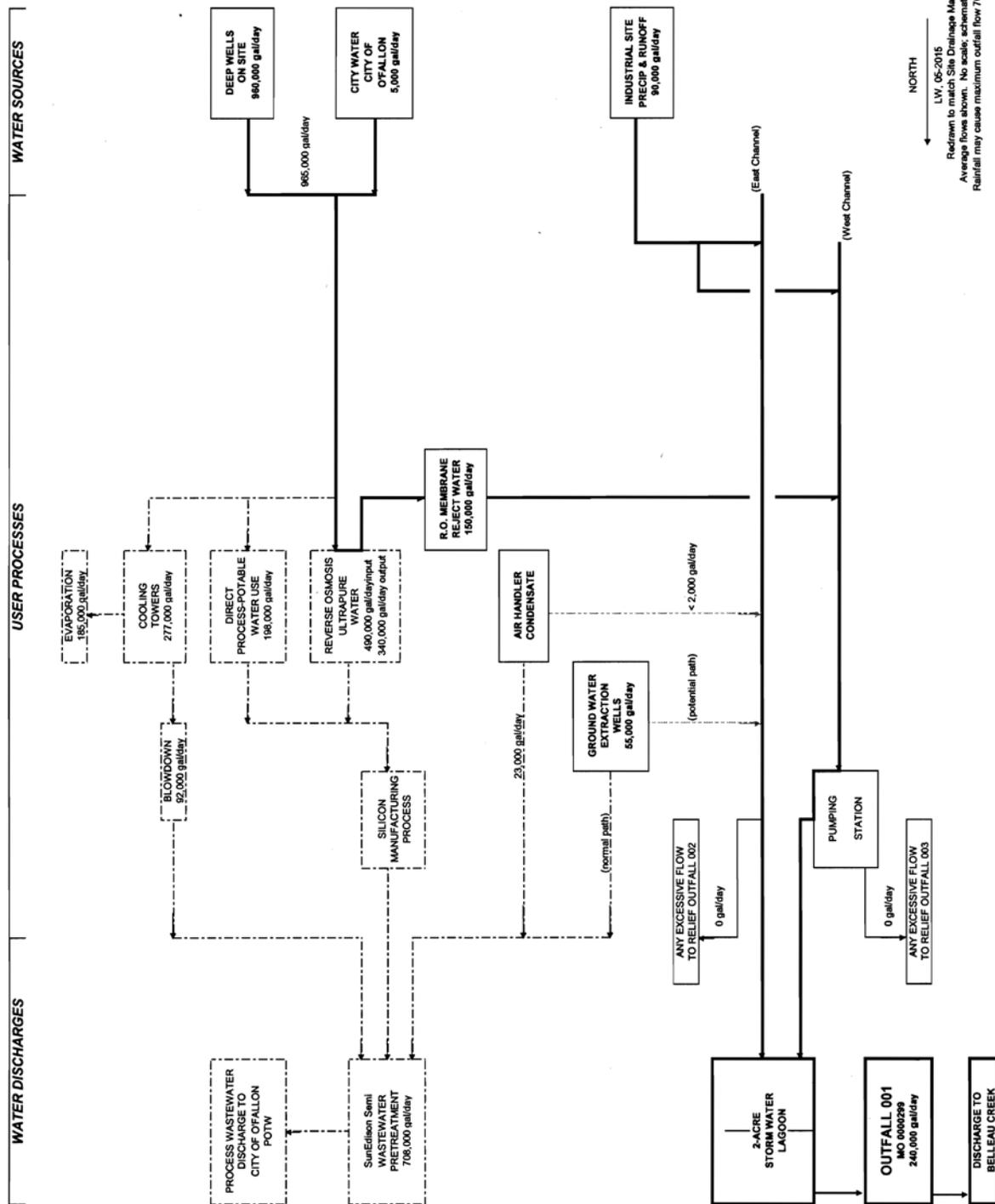
<i>PF No</i>	<i>Monitoring Period Ending Date</i>	<i>Parameter Description</i>	<i>Units</i>	<i>Daily Max Limit</i>	<i>Reported</i>	<i>Monthly Average Limit</i>	<i>Reported</i>
001	01/31/2014	Arsenic, total recoverable	ug/L	36.9	20	13.6	20
001	12/31/2012	Arsenic, total recoverable	ug/L	36.9	15	13.6	15
001	01/31/2012	Arsenic, total recoverable	ug/L	36.9	15	13.6	15
001	12/31/2011	Arsenic, total recoverable	ug/L	36.9	15	13.6	15
001	02/28/2014	Copper, total recoverable	ug/L	22	8.9	7.4	8.9
001	11/30/2013	Copper, total recoverable	ug/L	22	8.8	7.4	8.8
001	10/31/2013	Copper, total recoverable	ug/L	22	9.2	7.4	9.2
001	08/31/2013	Copper, total recoverable	ug/L	22	8	7.4	8
001	07/31/2013	Copper, total recoverable	ug/L	22	8.2	7.4	8.2
001	06/30/2013	Copper, total recoverable	ug/L	22	16	7.4	16
001	04/30/2013	Copper, total recoverable	ug/L	22	9.3	7.4	9.3
001	03/31/2013	Copper, total recoverable	ug/L	22	9.1	7.4	9.1
001	02/28/2013	Copper, total recoverable	ug/L	22	9	7.4	9
001	01/31/2013	Copper, total recoverable	ug/L	22	11	7.4	11
001	12/31/2012	Copper, total recoverable	ug/L	22	8.5	7.4	8.1
001	09/30/2012	Copper, total recoverable	ug/L	22	11	7.4	11
001	08/31/2012	Copper, total recoverable	ug/L	22	9.3	7.4	9.3
001	07/31/2012	Copper, total recoverable	ug/L	22	13	7.4	13
001	06/30/2012	Copper, total recoverable	ug/L	22	19	7.4	19
001	05/31/2012	Copper, total recoverable	ug/L	22	12	7.4	12
001	04/30/2012	Copper, total recoverable	ug/L	22	9.8	7.4	9.8
001	03/31/2012	Copper, total recoverable	ug/L	22	9.1	7.4	9.1
001	02/29/2012	Copper, total recoverable	ug/L	22	8.8	7.4	8.8
001	01/31/2012	Copper, total recoverable	ug/L	22	10	7.4	9.8
001	02/29/2012	Fluoride, total (as F)	mg/L	7	3.6	3.2	3.6
002	06/30/2013	Copper, total recoverable	ug/L	22	25	7.4	25
002	05/31/2013	Copper, total recoverable	ug/L	22	21	7.4	21
003	06/30/2013	Copper, total recoverable	ug/L	22	11	7.4	11
003	05/31/2013	Copper, total recoverable	ug/L	22	8.7	7.4	8.7
003	09/30/2012	Copper, total recoverable	ug/L	22	12	7.4	12

FACILITY MAP:



WATER BALANCE DIAGRAM:

Form C, Fig. 2.40 A, FACILITY WATER PATH LINE DRAWING



MAJOR WATER USER:

The facility has registered as a major water user with the state. The most recent data (2014) show the facility used 252,380,000 gallons of groundwater. Most is discharged to waters of the state. In the renewal application materials, the facility indicated they use 0.960 MGD from the deep wells on site, and 0.055 MGD from groundwater extraction wells on site. Total is 1.015 MGD.

Part II. RECEIVING STREAM INFORMATION

RECEIVING WATER BODY'S WATER QUALITY:

The receiving stream has no concurrent water quality data available.

303(D) LIST:

Section 303(d) of the federal Clean Water Act requires each state identify waters 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 impaired waters not addressed by normal water pollution control programs. <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>

✓ 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; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. <http://dnr.mo.gov/env/wpp/tmdl/>

✓ Not applicable; this facility is not associated with a TMDL.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

✓ As per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], the waters of the state are divided into the following seven categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's effluent limitation table and further discussed in the derivation & discussion of limits section.

- Missouri or Mississippi River:
- Lake or Reservoir:
- Losing:
- Metropolitan No-Discharge:
- Special Stream:
- Subsurface Water:
- All Other Waters:

MIXING CONSIDERATIONS:

Mixing zone: not allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

Zone of initial dilution: not allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements are recommended at this time.

RECEIVING STREAMS TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	DISTANCE TO SEGMENT (MILES)	12-DIGIT HUC
#001	Tributary to Belleau Creek	n/a	n/a	GEN	0.0	07110009-0105 Lower Dardenne Creek
#002	8-20-13 MUDD V1.0 - locally known as Belleau Creek	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0.08	
#003					0.16	
					0.12	

n/a not applicable

WBID = Waterbody IDentification: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip

* As per 10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;

WBC-A = Whole body contact recreation supporting swimming uses and has public access;

WBC-B = Whole body contact recreation supporting swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation for use on crops utilized for human or livestock consumption;

LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply;

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation; **WHP** = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; **WHC** = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): **GRW** = Groundwater

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:

Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

- ✓ Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
- ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
 - Five years of DMR data were available to the permit writer and site specific hardness data supplied by the permittee shows the in-stream hardness to be greater than previously used in calculations. This support removal of limitations of: hexavalent chromium,
 - This permit changes WET testing requirements from pass/fail to monitoring only for toxic units. This change reflects modifications to Missouri's Effluent Regulation found at 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requiring the department to establish effluent limitations to control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed a pass/fail limitation without collecting sufficient numerical data to conduct an analytical reasonable potential analysis.

ANTIDegradation REVIEW:

For process water discharge with new, altered, or expanding discharges, the department is to document, by means of antidegradation review, if the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the department prior to establishing, altering, or expanding discharges. See <http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm>

- ✓ Not applicable; the facility has not submitted information proposing expanded or altered process water discharge; no further degradation proposed therefore no further review necessary.

For stormwater discharges with new or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

- ✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate.

BENCHMARKS:

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer. Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the limitations of the permit.

Because of the fleeting nature of stormwater discharges, the department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement determined by the site specific conditions including the receiving water's current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

Numeric benchmark values are based on water quality standards or other stormwater permits including guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP). Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an

unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.

✓ Not applicable; this facility does not have any stormwater-only outfalls.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e. fertilizer). Sewage sludge is solid, semi-solid, 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 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: <http://extension.missouri.edu/main/DisplayCategory.aspx?C=74> (WQ422 through WQ449).

✓ Not applicable, facility does not generate biosolids.

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.

EFFLUENT LIMITATION GUIDELINE:

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

✓ The facility is associated with the ELG at 40 CFR 469 Subpart B, Electronic Crystals. However, the facility discharges the process wastewater used in manufacturing the silicon wafers to their pretreatment plant and then to the city of O'Fallon.

GROUNDWATER MONITORING:

Groundwater is a water of the state according to 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ This facility is not required to monitor groundwater for the water protection program.

INDUSTRIAL SLUDGE:

Industrial sludge is solid, semi-solid, 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.

✓ Permittee is not authorized to land apply industrial sludge. Sludge is stored in the lagoon.

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 causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. If the permit writer determines 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 [40 CFR Part 122.44(d)(1)(iii)].

✓ Applicable; a RPA was conducted on appropriate parameters and was conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request. See Wasteload Allocations (WLA) for Limits in this section.

PARAMETER	UNITS	DAILY MAXIMUM	MONTHLY AVERAGE	CMC	RWC ACUTE	CCC	RWC CHRONIC	N	RANGE: MAX/MIN	CV	MF	RP
Arsenic TR	µg/L	33.27	16.23	NA	NA	20.0	31.66	72	25/5	0.63	1.27	YES
Cr VI	µg/L	12.53	9.31	15.0	5.90	10.0	5.90	72	5/0.008	0.21	1.18	NO
Copper, TR	µg/L	38.91	20.09	40.0	37.62	24.2	37.62	72	25/2	0.56	1.50	YES
Silver, TR	µg/L	25.81	23.22	25.8	3.07	NA	NA	72	2.9/1.5	0.07	1.06	NO
Zinc, TR	µg/L	308.85	164.01	308.9	145.83	306.3	145.83	72	99/2.4	0.52	1.47	NO
Chloride	mg/L	301.23	210.56	860	1302.75	230	1249.93	44	1000/0	0.26	1.25	YES
Fluoride	mg/L	5.54	3.6	NA	NA	4.00	4.8	61	3.6/0.5	0.3269	1.320	YES

NA	Not Applicable
*	Units are (µg/L) unless otherwise noted.
n	number of samples. If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.
CV	Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.
RWC	Receiving Water Concentration: concentration of a toxicant or the parameter in the receiving water after mixing (if applicable).
MF	Multiplying Factor. 99% Confidence Level and 99% Probability Basis.
RP	Reasonable Potential: an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, 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. SOCs are allowed under 40 CFR 122.47 providing certain conditions are met.

✓ Applicable; the time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(12)]. The facility has been given a schedule of compliance to meet final effluent limits for chloride and chloride plus sulfate at all outfalls.

SPILL REPORTING:

Per 10 CSR 24-3.010 and 40 CFR 302.6, any emergency involving a hazardous substance release into the environment at or above the reportable quantity for that substance in any 24-hour period 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. <http://dnr.mo.gov/env/esp/spillbill.htm>

STORMWATER PERMITTING:

A standard mass-balance equation cannot be calculated for stormwater from this facility because the stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day. The amount of stormwater discharged from the facility will vary based on previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability increases the flash of the stream.

It is likely sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except ammonia, which is based on a thirty day exposure). In the event a discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute stormwater discharges from a facility. For these reasons, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(4) and (5)(4)4.B.]. Therefore, industrial stormwater facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above staff are unable to perform statistical Reasonable Potential Analysis (RPA). However, staff will use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used 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 stormwater 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 waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater 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.

A SWPPP must be prepared by the permittee if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to

determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. Failure to implement and maintain the chosen BMP is a permit violation. For further guidance, consult the antidegradation implementation procedure (<http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf>).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs that are reasonable and cost effective. The AA evaluation should include practices that are designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why “no discharge” or “no exposure” is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at: <http://dnr.mo.gov/forms/index.html>.

✓ Applicable; a SWPPP shall be developed and implemented for this facility.

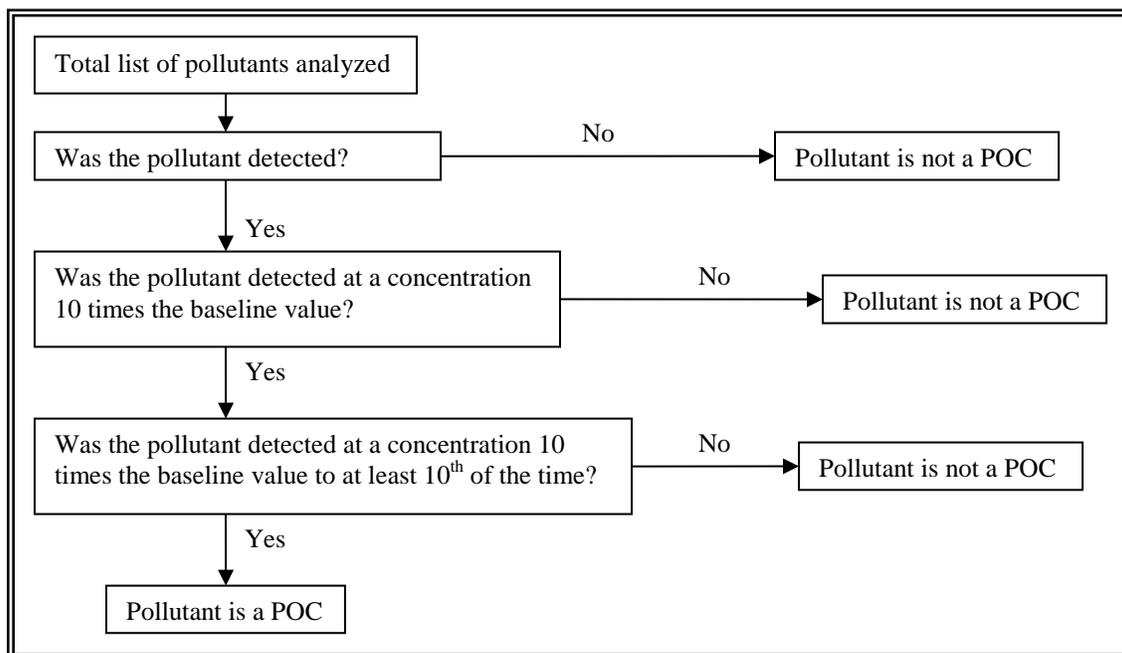
TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

One of the major strategies of the Clean Water Act (CWA) in making “reasonable further progress toward the national goal of eliminating the discharge of all pollutants” is to require effluent limitations based on the capabilities of the technologies available to control those discharges. Technology-based effluent limitations (TBELs) aim to prevent pollution by requiring a minimum level of effluent quality attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations (WQBELs). The NPDES regulations at Title 40 of the Code of Federal Regulations (CFR) 125.3(a) require NPDES permit writers to develop technology-based treatment requirements, consistent with CWA § 301(b) and § 402(a)(1), represent the minimum level of control that must be imposed in a permit. The regulation also indicates that permit writers must include in permits additional or more stringent effluent limitations and conditions, including those necessary to protect water quality. Regardless of the technology chosen to be the basis for limitations, the facility is not required to install the technology, only to meet the established TBEL.

Case-by-case TBELs are developed pursuant to CWA section 402(a)(1), which authorizes the administrator to issue a permit meeting either, 1) all applicable requirements developed under the authority of other sections of the CWA (e.g., technology-based treatment standards, water quality standards) or, 2) before taking the necessary implementing actions related to those requirements, “such conditions as the administrator determines are necessary to carry out the provisions of this Act.” The regulation at §125.3(c)(2) specifically cite this section of the CWA, stating technology-based treatment requirements may be imposed in a permit “on a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable.” Further, §125.3(c)(3) indicates “where promulgated effluent limitations guidelines only apply to certain aspects of the discharger’s operation,

or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis to carry out the provisions of the act.” When establishing case-by-case effluent limitations using best professional judgment, the permit writer should cite in the fact sheet or statement of basis both the approach used to develop the limitations, discussed below, and how the limitations carry out the intent and requirements of the CWA and the NPDES regulations.

Baselines to determine contaminants of concern are found in the *Development Document for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry – Final* (EPA 821-R-00-020; August 2000). The baselines represent the treatable concentration of model technology which would effectually treat a pollutant. Chapter 6 Table 6-1 directs the permit writer to multiply the baseline by ten to determine if the parameter is a pollutant of concern. The following table determines the parameters for which a TBEL must be considered; baseline values are retrieved from chapter six.



When developing TBELs for industrial facilities, the permit writer must consider all applicable technology standards and requirements for all pollutants discharged above baseline level. Without applicable effluent guidelines for the discharge or pollutant, permit writers must identify any needed TBELs on a case-by-case basis, in accordance with the statutory factors specified in CWA sections 301(b)(2) and 304(b). The site-specific TBELs reflect the BPJ of the permit writer, taking into account the same statutory factors EPA would use in promulgating a national effluent guideline regulation, but they are applied to the circumstances relating to the applicant. The permit writer also should identify whether state laws or regulations govern TBELs and might require more stringent performance standards than those required by federal regulations. In some cases, a single permit could have TBELs based on effluent guidelines, best professional judgment, state law, and WQBELs based on water quality standards.

- For BPT requirements (all pollutants)**
- The age of equipment and facilities involved*
 - The process(es) employed*
 - The engineering aspects of the application of various types of control techniques*
 - Process changes*
 - Non-water quality environmental impact including energy requirements*
 - The total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application
- For BCT requirements (conventional pollutants)**
- All items in the BPT requirements indicated by an asterisk (*) above
 - The reasonableness of the relationship between the costs of attaining a reduction in effluent and the derived effluent reduction benefits
 - The comparison of the cost and level of reduction of such pollutants from the discharge of POTWs to the cost and level of reduction of such pollutants from a class or category of industrial sources
- For BAT requirements (toxic and non-conventional pollutants)**
- All items in the BPT requirements indicated by an asterisk (*) above
 - The cost of achieving such effluent reduction

Best Practicable Control Technology Currently Available (BPT) is the first level of technology-based effluent controls for direct dischargers and it applies to all types of pollutants (conventional, nonconventional, and toxic). The Federal Water Pollution Control Act (FWPCA) amendments of 1972 require when EPA establishes BPT standards, it must consider the industry-wide cost of implementing the technology in relation to the pollutant-reduction benefits. EPA also must consider the age of the equipment and facilities, the processes employed, process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and such other factors as the EPA Administrator deems appropriate [CWA §304(b)(1)(B)]. Traditionally, EPA establishes BPT effluent limitations on the basis of the average of the best performance of well-operated facilities in each industrial category or subcategory. Where existing performance is uniformly inadequate, BPT may reflect higher levels of control than currently in place in an industrial category if the agency determines the technology can be practically applied. See CWA sections 301(b)(1)(A) and 304(b)(1)(B). Because the EPA has not promulgated TBELs for the pollutants identified as POCs, the permit writer follows the same format to establish site-specific TBELs. Although the numerical effluent limitations and standards are based on specific processes or treatment technologies to control pollutant discharges, EPA does not require dischargers to use these technologies. Individual facilities may meet the numerical requirements using whatever types of treatment technologies, process changes, and waste management practices they choose.

For each parameter, group of parameters, or outfall treatment process, the facility will summarize the relevant factors below in facility-specific (or waste-stream specific) case-by-case TBEL development. The permittee will have supplied the required information to the department so a technology based effluent limitation can be applied in the permit if applicable.

- ✓ Applicable; this operating permit has identified TBEL POCs.
- ✓ The facility has settling technology installed. The age of the equipment is not relevant. The department has determined settling is an appropriate technology for this discharge. Both fluoride and magnesium are found in groundwater which is used at this facility in their process. The permit writer has determined additional technologies to control these naturally occurring elements is not warranted at this time.

VARIANCE:

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; the operating permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does provide adequate protection for the receiving waters, then the other must be used.

- ✓ Applicable; wasteload allocations were calculated where relevant using water quality criteria or water quality model results and by applying the dilution equation below:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)} \quad \text{(EPA/505/2-90-001, Section 4.5.5)}$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

- Acute wasteload allocations designated as daily maximum limits (MDL) were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).
- Chronic wasteload allocations designated as monthly average limits (AML) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ).
- Water quality based MDL and AML effluent limitations were calculated using methods and procedures outlined in USEPA’s *Technical Support Document For Water Quality-based Toxics Control* or TSD EPA/505/2-90-001; 3/1991.
- Number of Samples “n”: In accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring normally be used to determine the value of “n” for calculating the AML. However, in situations

where monitoring frequency is once per month or less, a higher value for “n” must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is “n = 4” at a minimum. For total ammonia as nitrogen, “n = 30” is used.

WLA MODELING:

Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

- ✓ Applicable; a WLA study including model was submitted to the department by the facility on 6/4/2015. The WLA study determined copper and zinc may receive elevated effluent limitations in accordance with a metals translator and water-effects ratio study and verified by the watershed protection section within the department. See Part IV for effluent limitations determinations.

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. Additionally, 40 CFR 122.44(d)(1) directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including state narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

- ✓ Applicable; under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures the provisions in 10 CSR 20-6 and the Water Quality Standards in 10 CSR 20-7 are being met. Under 10 CSR 20-6.010(8)(A)4, the department may require other terms and conditions it deems necessary to assure compliance with the CWA and related regulations of the Missouri Clean Water Commission. The following Missouri Clean Water Laws (MCWL) apply: §644.051.3. requires the department to set permit conditions complying with the MCWL and CWA; §644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits); and §644.051.5. is the basic authority to require testing conditions. WET tests are required by all facilities meeting the following criteria:

- Facility has Water Quality-Based Effluent Limitations for toxic substances (other than NH₃)
- Other – the facility has submitted a water-effects ratio study metals translator. To determine the in-stream effects of the adjusted effluent limitations for copper, the department has determined annual monitoring of whole effluent toxicity is required.

Part IV. EFFLUENT LIMITS DETERMINATION

OUTFALL #001, #002, AND #003 – PROCESS WASTEWATER & STORMWATER

Effluent limitations derived and established in the below effluent limitations table are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required under 40 CFR 122.45(d)(1) for continuous discharges not from a POTW.

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	BASIS FOR LIMITS	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL								
FLOW	MGD	1	*	*	SAME	ONCE/MONTH	ONCE/MONTH	24 Hr. TOT
PRECIPITATION	INCHES	6	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
TEMPERATURE	°F	1, 6	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
CONVENTIONAL								
OIL & GREASE	MG/L	1, 3	15	10	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
pH ‡	SU	1, 3	6.5 TO 9.0	6.5 to 9.0	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
SETTLABLE SOLIDS	ML/L/HR	6	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
TSS	MG/L	6	80	60	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
METALS								
ARSENIC, TOTAL RECOVER.	µg/L	1, 2, 3, 4	33.3	13.6	36.9, 13.6	ONCE/MONTH	ONCE/MONTH	GRAB
CHROMIUM (VI), DISSOLV.	µg/L	1, 2, 3, 4	*	*	14.9, 6.4	ONCE/MONTH	ONCE/MONTH	GRAB
COPPER, TOTAL RECOVER.	µg/L	5	64.0	27.3	22.0, 27.3	ONCE/MONTH	ONCE/MONTH	GRAB
SILVER, TOTAL RECOVER.	µg/L	1, 2, 3, 4	*	*	7.8, 3.1	ONCE/MONTH	ONCE/MONTH	GRAB
ZINC, TOTAL RECOVERABLE	µg/L	1, 2, 3, 4, 5	*	*	181, 90.1	ONCE/MONTH	ONCE/MONTH	GRAB
OTHER								
CHLORIDE	mg/L	1, 2, 3	F 301	F 211	*, *	ONCE/MONTH	ONCE/MONTH	GRAB
CHLORIDE PLUS SULFATE	mg/L	1, 2, 3	F 1000	F 1000	*, *	ONCE/MONTH	ONCE/MONTH	GRAB
FLUORIDE	mg/L	1, 2, 3	5.5	3.2	7.0, 3.2	ONCE/MONTH	ONCE/MONTH	GRAB
SULFATE	mg/L	6	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
TRICHLOROETHYLENE	µg/L	2, 6	*	*	168.8, 80	ONCE/MONTH	ONCE/MONTH	GRAB
WET TEST CHRONIC	TUc	2, 4, 6, 8	*		ACUTE PASS/FAIL	ONCE/YEAR	ONCE/YEAR	GRAB

* - Monitoring requirement only

‡ The facility will report the minimum and maximum pH values; pH is not to be averaged.

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

F = final limitations after a monitoring only three year schedule of compliance

Basis for Limitations Codes:

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

TBEL POC TABLE:

PARAMETER	Units	#001	Baseline	Baseline x 10	POC
<i>FORM C OF APPLICATION FOR PERMIT RENEWAL: PART A</i>					
Biochemical Oxygen Demand	mg/L	14	2	20	no
Chemical Oxygen Demand	mg/L	21	5	50	no
Total Organic Carbon	mg/L	5.8	1	10	no
Total Suspended Solids	mg/L	13	4	40	no
<i>NUTRIENTS:</i>					
Ammonia as N	mg/L	0.11	0.05	0.5	no
<i>FORM C OF APPLICATION FOR PERMIT RENEWAL: OTHER</i>					
Fluoride *	mg/L	1.9	0.1	1	YES
Oil and Grease	mg/L	5.1	5	50	no
Sulfate as SO ₄ ²⁻	mg/L	620	none	none	n/a
<i>METALS (AS TOTAL RECOVERABLE - UNLESS SPECIFIED):</i>					
Copper	µg/L	8.9	25	250	no
Magnesium **	µg/L	70,000	5,000	50,000	YES
Zinc	µg/L	65	20	200	no

< = reported below quantifiable analytical limits

Parameters not present on the table above but in Forms C and D were deemed not present by the permittee and were therefore not tested.

The facility did not sample outfalls #002 and #003 independently for the application. Per 40 CFR 122.21(g)(7)(i) the outfalls were deemed “substantially identical”. The substantially identical determination only applies to application materials; the facility must sample outfalls #002 and/or #003 if they discharge.

* This parameter is found in groundwater and is addressed through water quality limitations. See below.

** This parameter is found in groundwater. There are no water quality limitations. See below.

DERIVATION AND DISCUSSION OF LIMITS:**PHYSICAL:****Flow**

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD).

Precipitation

Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters. It is not necessary to report all days of precipitation during the month because of the readily available on-line data. New requirement this permit. The facility will report the rainfall for the day the other parameters are collected. The facility is not required to sample during rainfall events. If no rainfall, report 0.

Temperature

The facility reported 88.7 °F in the application materials. In accordance with 10 CSR 20-7.031(5)(D), water contaminant sources shall not cause or contribute to stream temperature in excess of ninety degrees Fahrenheit (90 °F) or thirty-two and two-ninths degrees Celsius (32 2/9 °C). In order to reduce confusion and duplicative monitoring or reporting requirements, the permit will only require that temperature be monitored and reported in degrees Fahrenheit. It is not necessary to report in both Celsius and Fahrenheit. To assure this facility will not contribute to thermal pollution, the facility is required to monitor once per month. Monitoring shall occur on days where there is no influence of stormwater.

CONVENTIONAL:

Biochemical Oxygen Demand (BOD₅)

Previous permit had limitations based on discharge from POTWs. This parameter is not applicable to this facility. Removed.

Oil & Grease

Conventional pollutant, in accordance with 10 CSR 20-7.031 Table A: *Criteria for Designated Uses*; 10 mg/L monthly average (chronic standard). The daily maximum was calculated using the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001). Section 5.4.2 indicates the waste load allocation can be set to the chronic standard. When the chronic standard is multiplied by 1.5, the daily maximum can be calculated. Hence, 10 * 1.5 = 15 mg/L for the daily maximum. Limitations retained from previous permit. Continue with monthly sampling and reporting.

pH

6.5 to 9.0 SU. The Water Quality Standard at 10 CSR 20-7.031(5)(E) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units. Limitations retained from previous permit to conform with antibacksliding regulations. Continue with monthly sampling and reporting.

Settleable Solids (SS)

There is no water quality standard for SS; however, sediment discharges can negatively impact aquatic life habitat. Settleable solids are also a valuable indicator parameter. Solids monitoring allows the permittee to identify increases in sediment and solids that may indicate uncontrolled materials leaving the site. Similar facilities have permit limits of 1.5 mL/L/hour daily maximum and 1.0 mL/L/hour monthly average are typical and achievable. The facility will begin sampling for this parameter monthly. No limits at this time but the facility should target for the enumerated values.

Total Suspended Solids (TSS)

There is no water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS that may indicate uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. Previous permit limitations were 80 mg/L daily maximum and 60 mg/L monthly average. These limitations are achievable by the facility and are protective of the receiving stream.

METALS:

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). General warm-water habitat criteria apply (WWH) designated as AQL in 10 CSR 20-7.031 Table A. Additional use criterion (HHP, DWS, GRW, IRR, or LWV) may also be used as applicable to determine the most protective effluent limit for the stream class and uses. Concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids were provided to the department, the department integrated those findings into derivation of the water quality limits.

METAL	CONVERSION FACTORS USING HARDNESS OF 305 MG/L	
	ACUTE	CHRONIC
Arsenic	1	1
Copper	Determined from WER	Determined from WER

Arsenic, Total Recoverable

Previous permit limits were 36.9 µg/L daily maximum, 13.6 µg/L monthly average. An RPA showed RP.

Acute AQL WQS: none

Chronic AQL WQS: 20

Set WQS to WLA when no mixing

Acute WLA: C_e = none

Chronic WLA: C_e = 20 µg/L

LTA_a: none

[CV = 0.628, 99th Percentile]

LTA_c: 20 (0.513) = 10.3 µg/L

[CV = 0.628, 99th Percentile]

Use most protective number of LTA_a or LTA_c.

MDL: 10.3 (3.24) = 33.3 µg/L

[CV = 0.628, 99th Percentile]

AML: 10.3 (1.58) = 16.2 µg/L

[CV = 0.628, 95th Percentile, n = 72]

Because of the increased variability (CV) in data provided by the facility, the daily maximum has decreased and the monthly average has increased. This parameter's calculation is not based on hardness. Due to antibacksliding regulations, the monthly

average limitation can not be elevated; the facility can usually meet the monthly average even without taking multiple samples for the month. Monthly sampling and reporting required; daily maximum 33.3 µg/L, monthly average 13.6 µg/L. The facility may obtain additional samples to meet the monthly average if necessary. The facility must continue to use sufficiently sensitive methods (same analytical method and reporting limit as used the last few months of the previous permit) so the department is able to re-evaluate this parameter at the next permit renewal. Monthly sampling and reporting continued.

Chromium, Hexavalent, Dissolved

Previous permit limitations were 14.9 µg/L daily maximum and 6.4 µg/L monthly average. The RPA showed no RP. Limitations are removed. The facility must continue to use sufficiently sensitive methods (same analytical method and reporting limit as used in the previous permit) so the department is able to re-evaluate this parameter at the next permit renewal. Monthly sampling and reporting continued.

Copper, Total Recoverable

An RPA was completed for copper and RP was found. Additionally, the facility completed a site specific metals translator dated May 2015 and submitted in conjunction with the permit renewal application on May 22, 2015. The below values have been approved by the department as site specific limitations. Backsliding is allowed because site specific information showed elevated permit limitations should not cause in-stream toxicity from copper. WET testing is implemented on an annual basis to assure synergistic toxicity is not occurring. Derivation of limits are found in the study.

MDL: **64.0 µg/L**
AML: **27.3 µg/L**

Silver, Total Recoverable

Previous permit limitations were 7.8 µg/L daily maximum and 3.1 µg/L monthly average. An RPA showed no RP. Limitations are removed. The facility must continue to use sufficiently sensitive methods (same analytical method and reporting limit as used in the previous permit) so the department is able to re-evaluate this parameter at the next permit renewal. Monthly sampling and reporting continued.

Zinc, Total Recoverable

Previous permit limitations were 181 µg/L daily maximum and 90.1 µg/L monthly average. The water effects ratio completed by the facility and submitted to the Department in May 2015 indicated daily maximum would be 604 µg/L, monthly average 311 µg/L. However an RPA based upon WQS (daily maximum 309 µg/L; monthly average 164 µg/L) showed no RP hence limitations are removed. Should conditions change in the future, the effluent limits presented by SunEdison in the May 2015 study will be utilized by the Department. The facility must continue to use sufficiently sensitive methods (same analytical method and reporting limit as used in the previous permit) so the department is able to re-evaluate this parameter at the next permit renewal. Monthly sampling and reporting continued.

OTHER:

Chloride

Previous permit required monthly sampling; no limits. A review of the data found reasonable potential for this parameter to cause or contribute to instream toxicity. Current WQS as supplied below are based on 10 CSR 20-7.031(4)(L) 05/31/2010.

<http://s1.sos.mo.gov/cmsimages/adrules/csr/previous/10csr/10csr0510/10c20-7.pdf>.

Acute AQL WQS: 860	set WQS to WLA when no mixing	Acute WLA: $C_e = 860$
Chronic AQL WQS: 230	set WQS to WLA when no mixing	Chronic WLA: $C_e = 230$
LTA _a :	860 (0.570) = 489.782	[CV = 0.26, 99 th Percentile]
LTA _c :	230 (0.746) = 171.557	[CV = 0.263, 99 th Percentile]

Use most protective number of LTA_a or LTA_c.

MDL:	171.557 (1.76) = 301 mg/L	[CV = 0.26, 99 th Percentile]
AML:	171.557 (1.23) = 211 mg/L	[CV = 0.26, 95 th Percentile, n = 44]

After review of the facility's data, the facility cannot meet these limitations. A three year schedule of compliance is afforded based on comments provided by the facility.

Chloride Plus Sulfate

Previous permit required sampling and reporting sulfate plus chloride without limitations. A review of the data found reasonable potential for this parameter to cause or contribute to instream toxicity. Current WQS as supplied below are based on 10 CSR 20-7.031(4)(L) of the 05/31/2010 rules. Current rules (as the new criterion have not been approved by EPA) state the stream shall not exceed 1000 mg/L at any time. Since Tributary to Belleau Creek is not afforded mixing considerations the discharge must not exceed the standard of 1000 mg/L as a daily maximum in order not to cause an excursion of the 1000 mg/L instream standard. Since this value cannot be exceeded daily the application of a monthly average of the same value is appropriate.

AQL WQS: 1000 mg/L at any time applied as a daily maximum and monthly average per 40 CFR 122.45(d)(1).

The facility cannot meet the new limitations. Maximum value reported is 1630 mg/L, the average for outfall #001 is 1104.9 mg/L. The facility will have three years to attain compliance with the new effluent limitations.

Fluoride

Previous permit limitations were 7.0 mg/L daily maximum and 3.2 mg/L monthly average. Sampling data has shown the CV has changed therefore new limitations were calculated.

Acute WQS: none	Set WQS to WLA when no mixing	Acute WLA: $C_e = \text{none}$
Chronic LWQ WQS: 4 mg/L	Set WQS to WLA when no mixing	Chronic WLA: $C_e = 4$
LTA _a :	none	[CV = 0.327, 99 th Percentile]
LTA _c :	4 (0.694) = 2.78 µg/L	[CV = 0.327, 99 th Percentile]
MDL:	2.78 (1.99) = 5.5 mg/L	[CV = 0.327, 99 th Percentile]
AML:	2.78 (1.29) = 3.6 mg/L	[CV = 0.327, 95 th Percentile, n = 61]

Backsliding is not allowed for this parameter. The facility will be held to the most stringent limitations; 5.5 mg/L daily maximum and 3.2 mg/L monthly average. Monthly monitoring and reporting continued; a schedule of compliance is not afforded; the facility may sample more frequently if necessary to meet the monthly average limitation.

Magnesium

This parameter was identified as a TBEL POC. This parameter is found abundantly in groundwater of the state; the facility uses groundwater for cooling and process water. The EPA's ECOTOX database showed toxicity to *Ceriodaphnia dubia* (the water flea used in WET testing) at 1,770 mg/L. The facility reported 70 mg/L. There is little likelihood magnesium will cause toxicity in the receiving stream. However, because synergistic effects may be at work in the effluent, the permit writer has used best professional judgment to use WET testing as a surrogate for this parameter.

Sulfate

When new WQS are promulgated, WQS will be based on chlorides plus sulfates. To easily determine the sulfate value, the facility will need to independently report sulfate. Monthly monitoring and reporting. While not individually reported in the past, the facility has been sampling for sulfate.

Trichloroethylene

Previous permit limitations were 168.8 µg/L daily maximum, 80 µg/L monthly average. Chronic AQL WQS is 80 µg/L. Facility reported mostly non-detections, only three detections (11, 12, and 13 µg/L). The permit writer completed an RPD, no RP. Limitations removed. The facility must continue to use sufficiently sensitive methods (same analytical method and reporting limit as used in the previous permit) to be able to re-evaluate this parameter at the next permit renewal. Monthly sampling and reporting continued.

Whole Effluent Toxicity (WET) Test, Chronic

Annual monitoring is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream. Previous permit required acute testing, however, this is an effluent dominated tributary hence to be protective of the stream at all times, the facility will now be required to conduct chronic testing. Previous permit required composite sampling. Per the department's permit writers manual, sample type of WET testing shall match the other types in the permit. Every other parameter in the permit is grab, therefore a grab sampling technique shall be used for WET. Grab sampling for WET is appropriate as the effluent consistency does not change. The facility shall not collect a stream sample and shall use moderately hard or hard laboratory water as the control as there is no upstream of the discharge. The facility shall not sample for WET when stormwater is present.

The standard Allowable Effluent Concentration (AEC) for facilities discharging to unclassified, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] is 100%.

The standard dilution series for facilities discharging to unclassified, Class C, Class P (with default mixing considerations), or lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] is 100%, 50%, 25%, 12.5%, & 6.25%.

Part V. SAMPLING AND REPORTING REQUIREMENTS:

Refer to each outfall's derivation and discussion of limits section to review individual sampling and reporting frequencies and sampling type. Additionally, see Standard Conditions Part I attached at the end of this permit and fully incorporated within.

ELECTRONIC DISCHARGE MONITORING REPORTING:

Due to new federal regulations, all facilities must begin submitting their discharge monitoring reports electronically, called the eDMR system (certain exemptions are allowed; see National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule in 80 FR 64063; effective 12/21/2015). To begin the process with the department, please visit <http://dnr.mo.gov/pubs/pub2474.pdf>. This process will save time, lessen paperwork, and reduce operating costs for both facilities and the water protection program. Additional information may also be found at <http://dnr.mo.gov/env/wpp/edmr.htm>.

SAMPLING FREQUENCY JUSTIFICATION:

Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits/WET Testing for Compliance Bio-monitoring*.

Chronic Whole Effluent Toxicity

-No less than Once/Year:

- Discharges with pollutants that pose a strong probability of causing chronic toxicity (chloride, copper, arsenic)

SAMPLING TYPE JUSTIFICATION:

Sampling type was generally continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, and volatile organic samples.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 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 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 quantifies the pollutant below the level of the applicable water quality criterion 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 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the department. Table A at 10 CFR 20-7.031 shows water quality standards.

Part VI. ADMINISTRATIVE REQUIREMENTS

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

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. <http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf>. 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.

✓ *This permit will become synchronized by expiring the end of the 4th quarter, 2019.*

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending.

<http://dnr.mo.gov/env/wpp/permits/pn/index.html>. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

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

- The Public Notice period for this operating permit was from 12/23/2016 through 1/23/2017. No comments were received.

The permit writer removed "Collection System Maintenance Annual Reports" from the eDMR reporting requirements as this is not applicable to this facility. The permit writer fixed typographical errors. The permit writer changed the submission of the SOC annual reports from "to the regional office" to "via the eDMR system". None of these changes require an additional public notice period.

DATE OF FACT SHEET: JANUARY 25, 2017

COMPLETED BY:

PAM HACKLER, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 526-3386
pam.hackler@dnr.mo.gov



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

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

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

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

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

Section B – Reporting Requirements

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



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

Section C – Bypass/Upset Requirements

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

Section D – Administrative Requirements

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



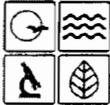
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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A 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.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
**FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI
 CLEAN WATER LAW**

AP21318

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
04/15	[Signature]

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

1. This application is for:

An operating permit for a new or unpermitted facility:
 Please indicate the original Construction Permit # _____

An operating permit renewal:
 Please indicate the permit # MO- 0000299 Expiration Date 12/01/2015

An operating permit modification:
 Please indicate the permit # MO- _____ Modification Reason: _____

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

2. FACILITY

NAME SunEdison Semiconductor		TELEPHONE NUMBER WITH AREA CODE (636) 474-5000	
		FAX	
ADDRESS (PHYSICAL) 501 Pearl Drive, Mail Zone 65	CITY St. Peters	STATE MO	ZIP CODE 63376

3. OWNER

NAME SunEdison Semiconductor, Ltd.		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS		FAX	
ADDRESS (MAILING) 501 Pearl Drive, Mail Zone 65	CITY St. Peters	STATE MO	ZIP CODE 63376

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

4. CONTINUING AUTHORITY

NAME Same as above		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS		FAX	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

5. OPERATOR

NAME None required		TELEPHONE NUMBER WITH AREA CODE	
CERTIFICATE NUMBER		FAX	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME Larry Weaver		TELEPHONE NUMBER WITH AREA CODE (636) 474-5330	
TITLE Environmental Engineer		FAX	
E-MAIL ADDRESS lweaver@sunedisonsemi.com		(636) 474-5090	

7. ADDITIONAL FACILITY INFORMATION

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

001 SE 1/4 1/4 Sec 22 T 47N R 3E 183 County
 UTM Coordinates Easting (X): 703026 Northing (Y): 4298860
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 SE 1/4 1/4 Sec 22 T 47N R 3E 183 County
 UTM Coordinates Easting (X): 703034 Northing (Y): 4298728

003 SE 1/4 1/4 Sec 22 T 47N R 3E 183 County
 UTM Coordinates Easting (X): 702996 Northing (Y): 4298792

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 3674 and NAICS 334413 002 – SIC 3674 and NAICS 334413
 003 – SIC 3674 and NAICS 334413 004 – SIC _____ and NAICS _____

NOTE: Outfalls 002, 003 are relief outfalls only, with zero normal flow.

SL
S.A.C.H

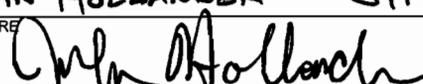
8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION
(Complete all forms that are applicable.)

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility?
 If yes, complete Form C or 2F.
 (2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.) YES NO
- B. Is application for storm water discharges only?
 If yes, complete Form C or 2F. YES NO
- C. Is your facility considered a "Primary Industry" under EPA guidelines:
 If yes, complete Forms C or 2F and D. YES NO
- D. Is wastewater land applied?
 If yes, complete Form I. YES NO
- E. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied?
 If yes, complete Form R. YES NO
- F. If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.
- F. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

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

NAME Jason and Sarah Szachnieski Living Trusts			
ADDRESS 699 Pearl Drive	CITY St. Peters	STATE MO	ZIP CODE 63376

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) JOHN HOLLANDER SITE MANAGER	TELEPHONE NUMBER WITH AREA CODE 636-474-5465
SIGNATURE 	DATE SIGNED 05/22/2015

MO 780-1479 (07/14)

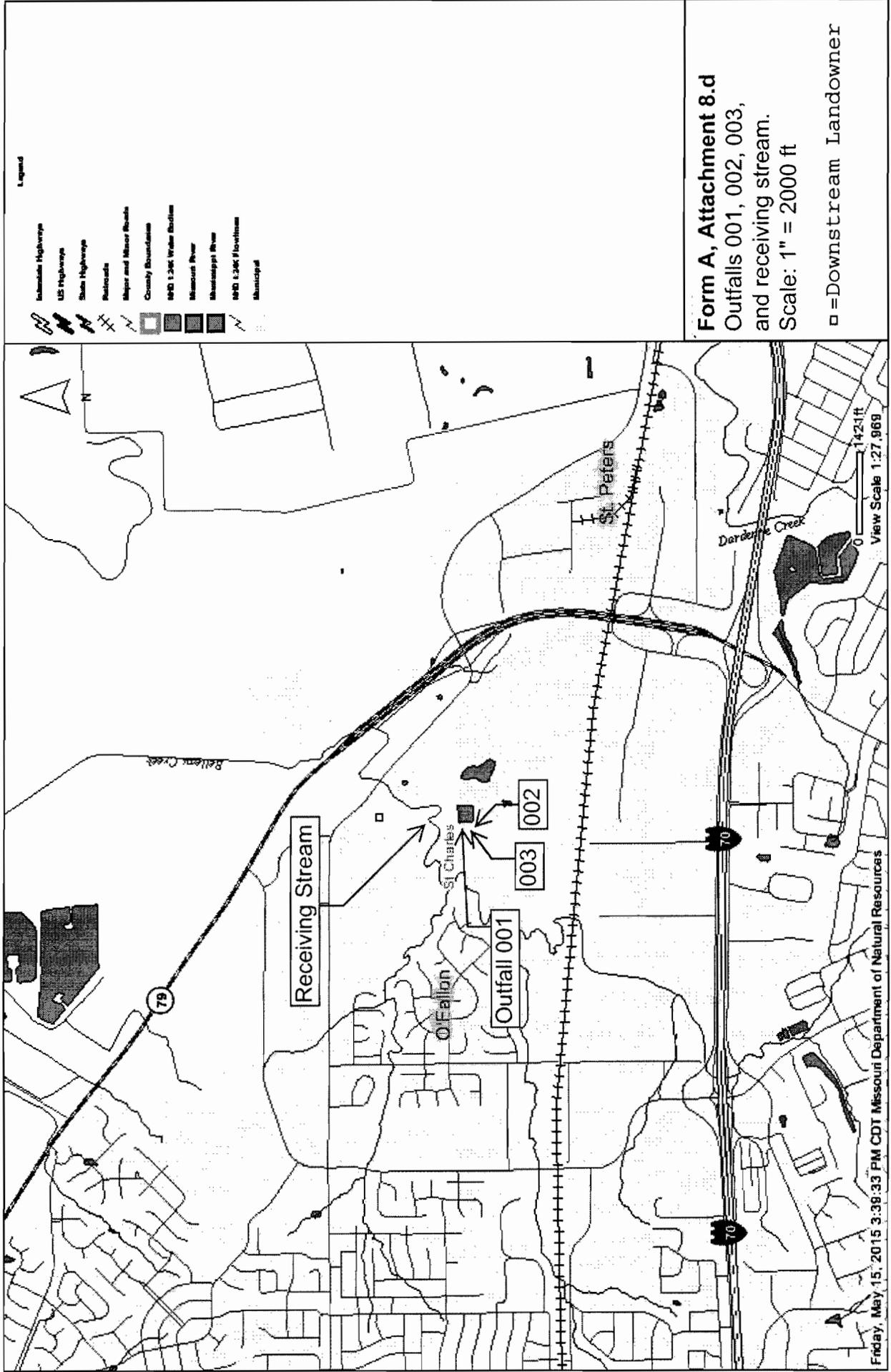
BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

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 or 2F, if applicable?
- Form D, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?
- Revised Nutrient Management Plan, if applicable?

SunEdison Semiconductor



This timestamp indicates the date and time the map was generated. Data layers in the map are updated at a variety of intervals and may not reflect current conditions. Disclaimer: Although this map has been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.

2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

YES (COMPLETE THE FOLLOWING TABLE) **NO (GO TO SECTION 2.50)**

1. OUTFALL NUMBER <i>(list)</i>	2. OPERATION(S) CONTRIBUTING FLOW <i>(list)</i>	3. FREQUENCY		4. FLOW				C. DURATION <i>(in days)</i>
		A. DAYS PER WEEK <i>(specify average)</i>	B. MONTHS PER YEAR <i>(specify average)</i>	A. FLOW RATE <i>(in mgd)</i>		B. TOTAL VOLUME <i>(specify with units)</i>		
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	
	(Outfall 002 and 003 have potential to serve as relief discharges for Outfall 001 during extreme precipitation events, so are listed as 'intermittent', have no flow.)							
002	Industrial site precip and runoff	0	0	0	0	0	0	<1 day per 10 years
002	Air handler condensate	0	0	0	0	0	0	
002	Ground water wells	0	0	0	0	0	0	
003	Industrial site precip and runoff	0	0	0	0	0	0	<1 day per 10 years
003	Air handler condensate	0	0	0	0	0	0	
003	Reverse osmosis reject water	0	0	0	0	0	0	

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

YES (COMPLETE B.) NO (GO TO SECTION 2.60)

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINES EXPRESSED IN TERMS OF PRODUCTION (OF OTHER MEASURE OF OPERATION)?

YES (COMPLETE c.) NO (GO TO SECTION 2.60)

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS AN ACTUAL MEASUREMENT OF YOUR MAXIMUM LEVEL OF PRODUCTION, EXPRESSED IN THE TERMS AND UNITS USED IN THE APPLICABLE EFFLUENT GUIDELINE AND INDICATE THE AFFECTED OUTFALLS.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS <i>(list outfall numbers)</i>
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. <i>(specify)</i>	

2.60 IMPROVEMENTS

A. ARE YOU NOW REQUIRED BY ANY FEDERAL, STATE OR LOCAL AUTHORITY TO MEET, ANY IMPLEMENTATION SCHEDULE FOR THE CONSTRUCTION, UPGRADING OR OPERATION OF WASTEWATER TREATMENT EQUIPMENT OR PRACTICES OR ANY OTHER ENVIRONMENTAL PROGRAMS THAT MAY AFFECT THE DISCHARGES DESCRIBED IN THIS APPLICATION? THIS INCLUDES, BUT IS NOT LIMITED TO, PERMIT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

YES (COMPLETE THE FOLLOWING TABLE) NO (GO TO 3.00)

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	A. REQUIRED	B. PROJECTED		A. REQUIRED	B. PROJECTED

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS (OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY AFFECT YOUR DISCHARGES) YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
 NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Fluoride	Deep well source water, and RO membrane concentration.	F=1.6 mg/l avg; n=6	DMRs 3Q2014 - 4Q2014
Oil/Grease	Industrial area runoff.	O&G=<4.9 mg/l avg; n=6	" "
Sulfate	Deep well source water, and RO membrane concentration.	SO4=588 mg/l avg; n=6	" "
Magnesium	Deep well source water, and RO membrane concentration.	Mg=61 mg/l avg; n=6	" "
Copper (t)	Deep well source water, and industrial area runoff and RO membrane concentration.	Cu=0.0069 mg/l avg; n=8	" "
Zinc (t)	Deep well source water, and industrial area runoff and RO membrane concentration.	Zn=0.024 mg/l avg; n=6	" "
NOTE:	SunEdison is including a study request for site-specific water	and analytical data as part of quality limits at permit renewal.	this application, to support a -
	For additional effluent	characteristics, please consult	the attached document, -
	"Site-Specific Effluent Ratio Study", May 2015,	Limitations Determination, - Barr Engineering	Metals Translator / Water-Effect

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.) NO (GO TO 3.20)

Whole Effluent Toxicity tested at Outfall 001 annually during June in each of last four years, per Permit.

Acute Static non-renewal, for purpose of Permit monitoring. (Pass)

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

YES (LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.) NO (GO TO 3.30)

A. NAME	B. ADDRESS	C. TELEPHONE (area code and number)	D. POLLUTANTS ANALYZED (list)
PDC Laboratories	3278 N. Hwy 67, Florissant, MO 63033	800-333-3278	BOD, COD, TSS, TOC, NH3, Field temperature, F, Oil/Grease, Sulfate, Magnesium, Copper, Zinc
Environmental Analysis South	4000 E. Jackson Blvd. Jackson, MO 63755	573-204-8817	Acute Toxicity Testing

3.30 CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE 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.

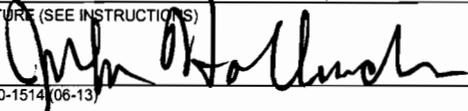
NAME AND OFFICIAL TITLE (TYPE OR PRINT)

JOHN HOLLANDER SITE MANAGER

TELEPHONE NUMBER WITH AREA CODE

636-474-5465

SIGNATURE (SEE INSTRUCTIONS)



DATE SIGNED

05/22/2015

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet
(Use the same format) instead of completing these pages.
SEE INSTRUCTIONS

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

OUTFALL NO.
001

INTAKE AND EFFLUENT CHARACTERISTICS

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)			
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand (BOD)	14						1	mg/L				
B. Chemical Oxygen Demand (COD)	21						1	mg/L				
C. Total organic Carbon (TOC)	5.8						1	mg/L				
D. Total Suspended Solids (TSS)	13						1	mg/L				
E. Ammonia (as N)	0.11						1	mg/L				
F. Flow	VALUE 1.04				VALUE		1	MGD				
G. Temperature (winter)	VALUE 11				VALUE		1	°C				
H. Temperature (summer)	VALUE 31.5				VALUE		1	°C				
I. pH	MINIMUM 7.4	MAXIMUM 8.9		MAXIMUM			1	STANDARD UNITS				

PART B - Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark column 2A for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (1) CONCENTRATION	B. MAXIMUM 30 DAY VALUE (if available)	C. LONG TERM AVRG. VALUE (if available)	D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE (1) CONCENTRATION	B. NO. OF ANALYSES		
	(2) MASS	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		
A. Bromide (24959-67-9)		X										
B. Chlorine, Total Residual		X										
C. Color		X										
D. Fecal Coliform		X										
E. Fluoride (16984-48-8)	X		1.9			1	mg/l					
F. Nitrate - Nitrate (as N)		X										

CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (if available)		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						
G. Nitrogen, Total Organic (as N)		X												
H. Oil and Grease	X		5.1						1	mg/l				
I. Phosphorus (as P), Total (7723-14-0)		X												
J. Sulfate (as SO ₄) (14808-79-8)	X		620						1	mg/l				
K. Sulfide (as S)		X												
L. Sulfite (as SO ₃) (14265-45-3)		X												
M. Surfactants		X												
N. Aluminum, Total (7429-90-5)		X												
O. Barium, Total (7440-39-3)		X												
P. Boron, Total (7440-42-8)		X												
Q. Cobalt, Total (7440-48-4)		X												
R. Iron, Total (7439-89-6)		X												
S. Magnesium, Total (7439-95-4)	X		70						1	mg/l				
T. Molybdenum, Total (7439-98-7)		X												
U. Manganese, Total (7439-96-5)		X												
V. Tin, Total (7440-31-5)		X												
W. Titanium, Total (7440-32-6)		X												

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (if available)		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)		X												
2M. Arsenic, Total (7440-38-2)		X												
3M. Beryllium, Total (7440-41-7)		X												
4M. Cadmium, Total (7440-43-9)		X												
5M. Chromium III (16065-83-1)		X												
6M. Chromium VI (18540-29-9)		X												
7M. Copper, Total (7440-50-8)	X		0.0089						1	mg/l				
8M. Lead, Total (7439-92-1)		X												
9M. Mercury, Total (7439-97-6)		X												
10M. Nickel, Total (7440-02-0)		X												
11M. Selenium, Total (7782-49-2)		X												
12M. Silver, Total (7440-22-4)		X												
13M. Thallium, Total (7440-28-0)		X												
14M. Zinc, Total (7440-66-6)	X		0.065						1	mg/l				
15M. Cyanide, Amenable to Chlorination		X												
16M. Phenols, Total		X												
RADIOACTIVITY														
(1) Alpha Total		X												
(2) Beta Total		X												
(3) Radium Total		X												
(4) Radium 226 Total		X												

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet
(Use the same format) instead of completing these pages.
SEE INSTRUCTIONS

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

OUTFALL NO.
002

INTAKE AND EFFLUENT CHARACTERISTICS

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)		
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE (1) CONCENTRATION	B. NO. OF ANALYSES	4. INTAKE (optional)	
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						(1) CONCENTRATION	(2) MASS
A. Biochemical Oxygen Demand (BOD)	14				1	mg/L					
B. Chemical Oxygen Demand (COD)	21				1	mg/L					
C. Total organic Carbon (TOC)	5.8				1	mg/L					
D. Total Suspended Solids (TSS)	13				1	mg/L					
E. Ammonia (as N)	0.11				1	mg/L					
F. Flow	VALUE 0*			VALUE	1	MGD		VALUE			
G. Temperature (winter)	VALUE 11			VALUE	1	°C		VALUE			
H. Temperature (summer)	VALUE 31.5			VALUE	1	°C		VALUE			
I. pH	MINIMUM 7.4	MAXIMUM 8.9		MAXIMUM	1	STANDARD UNITS					

PART B - Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for any pollutant you believe to be absent. If you mark column 2A for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (if available)		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS												
A. Bromide (24959-67-9)		X										
B. Chlorine, Total Residual		X										
C. Color		X										
D. Fecal Coliform		X										
E. Fluoride (16984-48-8)		X										
F. Nitrate - Nitrate (as N)		X										

MO 780-1514 (06-13)

* NOTE: OUTFALL 002 HAS NO FLOW, IS A RELIEF FOR OUTFALL 001, SO PART A MATCHES OUTFALL 001; ALL PART B POLLUTANTS ARE BELIEVED ABSENT.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						
G. Nitrogen, Total Organic (as N)		X												
H. Oil and Grease		X												
I. Phosphorus (as P), Total (7723-14-0)		X												
J. Sulfate (as SO ₄) (14808-79-8)		X												
K. Sulfide (as S)		X												
L. Sulfite (as SO ₃) (14265-45-3)		X												
M. Surfactants		X												
N. Aluminum, Total (7429-90-5)		X												
O. Barium, Total (7440-39-3)		X												
P. Boron, Total (7440-42-8)		X												
Q. Cobalt, Total (7440-48-4)		X												
R. Iron, Total (7439-89-6)		X												
S. Magnesium, Total (7439-95-4)		X												
T. Molybdenum, Total (7439-98-7)		X												
U. Manganese, Total (7439-96-5)		X												
V. Tin, Total (7440-31-5)		X												
W. Titanium, Total (7440-32-6)		X												

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (if available)		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS													
1M. Antimony, Total (7440-36-9)		X											
2M. Arsenic, Total (7440-38-2)		X											
3M. Beryllium, Total (7440-41-7)		X											
4M. Cadmium, Total (7440-43-9)		X											
5M. Chromium III (16065-83-1)		X											
6M. Chromium VI (18540-29-9)		X											
7M. Copper, Total (7440-50-8)		X											
8M. Lead, Total (7439-92-1)		X											
9M. Mercury, Total (7439-97-6)		X											
10M. Nickel, Total (7440-02-0)		X											
11M. Selenium, Total (7782-49-2)		X											
12M. Silver, Total (7440-22-4)		X											
13M. Thallium, Total (7440-28-0)		X											
14M. Zinc, Total (7440-66-6)		X											
15M. Cyanide, Amenable to Chlorination		X											
16M. Phenols, Total		X											
RADIOACTIVITY													
(1) Alpha Total		X											
(2) Beta Total		X											
(3) Radium Total		X											
(4) Radium 226 Total		X											

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet
(Use the same format) instead of completing these pages.
SEE INSTRUCTIONS

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

OUTFALL NO.
003

INTAKE AND EFFLUENT CHARACTERISTICS

1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)			
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	(1)	(2)	
A. Biochemical Oxygen Demand (BOD)	14				1	mg/L						
B. Chemical Oxygen Demand (COD)	21				1	mg/L						
C. Total organic Carbon (TOC)	5.8				1	mg/L						
D. Total Suspended Solids (TSS)	13				1	mg/L						
E. Ammonia (as N)	0.11				1	mg/L						
F. Flow	VALUE 0 *			VALUE	1	MGD			VALUE			
G. Temperature (winter)	VALUE 11			VALUE	1	°C			VALUE			
H. Temperature (summer)	VALUE 31.5			VALUE	1	°C			VALUE			
I. pH	MINIMUM 7.4	MAXIMUM 8.9			1	STANDARD UNITS						

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES	
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	(1)	(2)

PART B - Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark column 2A for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

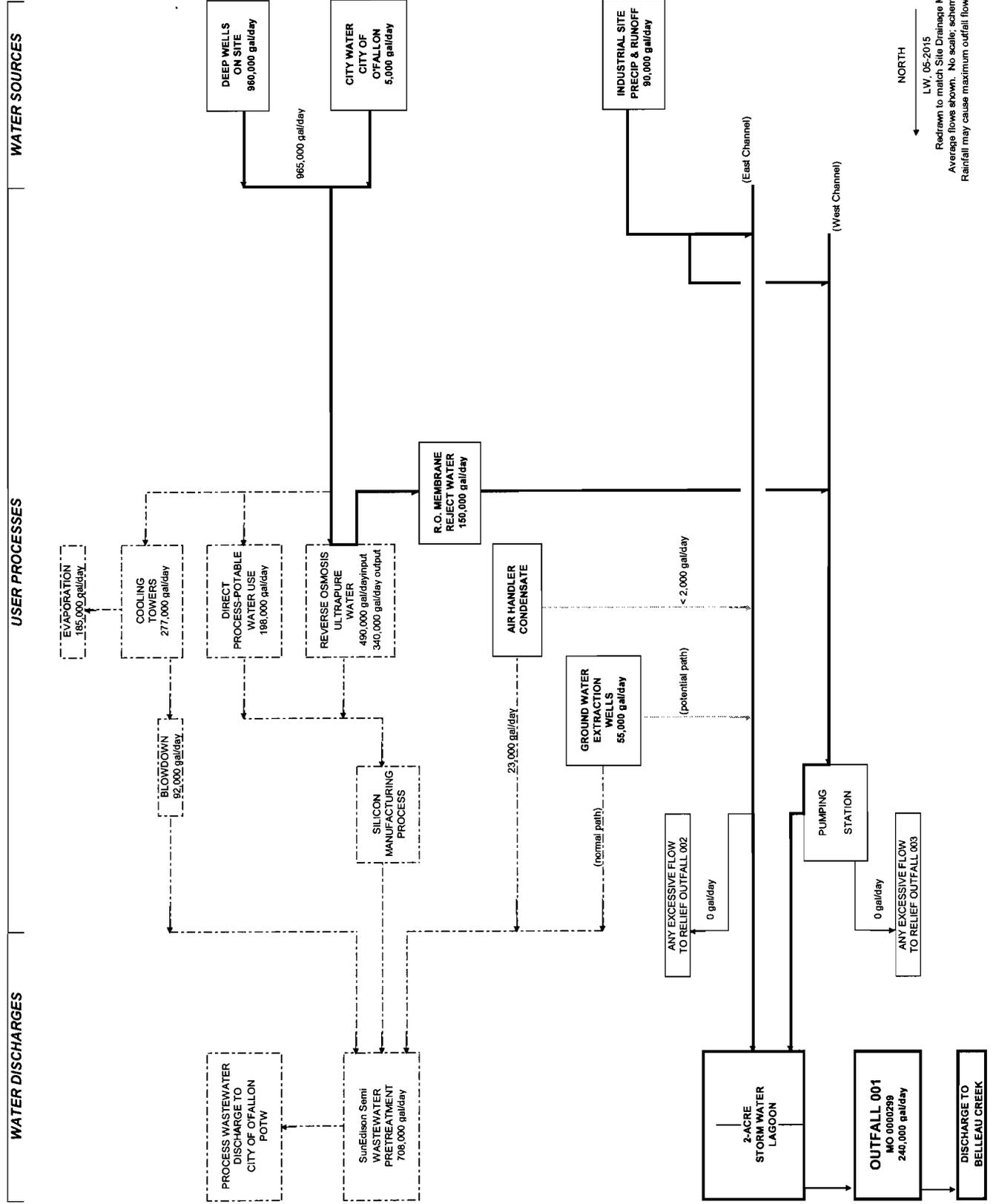
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS												
A. Bromide (24959-67-9)												
B. Chlorine, Total Residual												
C. Color												
D. Fecal Coliform												
E. Fluoride (16984-48-6)												
F. Nitrate - Nitrate (as N)												

* NOTE: OUTFALL 003 HAS NO FLOW, IS A RELIEF FOR OUTFALL 001, SO PART A MATCHES OUTFALL 001, ALL PART B POLLUTANTS ARE BELIEVED ABSENT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						
G. Nitrogen, Total Organic (as N)		X												
H. Oil and Grease		X												
I. Phosphorus (as P), Total (7723-14-0)		X												
J. Sulfate (as SO ₄) (14808-79-8)		X												
K. Sulfide (as S)		X												
L. Sulfite (as SO ₃) (14265-45-3)		X												
M. Surfactants		X												
N. Aluminum, Total (7429-90-5)		X												
O. Barium, Total (7440-39-3)		X												
P. Boron, Total (7440-42-8)		X												
Q. Cobalt, Total (7440-48-4)		X												
R. Iron, Total (7439-89-6)		X												
S. Magnesium, Total (7439-95-4)		X												
T. Molybdenum, Total (7439-98-7)		X												
U. Manganese, Total (7439-96-5)		X												
V. Tin, Total (7440-31-5)		X												
W. Titanium, Total (7440-32-6)		X												

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVRG. VALUE		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)		X												
2M. Arsenic, Total (7440-38-2)		X												
3M. Beryllium, Total (7440-41-7)		X												
4M. Cadmium, Total (7440-43-9)		X												
5M. Chromium III (16065-83-1)		X												
6M. Chromium VI (18540-29-9)		X												
7M. Copper, Total (7440-50-8)		X												
8M. Lead, Total (7439-92-1)		X												
9M. Mercury, Total (7439-97-6)		X												
10M. Nickel, Total (7440-02-0)		X												
11M. Selenium, Total (7782-49-2)		X												
12M. Silver, Total (7440-22-4)		X												
13M. Thallium, Total (7440-28-0)		X												
14M. Zinc, Total (7440-66-6)		X												
15M. Cyanide, Amenable to Chlorination		X												
16M. Phenols, Total		X												
RADIOACTIVITY														
(1) Alpha Total		X												
(2) Beta Total		X												
(3) Radium Total		X												
(4) Radium 226 Total		X												

Form C, Fig. 2.40 A, FACILITY WATER PATH LINE DRAWING





MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
**FORM D – APPLICATION FOR DISCHARGE PERMIT –
 PRIMARY INDUSTRIES**

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

SunEdison Semiconductor

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO - 0000299

This form is to be filled out in addition to forms A and C "Application for Discharge Permit" for the Industries listed below:

INDUSTRY CATEGORY

- | | |
|-----------------------------------|---|
| Adhesives and sealants | Ore mining |
| Aluminum forming | Organic chemicals manufacturing |
| Auto and other laundries | Paint and ink formulation |
| Battery manufacturing | Pesticides |
| Coal mining | Petroleum refining |
| Coil coating | Pharmaceutical preparations |
| Copper forming | Photographic equipment and supplies |
| Electric and electronic compounds | Plastic and synthetic materials manufacturing |
| Electroplating | Plastic processing |
| Explosives manufacturing | Porcelain enameling |
| Foundries | Printing and publishing |
| Gum and wood chemicals | Pulp and paperboard mills |
| Inorganic chemicals manufacturing | Rubber processing |
| Iron and steel manufacturing | Soap and detergent manufacturing |
| Leather tanning and finishing | Steam electric power plants |
| Landfill | Textile mills |
| Mechanical products manufacturing | Timber products processing |
| Nonferrous metals manufacturing | |

**APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES**

TABLE II	
NPDES # (IF ASSIGNED) MO 0000299	OUTFALL NUMBER 001

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (all seven pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVE PRESENT	C. BELIEVE ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE (1) CONCENTRATION	B. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
METALS, AND TOTAL PHENOLS												
1M. Antimony, Total (7440-36-9)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
2M. Arsenic, Total (7440-38-2)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.0020					1	mg/l		
3M. Beryllium, Total (7440-41-7)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
4M. Cadmium, Total (7440-43-9)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
5M. Chromium III (16065-83-1)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
6M. Chromium VI (18540-29-9)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
7M. Copper, Total (7440-50-8)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.0089					1	mg/l		
8M. Lead, Total (7439-92-1)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
9M. Magnesium Total (7439-95-4)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	70					1	mg/l		
10M. Mercury, Total (7439-97-6)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
11M. Molybdenum Total (7439-98-7)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
12M. Nickel, Total (7440-02-0)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
13M. Selenium, Total (7782-49-2)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
14M. Silver, Total (7440-22-4)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
15M. Thallium, Total (7440-28-0)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
16M. Tin Total (7440-31-5)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
17M. Titanium Total (7440-32-6)		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
18M. Zinc, Total (7440-66-6)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.065					1	mg/l		

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
20M. Phenols, Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	

DIOXIN

2,3,7,8 - Tetra - chlorodibenzo-P-Dioxin (1764-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
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DESCRIBE RESULTS

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE	B. NO. OF ANALYSES			
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			(1) CONCENTRATION	(2) MASS		

GC/MS FRACTION - VOLATILE COMPOUNDS

1V. Acrolein (107-02-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
2V. Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
3V. Benzene (71-43-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
4V. Bis (Chloromethyl) Ether (542-88-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
5V. Bromoform (75-25-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
6V. Carbon Tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
7V. Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
8V. Chlorodibromomethane (124-48-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
9V. Chloroethane (75-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
10V. 2-Chloroethylvinyl Ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
11V. Chloroform (67-66-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
12V. Dichlorobromomethane (75-27-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
13V. Dichlorodifluoromethane (75-71-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
14V. 1,1 - Dichloroethane (75-34-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
15V. 1,2 - Dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
16V. 1,1 - Dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
17V. 1,3 - Dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
18V. 1,2 - Dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
19V. Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
20V. Methyl Bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
21V. Methyl Chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				D. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)						
	A. TESTING RE-QUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE	B. NO OF ANALYSES				
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION						(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)																
22V. Methylene Chloride (75-09-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
23V. 1,1,2,2 – Tetra- chloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
24V. Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
25V. Toluene (108-88-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
26V. 1,2 – Trans Dichloroethylene (156-50-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
27V. 1,1,1 – Tri – chloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
28V. 1,1,2 – Tri- chloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
29V. Trichloro – ethylene (79-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
30V. Trichloro – fluoromethane (75-69-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
31V. Vinyl Chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
GC/MS FRACTION – ACID COMPOUNDS																
1A. 2 – Chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
2A. 2,4 – Dichloro – phenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
3A. 2,4 – Dimethyl – phenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
4A. 4,6 – Dinitro - O- Cresol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
5A. 2,4 – Dinitro – phenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
6A. 2-Nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
7A. 4-Nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
8A. P – Chloro – M Cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
9A. Pentachloro – phenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
10A. Phenol (108-952)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
11A. 2,4,6 – Trichloro- phenol (89-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS		6. INTAKE (optional)			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE	B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS												
1B. Acenaphthene (83-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
2B. Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
3B. Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
4B. Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
5B. Benzo (a) Anthracene (56-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
6B. Benzo (a) Pyrene (50-32-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
7B. 3,4 - Benzofluoranthene (205-99-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
8B. Benzo (ghi) Perylene (191-24-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
9B. Benzo (k) Fluoranthene (207-08-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
11B. Bis (2-Chloroethyl) Ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
15B. Butyl Benzyl Phthalate (85-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
16B. 2-Chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
18B. Chrysene (218-01-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
19B. Dibenzo (a,h) Anthracene (53-70-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
20B. 1,2-Dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
21B. 1,3-Dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									

CONTINUED FROM PAGE 5

NPDES # (IF ASSIGNED)
MO 0000299

OUTFALL NUMBER
001

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)				
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GCMS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1, 4-Dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23B. 3, 3'-Dichlorobenzidine (91-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24B. Diethyl Phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
25B. Dimethyl Phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
26B. Di-N-butyl Phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
27B. 2,4-Dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
28B. 2,6-Dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
29B. Di-N-Octylphthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
31B. Fluoranthene (206-44-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
32B. Fluorene (86-73-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
33B. Hexachlorobenzene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
34B. Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
35B. Hexachloro-cyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
36B. Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
38B. Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
39B. Naphthalene (91-20-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
40B. Nitrobenzene (98-95-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
41B. N-Nitro-sodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
42B. N-Nitroso N-Propylamine (621-64-7)			✓												
43B. N-Nitro-sodiphenylamine (86-30-6)			✓												
44B. Phenanthrene (85-01-8)			✓												
45B. Pyrene (129-00-0)			✓												
46B. 1,2,4-Tri chlorobenzene (120-82-1)			✓												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			✓												
2P. α-BHC (319-84-6)			✓												
3P. β-BHC (319-84-6)			✓												
4P. γ-BHC (58-89-9)			✓												
5P. δ-BHC (319-86-8)			✓												
6P. Chlordane (57-74-9)			✓												
7P. 4,4'-DDT (50-29-3)			✓												
8P. 4,4'-DDE (72-55-9)			✓												
9P. 4,4'-DDD (72-54-8)			✓												
10P. Dieldrin (60-57-1)			✓												
11P. α-Endosulfan (115-29-7)			✓												
12P. β-Endosulfan (115-29-7)			✓												
13P. Endosulfan Sulfate (1031-07-8)			✓												
14P. Endrin (72-20-8)			✓												
15P. Endrin Aldehyde (7421-93-4)			✓												
16P. Heptachlor (76-44-8)			✓												

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. IS ANY POLLUTANT LISTED IN ITEM 1.30 A SUBSTANCE OR A COMPONENT OF A SUBSTANCE WHICH YOU DO OR EXPECT THAT YOU WILL OVER THE NEXT FIVE YEARS USE OR MANUFACTURE AS AN INTERMEDIATE OR FINAL PRODUCT OR BYPRODUCT?

- YES (LIST ALL SUCH POLLUTANTS BELOW) NO (GO TO B)

B. ARE YOUR OPERATIONS SUCH THAT YOUR RAW MATERIALS, PROCESSES OR PRODUCTS CAN REASONABLE BE EXPECTED TO VARY SO THAT YOUR DISCHARGES OF POLLUTANTS MAY DURING THE NEXT FIVE YEARS EXCEED TWO TIMES THE MAXIMUM VALUES REPORTED IN ITEM 1.30?

- YES (COMPLETE C BELOW) NO (GO TO SECTION 3.00)

C. IF YOU ANSWERED "YES" TO ITEM B, EXPLAIN BELOW AND DESCRIBE IN DETAIL THE SOURCES AND EXPECTED LEVELS OF SUCH POLLUTANTS THAT YOU ANTICIPATE WILL BE DISCHARGED FROM EACH OUTFALL OVER THE NEXT FIVE YEARS, TO THE BEST OF YOUR ABILITY AT THIS TIME. CONTINUE ON ADDITIONAL SHEETS IF YOU NEED MORE SPACE.

3.00 CONTRACT ANALYSIS INFORMATION

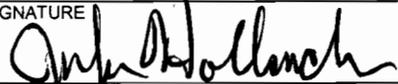
WERE ANY OF THE ANALYSES REPORTED IN 1.30 PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

- YES (LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)
 NO (GO TO SECTION 4.00)

A. NAME	B. ADDRESS	C. TELEPHONE (area code and number)	D. POLLUTANTS ANALYZED (list)
PDC Laboratories	3278 N. Hwy 67, Florissant MO	(800) 333-3278	As, Cu, Mg, Zn

4.00 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the 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.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	PHONE NUMBER (AREA CODE AND NUMBER)
JOAN HOLLANDER SITE MANAGER	636-474-5465
SIGNATURE	DATE SIGNED
	05/22/2015

**APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES**

NOTE: OUTFALL 002 HAS NO FLOW, IS A RELIEF FOR OUTFALL 001, SO ALL POLLUTANTS ARE BELIEVED ABSENT

TABLE II	
NPDES # (IF ASSIGNED) MO 0000299	OUTFALL NUMBER 002

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (all seven pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVE D PRESENT	C. BELIEVE D ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE CONCENTRATION	B. INTAKE (optional)	
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			(1) CONCENTRATION	(2) MASS
METALS, AND TOTAL PHENOLS											
1M. Antimony, Total (7440-36-9)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
2M. Arsenic, Total (7440-38-2)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
3M. Beryllium, Total (7440-41-7)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
4M. Cadmium, Total (7440-43-9)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
5M. Chromium III (16065-83-1)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
6M. Chromium VI (18540-29-9)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
7M. Copper, Total (7440-50-8)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
8M. Lead, Total (7439-92-1)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
9M. Magnesium Total (7439-95-4)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
10M. Mercury, Total (7439-97-6)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
11M. Molybdenum Total (7439-98-7)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
12M. Nickel, Total (7440-02-0)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
13M. Selenium, Total (7782-49-2)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
14M. Silver, Total (7440-22-4)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
15M. Thallium, Total (7440-28-0)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
16M. Tin Total (7440-31-5)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
17M. Titanium Total (7440-32-6)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								
18M. Zinc, Total (7440-66-6)		<input type="checkbox"/>	<input checked="" type="checkbox"/>								

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE	B. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)												
22V. Methylene Chloride (75-09-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
24V. Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
25V. Toluene (108-88-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
26V. 1,2 – Trans Dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
27V. 1,1,1 – Tri-chloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
28V. 1,1,2 – Tri-chloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
29V. Trichloro – ethylene (79-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
30V. Trichloro – fluoromethane (75-69-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
31V. Vinyl Chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									

GC/MS FRACTION – ACID COMPOUNDS												
1A. 2 – Chlorophenol (95-67-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
2A. 2,4 – Dichloro – phenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
3A. 2,4 – Dimethyl – phenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
4A. 4,6 – Dinitro – O-Cresol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
5A. 2,4 – Dinitro – phenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
6A. 2-Nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
7A. 4-Nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
8A. P – Chloro – M Cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
9A. Pentachloro – phenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
10A. Phenol (108-952)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
11A. 2,4,6 – Trichloro-phenol (88-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
12A. 2 – methyl – 4,6 dinitrophenol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE	B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS												
1B. Acenaphthene (83-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
2B. Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
3B. Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
4B. Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
5B. Benzo (a) Anthracene (56-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
6B. Benzo (a) Pyrene (50-32-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
7B. 3,4 - Benzofluoranthene (205-99-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
8B. Benzo (ghi) Perylene (191-24-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
9B. Benzo (k) Fluoranthene (207-08-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
11B. Bis (2-Chloroethyl) Ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
12B. Bis (2-Chloroisopropyl) Ether (39636-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
15B. Butyl Benzyl Phthalate (85-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
16B. 2-Chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
18B. Chrysene (218-01-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
19B. Dibenzo (a,h) Anthracene (53-70-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
20B. 1,2 - Dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
21B. 1,3 - Dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									

CONTINUED FROM PAGE 5

NPDES # (IF ASSIGNED)
MO 0000299

OUTFALL NUMBER
002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS			6. INTAKE (optional)				
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1, 4-Dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23B. 3, 3'-Dichlorobenzidine (91-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24B. Diethyl Phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
25B. Dimethyl Phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
26B. Di-N-butyl Phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
27B. 2,4-Dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
28B. 2,6-Dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
29B. Di-N-Octylphthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
31B. Fluoranthene (206-44-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
32B. Fluorene (86-73-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
33B. Hexachlorobenzene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
34B. Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
35B. Hexachlorocyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
36B. Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
38B. Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
39B. Naphthalene (91-20-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
40B. Nitrobenzene (98-95-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
41B. N-Nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						4. UNITS			5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
42B. N-Nitroso N-Propylamine (621-64-7)			✓												
43B. N-Nitrosodiphenylamine (86-30-6)			✓												
44B. Phenanthrene (85-01-8)			✓												
45B. Pyrene (129-00-0)			✓												
46B. 1,2,4-Tri chlorobenzene (120-82-1)			✓												

GC/MS FRACTION - PESTICIDES

1P. Aldrin (309-00-2)			✓												
2P. α-BHC (319-84-6)			✓												
3P. β-BHC (319-84-6)			✓												
4P. γ-BHC (88-89-9)			✓												
5P. δ-BHC (319-86-8)			✓												
6P. Chlordane (57-74-9)			✓												
7P. 4,4'-DDT (50-29-3)			✓												
8P. 4,4'-DDE (72-55-9)			✓												
9P. 4,4'-DDD (72-54-8)			✓												
10P. Dieldrin (60-57-1)			✓												
11P. α-Endosulfan (115-29-7)			✓												
12P. β-Endosulfan (115-29-7)			✓												
13P. Endosulfan Sulfate (1031-07-8)			✓												
14P. Endrin (72-20-8)			✓												
15P. Endrin Aldehyde (7421-93-4)			✓												
16P. Heptachlor (76-44-8)			✓												

CONTINUED FROM PAGE 7

NPDES # (IF ASSIGNED)
MO 0000299

OUTFALL NUMBER
002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "x"		3. EFFLUENT				4. UNITS		5. INTAKE (optional)	
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE	B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
GC/MS FRACTION - PESTICIDES (continued)										
17P. Heptachlor Epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
18P. PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
19P. PBC-1254 (11097-69-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
20P. PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
21P. PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
22P. PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
23P. PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
24P. PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
25P. Toxaphene (6001-35-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
J. RADIOACTIVITY										
(1) Alpha Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
(2) Beta Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
(3) Radium Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
(4) Radium 226 Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							

**APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES**

NOTE: OUTFALL 003 HAS NO FLOW, IS A RELIEF FOR OUTFALL 001, SO ALL POLLUTANTS ARE BELIEVED ABSENT

TABLE II	
NPDES # (IF ASSIGNED) MO 0000299	OUTFALL NUMBER 003

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (all seven pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVE D PRESENT	C. BELIEVE D ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE (1) CONCENTRATION	B. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
METALS, AND TOTAL PHENOLS												
1M. Antimony, Total (7440-36-9)		L	✓									
2M. Arsenic, Total (7440-38-2)		L	✓									
3M. Beryllium, Total (7440-41-7)		L	✓									
4M. Cadmium, Total (7440-43-9)		L	✓									
5M. Chromium III (16065-83-1)		L	✓									
6M. Chromium VI (18540-28-9)		L	✓									
7M. Copper, Total (7440-50-8)		L	✓									
8M. Lead, Total (7439-92-1)		L	✓									
9M. Magnesium Total (7439-95-4)		L	✓									
10M. Mercury, Total (7439-97-6)		L	✓									
11M. Molybdenum Total (7439-98-7)		L	✓									
12M. Nickel, Total (7440-02-0)		L	✓									
13M. Selenium, Total (7782-49-2)		L	✓									
14M. Silver, Total (7440-22-4)		L	✓									
15M. Thallium, Total (7440-28-0)		L	✓									
16M. Tin Total (7440-31-5)		L	✓									
17M. Titanium Total (7440-32-6)		L	✓									
18M. Zinc, Total (7440-66-6)		L	✓									

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
20M. Phenols, Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	

DIOXIN

2.3,7,8 - Tetra - chlorodibenzo-P-Dioxin (1764-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	
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DESCRIBE RESULTS

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT			D. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)	
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE	B. MAXIMUM 30 DAY VALUE (if available)	C. LONG TERM AVRG. VALUE (if available)		A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE	B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS

GC/MS FRACTION - VOLATILE COMPOUNDS

1V. Acrolein (107-02-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
2V. Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
3V. Benzene (71-43-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
4V. Bis (Chloromethyl) Ether (542-88-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
5V. Bromoform (75-25-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
6V. Carbon Tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
7V. Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
8V. Chlorodibromomethane (124-48-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
9V. Chloroethane (75-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
10V. 2-Chloroethylvinyl Ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
11V. Chloroform (67-66-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
12V. Dichlorobromomethane (75-27-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
13V. Dichlorodifluoromethane (75-71-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
14V. 1,1 - Dichloroethane (75-34-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
15V. 1,2 - Dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
16V. 1,1 - Dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
17V. 1,3 - Dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
18V. 1,2 -Dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
19V. Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
20V. Methyl Bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
21V. Methyl Chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS	5. INTAKE (optional)	
	A. TESTING RE-QUIRO	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		D. NO. OF ANALYSES		A. LONG TERM AVRG. VALUE	B. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS				
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)									
22V. Methylene Chloride (75-09-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
24V. Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
25V. Toluene (108-88-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
26V. 1,2 – Trans Dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
27V. 1,1,1 – Tri-chloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
28V. 1,1,2 – Tri-chloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
29V. Trichloro-ethylene (79-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
30V. Trichloro-fluoromethane (75-69-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
31V. Vinyl Chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
GC/MS FRACTION – ACID COMPOUNDS									
1A. 2 – Chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
2A. 2,4 – Dichloro-phenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
3A. 2,4 – Dimethyl-phenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
5A. 2,4 – Dinitro-phenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
6A. 2-Nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
7A. 4-Nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
8A. P – Chloro – M Cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
9A. Pentachloro-phenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
10A. Phenol (108-95-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
11A. 2,4,6 – Trichloro-phenol (88-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
12A. 2 – methyl – 4,6 dinitrophenol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						4. UNITS			5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2B. Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3B. Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4B. Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5B. Benzo (a) Anthracene (56-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6B. Benzo (a) Pyrene (50-32-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7B. 3,4 - Benzofluoranthene (205-99-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8B. Benzo (ghi) Perylene (191-24-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9B. Benzo (k) Fluoranthene (207-08-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11B. Bis (2-Chloroethyl) Ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15B. Butyl Benzyl Phthalate (85-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
16B. 2-Chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
18B. Chrysene (218-01-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
19B. Dibenzo (a,h) Anthracene (53-70-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
20B. 1,2 - Dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
21B. 1,3 - Dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

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NPDES # (IF ASSIGNED)
MO 0000299

OUTFALL NUMBER
003

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		(1) CONCENTRATION	(2) MASS	
GCMS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)													
22B. 1, 4-Dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
23B. 3, 3'-Dichlorobenzidine (91-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
24B. Diethyl Phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
25B. Dimethyl Phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
26B. Di-N-butyl Phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
27B. 2,4-Dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
28B. 2,6-Dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
29B. Di-N-Octylphthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
31B. Fluoranthene (206-44-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
32B. Fluorene (86-73-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
33B. Hexachlorobenzene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
34B. Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
35B. Hexachloro-cyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
36B. Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
38B. Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
39B. Naphthalene (91-20-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
40B. Nitrobenzene (98-95-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
41B. N-Nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		(1) CONCENTRATION	(2) MASS	
GCMS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)													
42B. N-Nitroso N-Propylamine (621-64-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
43B. N-Nitrosodiphenylamine (86-30-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
44B. Phenanthrene (85-01-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
45B. Pyrene (129-00-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
46B. 1,2,4-Tri chlorobenzene (120-82-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
GCMS FRACTION - PESTICIDES													
1P. Aldrin (309-00-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
2P. α-BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
3P. β-BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
4P. γ-BHC (58-89-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
5P. δ-BHC (319-86-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
6P. Chlordane (57-74-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
7P. 4,4'-DDT (50-29-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
8P. 4,4'-DDE (72-55-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
9P. 4,4'-DDD (72-54-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
10P. Dieldrin (60-57-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
11P. α-Endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
12P. β-Endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
13P. Endosulfan Sulfate (1031-07-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
14P. Endrin (72-20-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
15P. Endrin Aldehyde (7421-93-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
16P. Heptachlor (76-44-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. LONG TERM AVRG. VALUE	B. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
GC/MS FRACTION - PESTICIDES (continued)												
17P. Heptachlor Epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
18P. PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
19P. PBC-1254 (11097-69-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
20P. PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
21P. PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
22P. PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
23P. PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
24P. PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
25P. Toxaphene (8001-35-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
J. RADIOACTIVITY												
(1) Alpha Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
(2) Beta Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
(3) Radium Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
(4) Radium 226 Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									



May 22, 2015

Mr. Chris Wieberg, Chief Operating Permits Section
Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

Re: Permit Renewal for SunEdison Semiconductor - MSOP MO-0000299

Dear Mr. Wieberg:

The purpose of this letter is to submit the required forms and supporting documents for the renewal of Missouri State Operating Permit (MSOP) MO-0000299 for SunEdison Semiconductor (SunEdison), formerly known as MEMC Electronic Materials, Inc. Please note, land application of sludge was an activity associated with the clean out of our lagoons and will not likely occur again in the foreseeable future at this facility; therefore, we are requesting that land application Permitted Features #004 through #009 be removed from the next operating permit.

Also included with this renewal application is a report prepared by Barr Engineering Company (Barr) titled, *Site-Specific Effluent Limitations Determination, Metals Translator/Water-Effect Ratio Study*. This report was initiated in early 2013 in cooperation with personnel from Missouri Department of Natural Resources (MDNR) Water Protection Program. All sampling data was collected in accordance with the sampling plans approved on January 2, 2013 and September 19, 2014 for the metals translator and water-effect ratio (WER) study, respectively. The report includes detailed information justifying the application of revised effluent limitations for copper and zinc, calculated using a site-specific metals translator value. Note, a water-effect ratio study and biotic ligand model were also performed for the site. Information detailing these studies is included in the report; however, the metals translator study alone is the basis for requesting revised effluent limits for copper and zinc at this time. SunEdison is interested in pursuing a site-specific water quality criteria for copper on the basis of the water effect ratio study and recognizes that the latest version of 10 CSR 20-7.031(5)(S) must be approved by the US Environmental Protection Agency prior to SunEdison being able to utilize this process for a site

SunEdison Semiconductor
501 Pearl Drive
St. Peters, MO 63376
(636) 474-5000

www.sunedisonsemi.com

specific copper criteria. SunEdison will continue to monitor the progress of the approval of the state's water quality regulations and work with the MDNR as needed to seek approval of the site specific criteria.

With the submittal of the necessary permit renewal materials and the enclosed report, prepared by Barr, it is requested that the effluent limitations for copper and zinc be revised to reflect the site-specific values resulting from the metals translator study. These values can be found in Table 4 of the enclosed report. Should you have any questions or require additional information regarding the permit renewal submittal, feel free to contact me by phone at (636) 474-5330 or by email at LWeaver@SunEdisonSemi.com. For questions regarding the enclosed report, please contact Rob Morrison of Barr at (573) 638-5025, or by email at RMorrison@Barr.com.

Sincerely,



Larry Weaver

SunEdison Semiconductor

cc.:

Charles Kutterer, SunEdison Semiconductor

Rob Morrison, P.E., Barr Engineering Co.

Allison Pearson, P.E., Barr Engineering Co.