

AUTHORIZATION TO DISCHARGE UNDER THE  
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended,

**OSRAM SYLVANIA, Inc.**  
100 Endicott Street  
Danvers, Massachusetts 01923

is authorized to discharge from a facility located at

OSRAM SYLVANIA, Inc.  
1193 Broad Street  
Central Falls, Rhode Island 02863

to receiving waters named

Blackstone River

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.


This permit shall become effective on October 1, 2012.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on September 29, 2006.

This permit consists of fourteen (14) pages in Part I including effluent limitations, monitoring requirements, etc. and ten (10) pages in Part II including General Conditions.

Signed this 15<sup>th</sup> day of August, 2012.

  
Angelo S. Liberti, P.E., Chief of Surface Water Protection  
Office of Water Resources  
Rhode Island Department of Environmental Management  
Providence, Rhode Island

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 002A (The discharge from the non-contact and contact cooling water wastestreams).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	<u>Discharge Limitations</u>					<u>Monitoring Requirement</u>	
	Quantity - lbs./day		Concentration - specify units			<u>Measurement Frequency</u>	<u>Sample Type</u>
	Average	Maximum	Average	Average	Maximum		
	<u>Monthly</u>	<u>Daily</u>	<u>Monthly</u> *( <u>Minimum</u> )	<u>Weekly</u> *( <u>Average</u> )	<u>Daily</u> *( <u>Maximum</u> )		
pH			(6.5 S.U.)		(9.0 S.U.)	2/Month	8 Grabs <sup>1</sup>

<sup>1</sup> A sampling event shall consist of eight (8) grab samples taken at equal intervals throughout a given workday.

\* Values in parentheses ( ) are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

\*\* Samples must be taken during dry weather periods (no rain within 72 hours of sample date).

\*\*\*Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 002A.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 200A (The discharge from the contact cooling water waste stream only). Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily		
Production Rate <sup>1</sup>	50,000					1/Month	Calculated
TSS	5.75	11.5				2/Month	24-Hr. Comp.
Oil & Grease	5.75	11.5				2/Month	Grab

<sup>1</sup> The limits expressed on this page shall be invoked when the permittee's total average monthly production is less than or equal to 50,000 pounds of furnace pull per discharge day. Discharge days are defined as days with a wastewater discharge associated with the production of incandescent bulbs or tubing.

\* Samples must be taken during dry weather periods (no rain within 72 hours of sample date).

\*\* Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at Outfall 200A (the discharge from the contact cooling water wastestream only).

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 200B (The discharge from the contact cooling water stream only). Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirement</u>			
	<u>Quantity - lbs./day</u>		<u>Concentration - specify units</u>			<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>		
Production <sup>1</sup>	100,000					1/Month	Calculated
TSS	11.5	23				2/Month	24-Hr. Comp.
Oil & Grease	11.5	23				2/Month	Grab

<sup>1</sup> The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 50,000 pounds of furnace pull per discharge day and less than or equal to 100,000 pounds of furnace pull per discharge day. Discharge days are defined as days with a wastewater discharge associated with the production of incandescent bulbs or tubing.

\* Samples must be taken during dry weather periods (no rain within 72 hours of sample date).

\*\* Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at Outfall 200B (the discharge from the contact cooling water wastestream only).

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 200C. (The discharge from the contact cooling water wastestream only.) Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>					<u>Monitoring Requirement</u>	
	<u>Quantity - lbs./day</u>		<u>Concentration - specify units</u>			<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>		
Production <sup>1</sup>	150,000					1/Month	Calculated
TSS	17.25	34.5				2/Month	24-Hr. Comp.
Oil & Grease	17.25	34.5				2/Month	Grab

<sup>1</sup> The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 100,000 pounds of furnace pull per discharge day and less than or equal to 150,000 pounds of furnace pull per discharge day. Discharge days are defined as days with a wastewater discharge associated with the production of incandescent bulbs or tubing.

\* Samples must be taken during dry weather periods (no rain within 72 hours of sample date).

\*\* Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at Outfall 200C (the discharge from the contact cooling water wastestream only).



PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

5. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 200D. (The discharge from the contact cooling water wastestream only.)

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>			<u>Concentration - specify units</u>		<u>Monitoring Requirement</u>	
	Quantity - lbs./day						
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Production <sup>1</sup>	---					1/Month	Calculated
TSS	23	46				2/Month	24-Hr. Comp.
Oil & Grease	23	46				2/Month	Grab

<sup>1</sup> The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 150,000 pounds of furnace pull per discharge day . Discharge days are defined as days with a wastewater discharge associated with the production of incandescent bulbs or tubing.

\* Samples must be taken during dry weather periods (no rain within 72 hours of sample date).

\*\* Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at Outfall 200D (the discharge from the contact cooling water wastestream only).

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

6. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 200. (The discharge from the contact cooling water wastestream only.)

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>					<u>Monitoring Requirement</u>	
	<u>Quantity - lbs./day</u>		<u>Concentration - specify units</u>			<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>		
Flow	0.15 MGD	--- MGD				Continuous	Recorder
Total Residual Chlorine			2.0 mg/l		2.0 mg/l	1/Month	Grab <sup>1</sup>

--- Signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

<sup>1</sup> The following methods may be used to analyze the grab samples: (1) DPD Spectrophotometric, EPA No. 330.5 or Standard Methods (18<sup>th</sup> Edition) No. 4500-Cl G; (2) DPD Titrimetric, EPA No. 330.4 or Standard Methods (18<sup>th</sup> Edition) No. 4500-Cl F; (3) Amperometric Titration, EPA No. 330.1 or Standard Methods (18<sup>th</sup> Edition) No. 4500-Cl D or ASTM No. D1253-86(92); (4) Iodometric Direct Titration, EPA No. 330.3 or Standard Methods (18<sup>th</sup> Edition) No. 4500-Cl B; (5) Iodometric Back Titration (either end-point), EPA No. 330.2 or Standard Methods (18<sup>th</sup> Edition) No. 4500-Cl C.

\* Samples must be taken during dry weather periods (no rain within 72 hours of sample date).

\*\* Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at Outfall 200 (the discharge from the contact cooling water wastestream only).

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

7. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 300B. (The discharge from the non-contact cooling water wastestream only).

Such discharges shall be monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>			<u>Concentration - specify units</u>		<u>Monitoring Requirement</u>	
	Quantity - lbs. per day		Average <u>Monthly</u>	Average <u>Weekly</u>	Maximum <u>Daily</u>	Measurement <u>Frequency</u>	Sample <u>Type</u>
	Average <u>Monthly</u>	Maximum <u>Daily</u>					
Flow	--- GPD	--- GPD				1/Month	Calculated <sup>1</sup>

<sup>1</sup> Flow shall be either calculated using a flow totalizer or estimated using the cooling water pumping rate.

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

\* Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 300B (the discharge from the non-contact cooling water wastestream only).



8.
  - a. The pH of the effluent shall not be less than 6.5 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.
  - b. The discharge shall not cause visible discoloration of the receiving waters.
  - c. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
9. All hazardous substances as defined in the RIPDES Regulations stored on site shall meet the following hazardous substance storage requirements. All hazardous substances stored at the Central Falls Facility shall be stored: (1) within a diked area or other form of secondary containment, (2) supported by a base impervious to the material being contained, (3) covered by a permanent structure which prevents entry of precipitation, and (4) within a secondary containment area capable of holding without leakage or structural failure, 110 percent of the entire volume of the largest container within the area of the dike or barrier. "Hazardous substances" according to the RIPDES Regulations means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA (see Appendix A, Table V of the RIPDES Regulations).
10. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
  - a. That any 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 ug/l);
    - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitro-phenol; and one milligram per liter (1 mg/l) for antimony;
    - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
  - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent 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) Five hundred micrograms per liter (500 ug/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 40 C.F.R. s122.21(g)(7); or



- (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
  - c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant which was not reported in the permit application.
- 11. The permittee must implement appropriate best management practices to ensure that discharges of non-contact cooling water are not contaminated by failing/leaking heat exchangers. Appropriate best management practices may include but not be limited to; material inventory, preventative maintenance and equipment replacement, testing of equipment (dye testing, eddy current testing, pressure testing), routine visual observations of equipment and discharge, or sampling of the discharge for an indicator pollutant. The permittee must submit a self-certification statement that the discharge is not contaminated to the Department by January 15<sup>th</sup> of each year. The certification must summarize the selected best management practices used to determine that the discharge is not contaminated and include the dates of all inspections, testing, maintenance/equipment replacement, the results of all inspections and testing, the personnel performing inspections, testing and maintenance, and any actions taken in response to the inspections and testing. The statement must also identify incidents where discharges have been contaminated by failing/leaking heat exchangers. The statements must be maintained on site for a period of five (5) years and shall be signed and certified in accordance with Rule 12 of the RIPDES regulations.
  - 12. This permit serves as the State's Water Quality Certificate for the discharges described herein.
  - 13. The permit authorizes the use of Chem-aqua 11000 within the contact cooling water system at an as-product dose not to exceed 100 PPM (100 mg/L). This permit also authorizes the use of Chem-aqua 42171 within the contact cooling water system at an as-product dose not to exceed 28.2 PPM (28.2 mg/L). The permittee shall obtain DEM approval prior to increasing the amount of any chemicals used or prior to using any alternative chemicals.

**B. DETECTION LIMITS**

The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard

Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be submitted along with the monitoring reports.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed". Documentation supporting this claim shall be submitted along with the monitoring report. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit

(MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;
2. results reported as less than the MDL shall be included as zeros.



### LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection Limits (MDLs) represent the required Rhode Island MDLs.

Volatiles - EPA Method 624		MDL ug/l (ppb)	Pesticides - EPA Method 608		MDL ug/l (ppb)
1V	acrolein	10.0	18P	PCB-1242	0.289
2V	acrylonitrile	5.0	19P	PCB-1254	0.298
3V	benzene	1.0	20P	PCB-1221	0.723
5V	bromoform	1.0	21P	PCB-1232	0.387
6V	carbon tetrachloride	1.0	22P	PCB-1248	0.283
7V	chlorobenzene	1.0	23P	PCB-1260	0.222
8V	chlorodibromomethane	1.0	24P	PCB-1016	0.494
9V	chloroethane	1.0	25P	toxaphene	1.670
10V	2-chloroethylvinyl ether	5.0			
11V	chloroform	1.0	Base/Neutral - EPA Method 625		MDL ug/l (ppb)
12V	dichlorobromomethane	1.0	1B	acenaphthene *	1.0
14V	1,1-dichloroethane	1.0	2B	acenaphthylene *	1.0
15V	1,2-dichloroethane	1.0	3B	anthracene *	1.0
16V	1,1-dichloroethylene	1.0	4B	benzidine	4.0
17V	1,2-dichloropropane	1.0	5B	benzo(a)anthracene *	2.0
18V	1,3-dichloropropylene	1.0	6B	benzo(a)pyrene *	2.0
19V	ethylbenzene	1.0	7B	3,4-benzofluoranthene *	1.0
20V	methyl bromide	1.0	8B	benzo(ghi)perylene *	2.0
21V	methyl chloride	1.0	9B	benzo(k)fluoranthene *	2.0
22V	methylene chloride	1.0	10B	bis(2-chloroethoxy)methane	2.0
23V	1,1,2,2-tetrachloroethane	1.0	11B	bis(2-chloroethyl)ether	1.0
24V	tetrachloroethylene	1.0	12B	bis(2-chloroisopropyl)ether	1.0
25V	toluene	1.0	13B	bis(2-ethylhexyl)phthalate	1.0
26V	1,2-trans-dichloroethylene	1.0	14B	4-bromophenyl phenyl ether	1.0
27V	1,1,1-trichloroethane	1.0	15B	butylbenzyl phthalate	1.0
28V	1,1,2-trichloroethane	1.0	16B	2-chloronaphthalene	1.0
29V	trichloroethylene	1.0	17B	4-chlorophenyl phenyl ether	1.0
31V	vinyl chloride	1.0	18B	chrysene *	1.0
Acid Compounds - EPA Method 625		MDL ug/l (ppb)	19B	dibenzo (a,h)anthracene *	2.0
1A	2-chlorophenol	1.0	20B	1,2-dichlorobenzene	1.0
2A	2,4-dichlorophenol	1.0	21B	1,3-dichlorobenzene	1.0
3A	2,4-dimethylphenol	1.0	22B	1,4-dichlorobenzene	1.0
4A	4,6-dinitro-o-cresol	1.0	23B	3,3' -dichlorobenzidine	2.0
5A	2,4-dinitrophenol	2.0	24B	diethyl phthalate	1.0
6A	2-nitrophenol	1.0	25B	dimethyl phthalate	1.0
7A	4-nitrophenol	1.0	26B	di-n-butyl phthalate	1.0
8A	p-chloro-m-cresol	2.0	27B	2,4-dinitrotoluene	2.0
9A	pentachlorophenol	1.0	28B	2,6-dinitrotoluene	2.0
10A	phenol	1.0	29B	di-n-octyl phthalate	1.0
11A	2,4,6-trichlorophenol	1.0	30B	1,2-diphenylhydrazine (as azobenzene)	1.0
Pesticides - EPA Method 608		MDL ug/l (ppb)	31B	fluoranthene *	1.0
1P	aldrin	0.059	32B	fluorene *	1.0
2P	alpha-BHC	0.058	33B	hexachlorobenzene	1.0
3P	beta-BHC	0.043	34B	hexachlorobutadiene	1.0
4P	gamma-BHC	0.048	35B	hexachlorocyclopentadiene	2.0
5P	delta-BHC	0.034	36B	hexachloroethane	1.0
6P	chlordan	0.211	37B	indeno(1,2,3-cd)pyrene *	2.0
7P	4,4' -DDT	0.251	38B	isophorone	1.0
8P	4,4' -DDE	0.049	39B	naphthalene *	1.0
9P	4,4' -DDD	0.139	40B	nitrobenzene	1.0
10P	dieldrin	0.082	41B	N-nitrosodimethylamine	1.0
11P	alpha-endosulfan	0.031	42B	N-nitrosodi-n-propylamine	1.0
12P	beta-endosulfan	0.036	43B	N-nitrosodiphenylamine	1.0
13P	endosulfan sulfate	0.109	44B	phenanthrene *	1.0
14P	endrin	0.050	45B	pyrene *	1.0
15P	endrin aldehyde	0.062	46B	1,2,4-trichlorobenzene	1.0
16P	heptachlor	0.029			
17P	heptachlor epoxide	0.040			

## OTHER TOXIC POLLUTANTS

	MDL ug/l (ppb)
Antimony, Total	5.0
Arsenic, Total	5.0
Beryllium, Total	0.2
Cadmium, Total	0.1
Chromium, Total	5.0
Chromium, Hexavalent	20.0
Copper, Total	20.0
Lead, Total	3.0
Mercury, Total	0.5
Nickel, Total	10.0
Selenium, Total	5.0
Silver, Total	1.0
Thallium, Total	5.0 - EPA Method 279.2 <sup>1</sup>
Zinc, Total	20.0
Asbestos	**
Cyanide, Total	10.0
Phenols, Total	50.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0

\* Polynuclear Aromatic Hydrocarbons

\*\* No Rhode Island Department of Environmental Management (RIDEM) MDL

### NOTE:

The MDL for a given analyte may vary with the type of sample. MDLs, which are determined in reagent water, may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).



C. **MONITORING AND REPORTING**

1. **Monitoring**

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136). Special attention should be put towards following the sampling techniques, preservation, and holding times listed in Table II of 40 CFR Part 136.

2. **Reporting**

Monitoring results obtained during the previous month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the 15<sup>th</sup> day of the month following the completed reporting period. The first report is due on November 15, 2012.

Signed copies of these, and all other reports required herein, shall be submitted to:

RIPDES Program  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
235 PROMENADE STREET  
PROVIDENCE, RHODE ISLAND 02908-5767

STATEMENT OF BASIS

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO.

**RI0001180**

NAME AND ADDRESS OF APPLICANT:

**OSRAM SYLVANIA, Inc.**  
100 Endicott Street  
Danvers, Massachusetts 01923

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

OSRAM SYLVANIA, Inc.  
1193 Broad Street  
Central Falls, Rhode Island 02863

RECEIVING WATER:

Blackstone River

CLASSIFICATION:

B1{a}

**I. Proposed Action, Type of Facility, and Discharge Location**

The above named applicant has applied to the Rhode Island Department of Environmental Management for reissuance of a RIPDES Permit to discharge into the designated receiving water. The facility is involved in the production of high intensity discharge lamp envelopes and hard glass tubing. The discharge is from contact and non-contact cooling water associated with the manufacture of glass products. All stormwater discharges must be covered under a separate permit.

**II. Permit Limitations and Conditions**

The effluent limitations, monitoring requirements, and any implementation schedule (if required) may be found in the draft permit. A quantitative description of the discharge in terms of significant effluent parameters based on discharge monitoring report (DMR) data for the last five years is shown in Attachment A.

**III. Permit Basis and Explanation of Effluent Limitation Derivation**

*The Facility*

OSRAM SYLVANIA, Incorporated is engaged in incandescent lamp envelope manufacturing such as Osram Sylvania Inc. 2012 final permit



as high intensity discharge glass lamp envelopes and hard glass tubing. The facility houses a borosilicate glass melting furnace, with associated glass forming equipment, packing, and warehouse areas. Borosilicate glass is used to produce high intensity discharge lamp envelopes and hard glass tubing. Contact cooling water (CCW) is used for quenching molten glass and then either returns to the CCW recirculation system or overflows to the Blackstone River via Outfall 200. In addition to the contact cooling water discharge, non-contact cooling water (NCCW) is also discharged on an intermittent basis via Outfall 300. The NCCW originates from a variety of overflow points in a complex cooling system network which is used for cooling machinery, and for cooling various types of equipment such as electrodes through the use of water jackets. The Chaces Lane area and the former Wastewater Treatment Plant (WWTP) Clarifier and Equalization Tank areas also discharge storm water to the Blackstone River via a point source discharge which must be permitted separately.

The process discharge is from contact and non-contact cooling water only (See Attachment B). The permit issued in September 1995 established Outfall 002A as the point where the discharge from the non-contact cooling water (Outfall No. 300B) and the contact cooling water stream (Outfall No. 200A,B,C, or D) combine.

A diagram of the contact cooling water (CCW) recirculation system is included in Attachment B. On a daily basis the typical discharge flow rate from the facility, which consists of CCW recirculation flow and NCCW typically ranges from 10 gpm to 50 gpm. This equates to 14,400 gpd to 72,000 gpd. Although typical flows are in the 10-50 gpm range, the facility is capable of discharging up to 350,000 gpd of CCW in the event that there is a failure in the recirculation system and fresh potable city water must be introduced into the system foregoing recirculation. Currently the glass production furnace operates on a 24 hours per day, 7 day per week basis and for this reason it is necessary to provide continuous cooling to the furnace. As a result the cooling system is designed to switch over to once thru city water should the recirculation system fail during a power outage. These higher CCW flows should only be experienced for short periods of time until the necessary maintenance and/or repairs have been made. In addition to unanticipated uses of once thru CCW, city water is also used during planned quarterly maintenance at the facility. During these periods the recirculation system is out of service for 1 to 2 days at a time, the discharge flow increases to 150 gpm or 216,000 gpd. Periodically, the recirculation system is also taken out of service for unscheduled maintenance. Although higher flows may be seen on a temporary, short-term basis, the average combined CCW and NCCW flows will not exceed 150,000 gpd.

#### *General Requirements*

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: identifying applicable technology-based limits; calculating allowable water-quality based discharge levels based on instream criteria, background data and available dilution; establishing Best Professional Judgment (BPJ) limits in accordance with Section 402 of the CWA; and assigning the most stringent as the final discharge limitations.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or States for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal. A technology-based limit is a numeric limit, which is determined by examining the capability of a treatment process to reduce or eliminate pollutants.

Appendix B of the Water Quality Regulations describes the flows used to determine compliance with the aquatic life criteria, specifying that the design flow to be utilized for aquatic life criteria shall not be exceeded at or above the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years (7Q10). The DEM has calculated the 7Q10 at the location of OSRAM SYLVANIA's final outfall 002A based on a comparison of the drainage areas for the Blackstone River



at the USGS Woonsocket Gauging Station # 01112500, the drainage area for the location of OSRAM SYLVANIA's outfall 002A, and the 7Q10 flow at Station # 01112500. Using the following steps a site-specific 7Q10 flow value was determined:

Step 1: Determine the Drainage Area of the watershed that is upstream of the gauge station:

$$DA_{\text{Upstream of Gauge}} = 416 \text{ mi}^2$$

Step 2: Find the 7Q10 flow for the gauge station:

$$7Q10_{\text{Gauge}} = 102.25 \text{ ft}^3/\text{sec}$$

Step 3: Determine drainage area of the watershed that is upstream from the point of discharge:

$$DA_{\text{Upstream of discharge}} = 474 \text{ mi}^2$$

Step 4: Calculate the equivalent 7Q10 flow using the following formula:

$$7Q10_{\text{OSRAM SYLVANIA}} = (7Q10_{\text{Gauge}}/DA_{\text{Upstream of gauge}}) \times (DA_{\text{Upstream of discharge}})$$

$$7Q10_{\text{OSRAM SYLVANIA}} = 116.5 \text{ ft}^3/\text{sec}$$

Based on the site-specific 7Q10 flow in the Blackstone River at the location of OSRAM SYLVANIA Products Incorporated's outfall, a dilution factor was then determined for outfall 002A:

$$DF = \frac{Q_D + Q_{dis.}}{Q_{dis.}}$$

Where: DF = Dilution Factor  
Q<sub>D</sub> = Design Flow (Receiving Water 7Q10 Flow)  
Q<sub>dis.</sub> = Discharge Flow

The dilution factor was determined to be 502.9. This dilution factor is based on a 7Q10 flow of 116.5 cfs and an average discharge flow of 0.232 cfs (0.150 MGD).

#### *Water Quality Based Permit Limitations*

The allowable effluent limitations were established based on the non-class A freshwater acute and chronic aquatic life criteria and human health criteria specified in Appendix B of the Rhode Island Water Quality Regulations, as amended, using 80% allocation when no background data was available or available data is impacted and 90% allocation when background data is available. There is no background data available or available data is impacted by upstream discharges, therefore, the allowable water quality-based discharge levels are set equal to 80% of the water quality criteria for Class B waters as listed in Appendix B of the Rhode Island Water Quality Regulations. Aquatic life criteria have been established to ensure the protection and propagation of aquatic life while human health criteria represent the pollutant levels that would not result in a significant risk to public health from ingestion of aquatic organisms. The more stringent of the two criteria was then used in establishing allowable effluent limitations.

For water quality-based limitations the allowable discharge limits were calculated as follows: Background concentration unknown or available data is impacted by sources that have not yet achieved water quality based limits.



$$\text{Limit} = (\text{DF}) * (\text{Criteria}) * (80\%)$$

In accordance with 40 CFR 122.44(d)(1)(iii), water quality based effluent limitations are only required for those pollutants in the discharge that have the reasonable potential to cause or contribute to the exceedence of instream criteria. In order to evaluate the need for permit limits, the allowable monthly average (chronic) and allowable maximum daily (acute) discharge concentrations are compared to the monthly average and maximum daily Discharge Monitoring Report (DMR) data or other monitoring data. Water quality data from Osram Sylvania Inc.'s May 23, 2011 permit application, which included priority pollutant scan data from 2006 as well as Chlorine effluent data from 2010, was compared to potential permit limits for those parameters. For each of the above-mentioned compounds, a reasonable potential analysis was conducted based on the 80% allocation, and the site-specific dilution factor of 502.9. Based on this comparison, it was determined that amongst the parameters evaluated, no water quality-based effluent limits would be required because all data was identified as believed absent, or did not demonstrate reasonable potential to violate. It should be noted that daily maximum and monthly average Total Residual Chlorine limits of 2.0 mg/L and 2.0 mg/L are being maintained from the February 20, 2008 permit modification based on Best Professional Judgement. The February 20, 2008 permit modification eliminated limitations in the 2006 permit for Total Silver and Total Lead.

#### *Outfall 200A,B,C, or D – Contact Cooling Water*

##### *Federal Effluent Limitation Guideline Requirements*

Permit limits for Outfall 200A,B,C, or D have been established based on the applicable Federal effluent guidelines (40 CFR, Part 426, Subpart L – Incandescent Lamp Envelope Manufacturing and 40 CFR, Part 426 Subpart J – Glass Tubing (Danner) Manufacturing). 40 CFR, Part 426, Subpart L – Incandescent Lamp Envelope Manufacturing specifies production-based limits for Oil, TSS, and pH. 40 CFR, Part 426, Subpart J – Glass Tubing (Danner) Manufacturing specifies production based limits for TSS and pH. Because Glass Tubing (Danner) Manufacturing and Incandescent Lamp Envelope Manufacturing take place at the Central Falls facility and both process wastestreams combine into the same contact cooling water wastestream outfall 200A,B,C, or D it would be difficult for the two waste streams to be separated. Therefore the limitations for Oil and Grease, TSS, and pH were calculated using the Central Falls facility's historical production rates and the allowable discharge rates established by the most stringent of the two above referenced Federal effluent guidelines. Because the effluent limitations for TSS specified in 40 CFR, Part 426, Subpart L are the most stringent, the monthly average limitations of 0.115lb/1,000lb of furnace pull and maximum daily limitations of 0.23 lb/1000lb of furnace pull have been assigned. Because the effluent limitations for Oil are only specified in 40 CFR, Part 426, Subpart L, the following production based effluent limitations for Oil and Grease have been applied: maximum daily limitations of 0.23lb/1,000lb of furnace pull and the monthly average limitations of 0.115 lb/1,000lb of furnace pull. In addition, the pH limits for outfall 200A,B,C, or D would have been set at 6.0–9.0 S.U. in accordance with 40 CFR, Part 426, Subpart L, however, in this case water quality based limits of 6.5-9.0 S.U. which are more stringent have been applied.

In accordance with RIPDES rule 17.02(b) and guidance available from EPA, tiered limits were established based on a review of historical production data. Since OSRAM SYLVANIA's monthly production has varied significantly over the previous five years DEM has determined that tiered limits would be appropriate. Therefore, the following production tiers have been established 50,000 lb/day (Outfall 200A), 100,000 lb/day (Outfall 200B), 150,000 lb/day (Outfall 200C), and 200,000 lb/day (Outfall 200D). Attachment C includes the calculation that will be used to determine the average daily production.

All contact cooling water associated with glass forming operations (incandescent and glass tubing) is discharged from Outfall 200A,B,C, or D. In accordance with federal effluent guidelines best available technology economically achievable (BAT) limits for TSS, Oil and Grease and pH



were calculated based upon production rates for each of these types of glass and the discharge rates provided in 40CFR 426.122(a) and 40 CFR 426.102.

40 CFR Part 426, Subpart L Federal Effluent Limitation Guidelines		
Parameter	Daily Maximum (lb/1000lb of furnace pull)	Monthly Average (lb/1000lb of furnace pull)
Oil	0.23	0.115
TSS	0.23	0.115
pH*	6.0-9.0	6.0-9.0

\* Note – as previously indicated, water quality based limits (6.5-9.0 s.u.) are more stringent and have been assigned.

Production Based Limit Calculations Based on 40 CFR Part 426, Subpart L					
Tiers (lb of pull)	Outfall #	Oil Daily Max (lb/day)	Oil Monthly Average (lb/day)	TSS – Daily Max (lb/day)	TSS – Monthly Average (lb/day)
50,000	200A	11.5	5.75	11.5	5.75
100,000	200B	23	11.5	23	11.5
150,000	200C	34.5	17.25	34.5	17.25
200,000	200 D	46	23	46	23

#### *Toxicity Testing Requirements*

Bioassay testing, which had been required under the 2006 permit, has been eliminated from the permit due to the facility demonstrating compliance with the bioassay limits in the 2006 permit. Therefore, continued bioassay testing was deemed to be unnecessary.

#### *Outfall 300B – Non Contact Cooling Water*

Because the discharge from outfall 300B is of an intermittent nature, it is nearly impossible for the facility personnel to predict when the discharge will take place therefore, pH and temperature limits have not been assigned for outfall 300B. However, outfall 002A, the final outfall from the facility, which includes flow from outfall 300B, does include pH limits. Temperature limits have not been assigned to outfall 300B due to the fact that the most recent permit reapplication listed the maximum discharge temperature for 2003 as 107.6 °F. Based on the calculations presented in Attachment D of this permit the discharge would not violate the requirements of the Rhode Island Water Quality Regulations Table 1.8.D.(2) Class Specific Criteria – Class B Fresh Waters even assuming a maximum discharge temperature of 212 °F (the boiling point of water). Therefore, there is no reasonable potential to violate the temperature criteria and a permit limit is not necessary.

#### *Outfall 002A – Final Discharge to Blackstone River*



The effluent limitations for pH have been established in accordance with the Rhode Island Water Quality Regulations Table 1.8.D.(2) Class Specific Criteria –Class B Fresh Waters. As indicated above, the most recent permit reapplication indicated that the discharge would not violate the requirements of the Rhode Island Water Quality Regulations Table 1.8.D.(2) Class Specific Criteria – Class B Fresh Waters even assuming a maximum discharge temperature of 212 °F (the boiling point of water). Therefore, there is no reasonable potential for this discharge to cause a violation of the water quality criteria for temperature and a limit is not necessary.

#### *Stormwater*

This permit does not authorize the discharge of stormwater from the facility, however permit coverage is required under a separate permit.

#### *Antibacksliding/Antidegradation*

The Antibacksliding Provision of the Clean Water Act (found at Section 402(o) and repeated at 40 CFR 122.44(l)) prohibits reissuing a permit containing less stringent effluent limits than the comparable limits from the previous permit. Since none of the permit limits, both concentration and mass loadings, are less stringent than in the previous permit, and since the draft permit is being reissued with no change to the outfall location the Antidegradation and Antibacksliding requirements are being met.

#### *Selection of Final Permit Limits*

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41(j), 122.44(l), and 122.48 to yield data representative of the discharge. The Office has determined that all permit limitations are consistent with the Rhode Island Antidegradation Policy.

The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consisting primarily of management requirements common to all permits.

#### **IV. Comment Period, Hearing Requests, and Procedures for Final Decisions**

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to the Rhode Island Department of Environmental Management. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Director finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence Office.

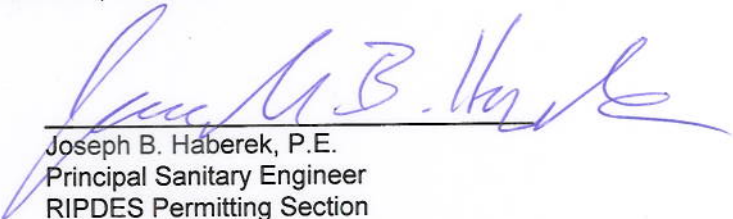
Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of Rule 49 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

V. **DEM Contact**

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

Samuel Kaplan, P.E.  
RIPDES Program  
Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908  
Telephone: (401) 222-4700, ext. 7731

6/4/12  
Date

  
\_\_\_\_\_  
Joseph B. Haberek, P.E.  
Principal Sanitary Engineer  
RIPDES Permitting Section  
Office of Water Resources  
Department of Environmental Management

## ATTACHMENT A

**DESCRIPTION OF DISCHARGE:** Combination of Non-Contact Cooling and Contact Cooling  
**DISCHARGE:** 002A

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED  
 POLLUTANTS:

PARAMETER	MINIMUM	MAXIMUM
pH (SU) <sup>1</sup>	7.62	7.80

<sup>1</sup>Data is from July 2006 to June 2011.

**DESCRIPTION OF DISCHARGE:** Contact Cooling Water  
**DISCHARGE:** 200 A

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED  
 POLLUTANTS:

PARAMETER	AVERAGE	MAXIMUM
CHLORINE (MG/L) <sup>1</sup>	1.4	1.4
FLOW (GAL/DAY) <sup>1</sup>	56,000	106,000
OIL AND GREASE (LB/DAY) <sup>2</sup>	0	0
TSS (LB/DAY) <sup>2</sup>	0	0
TOTAL PRODUCTION (LB/DAY) <sup>2</sup>	6991.5	

<sup>1</sup>Data is from March 2008 to June 2011.

<sup>2</sup>Data is from December 2006 and June 2011.

**DESCRIPTION OF DISCHARGE:** Contact Cooling Water  
**DISCHARGE:** 200 B

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED  
 POLLUTANTS:

PARAMETER	AVERAGE	MAXIMUM
CHLORINE (MG/L) <sup>1</sup>	1.27	1.27
FLOW (GAL/DAY) <sup>2</sup>	695	1957
OIL AND GREASE (LB/DAY) <sup>2</sup>	6.6983	8.1433
TSS (LB/DAY) <sup>2</sup>	7.1283	9.0167
PRODUCTION RATE (LB/DAY)	119,789	

<sup>1</sup>Data is from March 2008 to June 2011; <sup>2</sup>Data is from July 2006-June 2011.



**DESCRIPTION OF DISCHARGE:** Contact Cooling Water  
**DISCHARGE:** 200 C

**AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:**

<b>PARAMETER</b>	<b>AVERAGE</b>	<b>MAXIMUM</b>
CHLORINE (MG/L) <sup>1</sup>	0.0883	0.0883
FLOW (MGD) <sup>1</sup>	0.0527	0.1622
OIL AND GREASE (LB/DAY) <sup>2</sup>	4.6155	5.516
TSS (LB/DAY) <sup>2</sup>	3.8333	4.9195
TOTAL PRODUCTION (LB/DAY) <sup>2</sup>	136,995	

<sup>1</sup>Data is from March 2008-June 2011.

<sup>2</sup>Data is from December 2006-June 2011.

**DESCRIPTION OF DISCHARGE:** Contact Cooling Water  
**DISCHARGE:** 200 D

**AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:**

<b>PARAMETER</b>	<b>AVERAGE</b>	<b>MAXIMUM</b>
CHLORINE (MG/L) <sup>1</sup>	0.0663	0.0663
FLOW (MGAL/DAY) <sup>1</sup>	0.0433	0.0828
OIL AND GREASE <sup>2</sup>	3.871	4.166
TSS (LB/DAY) <sup>2</sup>	3.087	3.819
TOTAL PRODUCTION (LB/DAY) <sup>2</sup>	156,121.9	

<sup>1</sup>Data is from March 2008-June 2011.

<sup>2</sup>Data is from December 2006-June 2011.



**DESCRIPTION OF DISCHARGE:** Contact Cooling Water  
**DISCHARGE:** 200 T

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:

PARAMETER	AVERAGE	MAXIMUM
LC50 STAT 48HR ACUTE D. PULEX <sup>1</sup>	>100%	>100%

<sup>1</sup>Data is from January 2007-June 2007.

**DESCRIPTION OF DISCHARGE:** Non-Contact Cooling Water  
**DISCHARGE:** 300B

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:

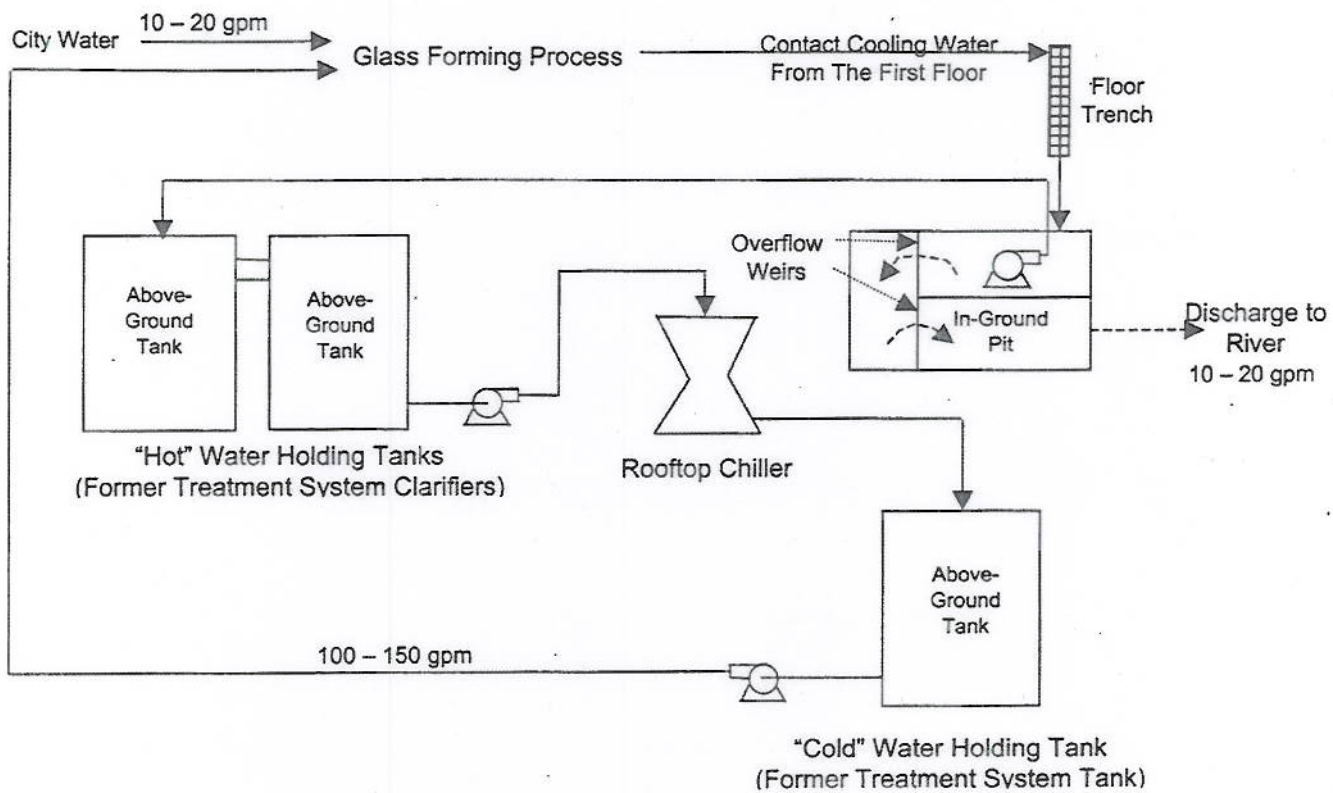
PARAMETER	AVERAGE	MAXIMUM
FLOW (GAL/DAY) <sup>1</sup>	19210	28566

<sup>1</sup>Data is from July 2006-June 2011.

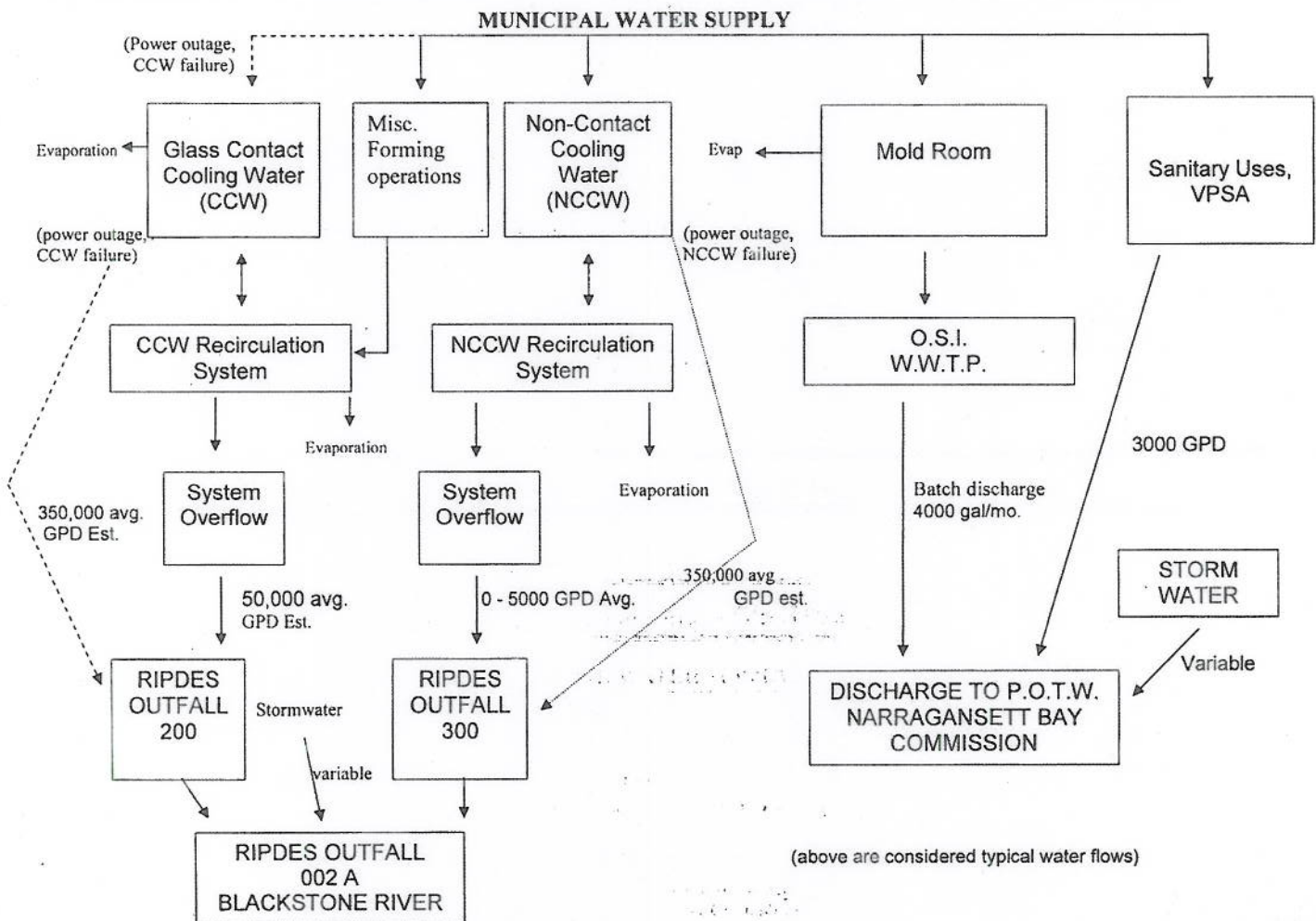
**ATTACHMENT B**

*OSRAM SYLVANIA Products Inc. – Central Falls, RI*

*Cooling Water Recirculation System Process Flow Diagram*



OSRAM SYLVANIA, Inc. - CENTRAL FALLS, R.I.



### ATTACHMENT C

The discharge from Outfall 200A, B, C, or D consists of contact cooling water used to quench molten glass. This discharge is regulated under Federal Effluent Limitation Guidelines. As a requirement of the Federal Effluent Limitation Guidelines, the permittee is required to calculate and report production rates related to the contact cooling water discharges associated with the quenching of molten glass. Below is an example of how the production rates must be calculated when reported on the discharge monitoring report (DMR) forms to comply with permit limits:

#### Assumptions/Industry Definitions

Lb. of Molten Glass Expected From Batch = (lbs. of Raw Material per Batch/(1.073<sup>1</sup>))

Cullet = Pounds of Scrap-Glass Added

Lb. Of Molten Glass Expected from Batch + Cullet = Total Glass Expected to Be Produced

Total Glass Expected to Be Produced – Total Glass Product Produced<sup>2</sup> = Pounds of Streaming<sup>3</sup>

<sup>1</sup> 1.073 is based on a study conducted by Walt Porter (former Engineering Manager) in 1997, showing that in order to get the expected Pull produced by the batch material you have to divide the Lbs. of Batch by 1.073.

<sup>2</sup> MM-16 report provides the quantity of Tubing and Incandescent bulbs produced for the month.

<sup>3</sup> Streaming portion of glass is glass that did not end up in the finished product. The Streaming portion of the glass is cooled, crushed, and may be returned to the furnace as Cullet at some future time.

#### Equation to Calculate Average Pounds of Glass Produced Per Day

$Production = [(lbs. \text{ Of Incandescent Bulbs Produced}) + (lbs. \text{ Of Tubing Produced}) + (lbs. \text{ Of Streaming})] / [\text{Number of Discharge Days}^*]$

\* Discharge Days are defined as days in which a wastewater discharge takes place which is associated with the production of incandescent bulbs or tubing.

The preceding information is a summary of the procedures and calculations presented in a fax from John Marine, Environmental Engineer for OSRAM SYLVANIA Products, Inc. to Brian Lafaille of the DEM RIPDES Program, dated February 16, 2005.



**ATTACHMENT D****Flow:**

Receiving Water – Blackstone River 7Q10 @ Woonsocket = 75.3 MGD  
 Outfall 002A Monthly Average Limit = 0.15 MGD

**Temperature:**

Outfall 002A – Maximum Possible Temperature = 212 °F  
 Instream Temperature - Summer = 72 °F  
 Instream Temperature - Winter = 36 °F

**Water Quality Limits:**

Net Instream Temperature Change - Winter = 4.0 °F  
 Net Instream Temperature Change - Summer = 1.6 °F

**Mass Balance:**

$$Q_{\max}(T_{\text{limit}}) + Q_{7Q10}(T_{\text{instream}}) = (Q_{\max} + Q_{7Q10})(T_{\text{instream}} + \Delta T)$$

Where:  $Q_{\max}$  = Daily Maximum Limit @ Outfall 001A  
 $Q_{7Q10}$  = Low Flow for Blackstone River  
 $T_{\text{limit}}$  = Proposed Permit Limit for Temperature  
 $T_{\text{instream}}$  = Instream Ambient Temperature  
 $\Delta T$  = Net Change in Temperature

Case 1 - Summer Months

$$(0.15 \text{ MGD})(212^{\circ}\text{F}) + (75.3 \text{ MGD})(72^{\circ}\text{F}) = (0.15 \text{ MGD} + 75.3 \text{ MGD})(72^{\circ}\text{F} + \Delta T)$$

$\Delta T = 0.28^{\circ}\text{F} \leq 1.6^{\circ}\text{F}$  - Proposed limit increase meets Water Quality Regulations.

Case 2 - Winter Months

$$(0.15 \text{ MGD})(212^{\circ}\text{F}) + (75.3 \text{ MGD})(36^{\circ}\text{F}) = (0.15 \text{ MGD} + 75.3 \text{ MGD})(36^{\circ}\text{F} + \Delta T)$$

$\Delta T = 0.35^{\circ}\text{F} \leq 4.0^{\circ}\text{F}$  - Proposed limit increase meets Water Quality Regulations.

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- (c) Need to Halt or Reduce Not a Defense
- (d) Duty to Mitigate
- (e) Proper Operation and Maintenance
- (f) Permit Actions
- (g) Property Rights
- (h) Duty to Provide Information
- (i) Inspection and Entry
- (j) Monitoring and Records
- (k) Signatory Requirements
- (l) Reporting Requirements
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- (n) Upset
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- (p) Removed Substances
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- (r) Availability of Reports
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### DEFINITIONS

## GENERAL REQUIREMENTS

(a) Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Chapter 46-12 of the Rhode Island General Laws and the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

- (1) The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- (2) The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307 or 308 of the Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment of not more than 1 year, or both.
- (3) Chapter 46-12 of the Rhode Island General Laws provides that any person who violates a permit condition is subject to a civil penalty of not more than \$5,000 per day of such violation. Any person who willfully or negligently violates a permit condition is subject to a criminal penalty of not more than \$10,000 per day of such violation and imprisonment for not more than 30 days, or both. Any person who knowingly makes any false statement in connection with the permit is subject to a criminal penalty of not more than \$5,000 for each instance of violation or by imprisonment for not more than 30 days, or both.

(b) Duty to Reapply

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. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

(c) Need to Halt or Reduce 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.

(d) Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.



(e) 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, and, where applicable, compliance with DEM "Rules and Regulations Pertaining to the Operation and Maintenance of Wastewater Treatment Facilities" and "Rules and Regulations Pertaining to the Disposal and Utilization of Wastewater Treatment Facility Sludge." This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

(f) Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) Violation of any terms or conditions of this permit; (2) Obtaining this permit by misrepresentation or failure to disclose all relevant facts; or (3) A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge. 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.

(g) Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

(h) Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director 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 Director, upon request, copies of records required to be kept by this permit.

(i) Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- (1) 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 this permit;
- (2) Have access to and copy, at reasonable times any records that must be kept under the conditions of this permit;
- (3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

- (4) Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA or Rhode Island law.

(j) Monitoring and Records

- (1) Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the discharge over the sampling and reporting period.
- (2) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings from continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- (3) 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.
- (4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 and applicable Rhode Island regulations, unless other test procedures have been specified in this permit.
- (5) The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall upon conviction, be punished by a fine of not more than \$10,000 per violation or by imprisonment for not more than 6 months per violation or by both. Chapter 46-12 of the Rhode Island General Laws also provides that such acts are subject to a fine of not more than \$5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.
- (6) Monitoring results must be reported on a Discharge Monitoring Report (DMR).
- (7) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136, applicable State regulations, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(k) Signatory Requirement

All applications, reports, or information submitted to the Director shall be signed and certified in accordance with Rule 12 of the Rhode Island Pollutant Discharge Elimination System (RIPDES) Regulations. Rhode Island General Laws, Chapter 46-12 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 noncompliance shall, upon conviction, be punished by a fine of not more than \$5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(l) Reporting Requirements

- (1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.
- (2) Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with the permit requirements.
- (3) Transfers. This permit is not transferable to any person except after written notice to the Director. The Director 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 State and Federal law.
- (4) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (5) Twenty-four hour reporting. The permittee shall immediately report any noncompliance which may endanger health or the environment by calling DEM at (401) 222-3961, (401) 222-6519 or (401) 222-2284 at night.

A written submission shall also be provided within five (5) 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.

The following information must be reported immediately:

- (i) Any unanticipated bypass which causes a violation of any effluent limitation in the permit; or
- (ii) Any upset which causes a violation of any effluent limitation in the permit; or
- (iii) Any violation of a maximum daily discharge limitation for any of the pollutants specifically listed by the Director in the permit.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.



- (6) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1), (2), and (5), of this section, at the time monitoring reports are submitted. The reports shall contain the information required in paragraph (1)(5) of the section.
- (7) 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 Director, they shall promptly submit such facts or information.

(m) Bypass

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

- (1) 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) and (3) of this section.
- (2) 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 ten (10) days before the date of the bypass.
  - (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Rule 14.18 of the RIPDES Regulations.
- (3) Prohibition of bypass.
  - (i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
    - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, where "severe property damage" means 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;
    - (B) 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 backup 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
    - (C) The permittee submitted notices as required under paragraph (2) of this section.

- (ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (3)(i) of this section.

(n) Upset

"Upset" means 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.

- (1) 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 (2) 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.
- (2) 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:
  - (a) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - (b) The permitted facility was at the time being properly operated;
  - (c) The permittee submitted notice of the upset as required in Rule 14.18 of the RIPDES Regulations; and
  - (d) The permittee complied with any remedial measures required under Rule 14.05 of the RIPDES Regulations.
- (3) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

(o) Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. Discharges which cause a violation of water quality standards are prohibited. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to commencement of such discharges, or if such changes will not violate the effluent limitations specified in this permit, by notice, in writing, to the Director of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

(p) Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner consistent with applicable Federal and State laws and regulations including, but not limited to the CWA and the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq., Rhode Island General Laws, Chapters 46-12, 23-19.1 and regulations promulgated thereunder.

(q) Power Failures

In order to maintain compliance with the effluent limitation and prohibitions of this permit, the permittee shall either:

In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or if such alternative power source is not in existence, and no date for its implementation appears in Part I,

Halt reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

(r) Availability of Reports

Except for data determined to be confidential under paragraph (w) below, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the DEM, 291 Promenade Street, Providence, Rhode Island. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and under Section 46-12-14 of the Rhode Island General Laws.

(s) State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

(t) Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.



(u) Severability

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

(v) Reopener Clause

The Director reserves the right to make appropriate revisions to this permit in order to incorporate any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA or State law. In accordance with Rules 15 and 23 of the RIPDES Regulations, if any effluent standard or prohibition, or water quality standard is promulgated under the CWA or under State law which is more stringent than any limitation on the pollutant in the permit, or controls a pollutant not limited in the permit, then the Director may promptly reopen the permit and modify or revoke and reissue the permit to conform to the applicable standard.

(w) Confidentiality of Information

(1) Any information submitted to DEM pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, DEM may make the information available to the public without further notice.

(2) Claims of confidentiality for the following information will be denied:

- (i) The name and address of any permit applicant or permittee;
- (ii) Permit applications, permits and any attachments thereto; and
- (iii) NPDES effluent data.

(x) Best Management Practices

The permittee shall adopt Best Management Practices (BMP) to control or abate the discharge of toxic pollutants and hazardous substances associated with or ancillary to the industrial manufacturing or treatment process and the Director may request the submission of a BMP plan where the Director determines that a permittee's practices may contribute significant amounts of such pollutants to waters of the State.

(y) Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, the permittee or any interested person may submit a request to the Director for an adjudicatory hearing to reconsider or contest that decision. The request for a hearing must conform to the requirements of Rule 49 of the RIPDES Regulations.

**DEFINITIONS**

1. For purposes of this permit, those definitions contained in the RIPDES Regulations and the Rhode Island Pretreatment Regulations shall apply.
2. The following abbreviations, when used, are defined below.

cu. M/day or M <sup>3</sup> /day	cubic meters per day
mg/l	milligrams per liter
ug/l	micrograms per liter
lbs/day	pounds per day
kg/day	kilograms per day
Temp. °C	temperature in degrees Centigrade
Temp. °F	temperature in degrees Fahrenheit
Turb.	turbidity measured by the Nephelometric Method (NTU)
TNFR or TSS	total nonfilterable residue or total suspended solids
DO	dissolved oxygen
BOD	five-day biochemical oxygen demand unless otherwise specified
TKN	total Kjeldahl nitrogen as nitrogen
Total N	total nitrogen
NH <sub>3</sub> -N	ammonia nitrogen as nitrogen
Total P	total phosphorus
COD	chemical oxygen demand
TOC	total organic carbon
Surfactant	surface-active agent
pH	a measure of the hydrogen ion concentration
PCB	polychlorinated biphenyl
CFS	cubic feet per second
MGD	million gallons per day
Oil & Grease	Freon extractable material
Total Coliform	total coliform bacteria
Fecal Coliform	total fecal coliform bacteria
ml/l	milliliter(s) per liter
NO <sub>3</sub> -N	nitrate nitrogen as nitrogen
NO <sub>2</sub> -N	nitrite nitrogen as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	combined nitrate and nitrite nitrogen as nitrogen
Cl <sub>2</sub>	total residual chlorine



**RHODE ISLAND**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

**CERTIFIED MAIL**

August 1, 2012

Mr. John Marine  
EHS Representative  
Osram Sylvania, Inc.  
1193 Broad St.  
Central Falls, RI 02863

**RE: Final RIPDES permit, Osram Sylvania, Inc.**  
**RIPDES Application No. RI0001180**

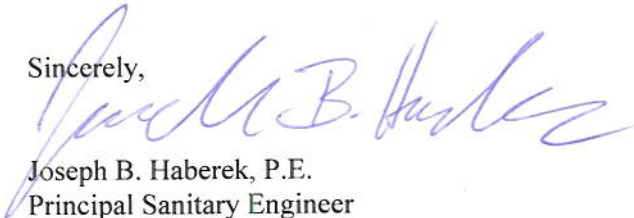
Dear Mr. Marine:

Enclosed is your final Rhode Island Pollutant Discharge Elimination System (RIPDES) Permit issued pursuant to the referenced application. State regulations, promulgated under Chapter 46-12 of the Rhode Island General Laws of 1956, as amended, require this permit to become effective on the date specified in the permit.

Also enclosed is a copy of the Department's response to the comments received on the draft permit and information relative to hearing requests and stays of RIPDES Permits.

Should you have any questions concerning this permit, feel free to contact Samuel Kaplan of the State Permits Staff at (401) 222-4700, extension 7046.

Sincerely,



Joseph B. Haberek, P.E.  
Principal Sanitary Engineer

JBH:sk  
Enclosures

cc: Michael DiFillippo, Osram  
ecc: David Turin, EPA  
Eric Beck, DEM  
Traci Pena, DEM  
Annie McFarland, DEM

Office of Water Resources/Telephone: 401.222.4700/Fax: 401.222.6177





Mr. John Marine  
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August 1, 2012

**Response to Public Comments  
Osram Sylvania, Inc.  
RIPDES Permit No. RI0001180**

From June 12, 2012 to July 18, 2012, the Rhode Island Department of Environmental Management (DEM) solicited public comment on a draft Rhode Island Pollutant Discharge Elimination System (RIPDES) permit for Osram Sylvania, Inc. The following response addresses the written comments that were submitted to the DEM by Osram Sylvania, Inc., on June 26, 2012.

**RESPONSE TO COMMENTS**

**1. Limit for Chem-aqua 42171**

Osram Sylvania, Inc. proposed increasing the limit for Chem-aqua 42171 from 26.6 PPM (26.6 mg/L) to 28.2 PPM (28.2 mg/L) based on toxicity information from the manufacturer attached to the June 26, 2012 correspondence. DEM validated Osram Sylvania, Inc.'s calculation and revised upwards the narrative limit for Chem-aqua 42171 found in Part I.A.13. on pg. 10 of the final permit from 26.6 PPM to 28.2 PPM.

Regarding Osram Sylvania, Inc.'s statement that Chem-aqua will likely react with organic material which may be present in the effluent, DEM is maintaining the limit for Chem-aqua 42171 at 28.2 PPM to be conservative.

**2. Correction to temperature calculation in Appendix D**

Osram Sylvania, Inc., in the June 26, 2012 correspondence, called DEM's attention to a typographical error in a temperature calculation presented in Appendix D. DEM has corrected the error in the final permit.

**HEARING REQUESTS**

If you wish to contest any of the provisions of this permit, you may request a formal hearing within thirty (30) days of receipt of this letter. The request should be submitted to the Administrative Adjudication Division at the following address:

Bonnie Stewart, Clerk  
Department of Environmental Management  
Office of Administrative Adjudication  
One Capitol Hill  
Second Floor  
Providence, RI 02903

Any request for a formal hearing must conform to the requirements of Rule 49 of the State Regulations.

Mr. John Marine  
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#### STAYS OF RIPDES PERMITS

Should the Department receive and grant a request for a formal hearing, the contested conditions of the permit will not automatically be stayed. However, the permittee, in accordance with Rule 50, may request a temporary stay for the duration of adjudicatory hearing proceedings. Requests for stays of permit conditions should be submitted to the Office of Water Resources at the following address:

Angelo S. Liberty, P.E.  
Chief of Surface Water Protection  
Office of Water Resources  
235 Promenade Street  
Providence, Rhode Island 02908

All uncontested conditions of the permit will be effective and enforceable in accordance with the provisions of Rule 49.