*Prepared For*

**Florida Power and Light Company**

700 Universe Boulevard
Juno Beach, Florida 33408

# INDUSTRIAL WASTEWATER PERMIT RENEWAL APPLICATION
# St. Lucie Nuclear Power Plant
# Permit No. FL0002208

*Submitted by*

Geosyntec consultants

engineers | scientists | innovators

March 2016

FORM 1

# WASTEWATER FACILITY OR ACTIVITY PERMIT
# APPLICATION FORM 1
# GENERAL INFORMATION

**I - IDENTIFICATION NUMBER:**

Facility ID FL0002208

**II - CHARACTERISTICS:**

INSTRUCTIONS: Complete the questions below to determine whether you need to submit any permit application forms to the Department of Environmental Protection. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the blank in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements. See Section B of the instructions. See also, Section C of the instructions for definitions of the terms used here.

| SPECIFIC QUESTIONS | YES | NO | FORM ATTACHED |
|---|---|---|---|
| A. Is this facility a domestic wastewater facility which results in a discharge to surface or ground waters? | | X | |
| B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters? | | X | |
| C. Does or will this facility (other than those describe in A. or B.) discharge process wastewater, or non-process wastewater regulated by effluent guidelines or new source performance standards, to surface waters? | X | | Form 2CS |
| D. Does or will this facility (other than those described in A. or B.) discharge process wastewater to ground waters? | | X | |
| E. Does or will this facility discharge non-process wastewater, not regulated by effluent guidelines or new source performance standards, to surface waters? | | X | |
| F. Does or will this facility discharge non-process wastewater to ground waters? | | X | |
| G. Does or will this facility discharge stormwater associated with industrial activity to surface waters? | X | | Form 2F |
| H. Is this facility a non-discharging/closed loop recycle system? | | X | |
| I. Is this facility a public water system whose primary purpose is the production of potable water for public consumption and which discharges demineralization concentrate to surface water or groundwater? | | X | |

**III - NAME OF FACILITY**: (80 characters and spaces)

FPL St. Lucie Power Plant

Facility ID FL0002208

**IV - FACILITY CONTACT:** (A. 30 characters and spaces)

| A. Name and Title (Last, first, & title) | B. Phone (area code & no.) |
|---|---|
| Chrissi-lee Williams, Secondary Chemistry Analyst | (772) 467-7228 |

**V - FACILITY MAILING ADDRESS:** (A. 30 characters and spaces; B. 25 characters and spaces)

| A. Street or P.O. Box: 6501 S. Ocean Drive | | |
|---|---|---|
| B. City or Town: Jensen Beach | State: FL | Zip Code: 34957 |

**VI - FACILITY LOCATION:** (A. 30 characters and spaces; B. 24 characters and spaces; C. 3 spaces (if known); D. 25 characters and spaces; E. 2 spaces; F. 9 spaces)

| A. Street, Route or Other Specific Identifier: 6501 S. Ocean Drive (South State Road A1A) | | |
|---|---|---|
| B. County Name: St. Lucie | C. County Code (if known): 111 | |
| D. City or Town: Jensen Beach | E. State: FL | F. Zip Code: 34957 |

**VII - SIC CODES:** (4-digit, in order of priority)

| 1. Code #: 4911 | (Specify) Electric Services | 2. Code #: | (Specify) |
|---|---|---|---|
| 3. Code #: | (Specify) | 4. Code #: | (Specify) |

**VIII - OPERATOR INFORMATION:** (A. 40 characters and spaces; B. 1 character; C. 1 character (if other, specify); D. 12 characters; E. 30 characters and spaces; F. 25 characters and spaces; G. 2 characters; H. 9 characters)

| A. Name: Florida Power & Light Company | | B. Is the name in VIII A. the owner? ☒Yes ☐No | |
|---|---|---|---|
| C. Status of Operator: F = Federal; S = State; P = Private; O = Other; M = Public (other than F or S) | (code) P | (specify) Private | D. Phone No.: 772-467-7101 |
| E. Street or P. O. Box: 700 Universe Blvd. | | | |
| F. City or Town: Juno Beach | | G. State: FL | H. Zip Code: 33408-2657 |

**IX - INDIAN LAND:**

| A. Is the facility located on Indian lands? | ☐ Yes | ☒ No |
|---|---|---|

Facility ID FL0002208

**X EXISTING ENVIRONMENTAL PERMITS:**

| A. NPDES Permit No. | B. UIC Permit No. | C. Other (specify) | D. Other (specify) |
|---|---|---|---|
| FL0002208 | | Air - Synthetic Minor | |

**XI MAP:** Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements. Please see attached Figures 1 and 2, Site Location Map and Site Plan and Outfall Location Map.

**XII NATURE OF BUSINESS** (provide a brief description)

NAICS Code 221113 - Nuclear Electric Power Generation

**XIII CERTIFICATION** (see instructions)

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 persons immediately responsible for obtaining the information contained in the application, 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.

Christopher Costanzo
A. Name (type or print)

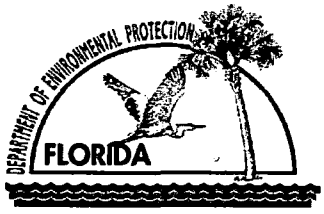
Christopher R Costanzo
B. Signature

Vice President, St. Lucie Power Plant
Official Title (type or print)

3/29/16
C. Date Signed

FORM 2CS

FORM
# 2CS




## WASTEWATER APPLICATION FOR PERMIT TO DISCHARGE PROCESS WASTEWATER FROM NEW OR EXISTING INDUSTRIAL WASTEWATER FACILITIES TO SURFACE WATERS

Facility I.D. Number: FL0002208

**Please print or type information in the appropriate areas.**

**I OUTFALL LOCATION** For each outfall, list the X,Y coordinates and the name of the receiving water.
**(latitude/longitude to the nearest 15 seconds)**

| A. Outfall No. (List) | B. Latitude | | | C. Longitude | | | D. Name of Receiving Water |
|---|---|---|---|---|---|---|---|
| | Deg. | Min. | Sec. | Deg. | Min. | Sec. | |
| D-001 | 27 | 21 | 05 | 80 | 14 | 26 | Atlantic Ocean |
| I-003 | 27 | 20 | 57 | 80 | 14 | 48 | Plant Discharge Canal |
| I-005 | 27 | 20 | 59 | 80 | 14 | 43 | Plant Discharge Canal |
| I-007 | 27 | 20 | 52 | 80 | 14 | 41 | Plant Discharge Canal |
| I-008 | 27 | 20 | 36 | 80 | 14 | 28 | Plant Intake Canal |
| | | | | | | | |
| | | | | | | | |

**II OUTFALL DESIGN**

| A. Outfall No. (List) | B. Design Configuration and Construction Materials | C. Distance from shore | D. Diameter | E. Elevation of Discharge Invert (MSL) | F. Receiving Water Depth at POD (MSL) |
|---|---|---|---|---|---|
| D-001 | Y-Port Diffuser Concrete Pipe | 1,500 ft | 12 ft | -36 ft | -42 +/- |
| D-001 | Multiport Diffuser Concrete Pipes | 1,959-3,375 ft | 16 ft | -27 to -38 ft | -33 to -44 ft +/- |
| I-003 | Stainless Steel Pipe | <75 ft (canal) | 3.5 in | N/A | -12 ft +/- |
| I-005 | Low Volume Waste - Steam Generator Blowdown | <75 ft (canal) | 4 in | N/A | -12 ft +/- |
| I-007 | Two concrete sluiceways Units 1 & 2 | On canal shore | 3 ft | + 9 ft | -30 ft +/- |
| I-008 | Southeast Evaporation Basin | On canal shore | 18 in | +1 ft | -30 ft +/- |

Please note that D-001has more than one pipe discharging off shore as indicated above.

Facility I.D. Number: FL0002208

**III RECEIVING WATER INFORMATION**

For each surface water that will receive effluent, supply the following information:

| A. Name of Receiving Water | B. Check One | | C. Classification (See Ch. 62-302, F.A.C.) | D. Type of Receiving Water (canal, river, lake, etc.) |
|---|---|---|---|---|
| | Fresh | Salt or Brackish | | |
| Atlantic Ocean | ☐ | ☒ | III - Marine | Ocean |
| | ☐ | ☐ | | |
| | ☐ | ☐ | | |
| | ☐ | ☐ | | |
| | ☐ | ☐ | | |
| | ☐ | ☐ | | |

E. Minimum 7-day 10-year low flow of the receiving water at each outfall (if appropriate). NA

F. Identify and describe the flow of effluent from each outfall to a major body of water. A suitably marked map or aerial photograph may be used. Refer to Figure 2 Site Plan and Outfall Location Map included in the Attachments.

G. Do you request a mixing zone under Rule 62-4.244, F.A.C.? If yes, for what parameters or pollutants?

Yes, Mixing Zones are requested for both Total Residual Oxidants and for Thermal discharges.

**IV FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES**

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

Refer to Figure 3 Industrial Wastewater Process Flow Diagram included in the Attachments.

B. For each outfall, provide a description of:

1. All operations contributing wastewater to the effluent; including process wastewater, sanitary wastewater, cooling water, and stormwater runoff;

2. The average flow contributed by each operation; and

3. The treatment received by the wastewater.

Refer to Supplemental Information A included in the Attachments.

Use the space on the next page. Continue on additional sheets, if necessary.

IV B. Contd.

Facility I.D. Number: FL0002208

| (1) Outfall No. (List) | (2) Operation(s) Contributing Flow | | (3) Treatment | | |
|---|---|---|---|---|---|
| | (a) Operation (list) | (b) Avg. Flow & Units | (a) Description | (b) List Code from Table 2CS-1 | |
| D-001 | All operations listed below | 1,407 MGD | Point of Discharge to Atlantic Ocean | 4-B | |
| | Unit 1 and Unit 2 Once-Through Cooling | | Screening | 1-T | |
| | | | Chlorination (Biofouling control) | XX | |
| | | | Discharge to Surface Water | 4-A | |
| I-003 | Low Volume Waste | 0.013 MGD | Filtration (Fiber Cartridge) | XX | |
| | Liquid Radiation Waste | | Ion Exchange | 2-J | |
| | | | Discharge to Surface Water | 4-A | |
| | | | | | |
| I-005 | Low Volume Waste | 0.145 MGD | Reverse Osmosis | 1-S | |
| | Steam Generator Blowdown | | Neutralization | 2-K | |
| | | | Discharge to Surface Water | 4-A | |
| | | | | | |
| I-007 | Intake Screen Wash | 0.11 MGD | Screening | 1-T | |
| | | | Discharge to Surface Water | 4-A | |
| | | | | | |
| | | | | | |
| I-008 | Southeast Evaporation Basin | 0.70 MGD | Sedimentation (Settling) | 1-U | |
| | | | Evaporation | 1-F | |
| | | | Percolation | 1-Y | |
| | | | Discharge to Surface Water | 4-A | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

IV Contd. Facility I.D. Number: FL0002208

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?
■ Yes (complete the following table) ☐ No (go to D. below)

| (1) Outfall No. (List) | (2)Operation(s) Contributing Flow(List) | (3) Frequency | | (4) Flow | | | | |
|---|---|---|---|---|---|---|---|---|
| | | (a) Days per Week (specify avg.) | (b) Months per Yr. (specify avg.) | (a) Flow Rate (in mgd) | | (b) Total Volume (specify with units) | | (c) Duration (in days) |
| | | | | Long Term Avg. | Max. Daily | Long Term Avg. | Max. Daily | |
| I-003 | Low Volume - Liquid Radiation Waste | 1 | 12 | 0.013 | 0.064 | 0.013 MG | 0.064 MG | < 1 |
| I-005 | Low Vol. - Steam Generator Blowdown | 0.25 | 12 | 0.145 | 0.580 | 0.145 MG | 0.580 MG | < 1 |
| I-007 | Intake Screen Wash Water | 7 | 12 | 0.11 | 0.22 | 0.019 MG | 0.22 MG | 0.17 |
| I-008 | SE Evaporation/Percolation Basin | <4 | 12 | 0.70 | 13.92 | 2.8 MG | 13.92 MG | 4 (as req'd) |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

D. Describe practices to be followed to ensure adequate wastewater treatment during emergencies such as power loss and equipment failures causing shutdown of pollution abatement equipment of the proposed/permitted facilities.
The plant has a recently constructed Hurricane emergency equipment building which houses large generators that will be used when needed.

E. List the method(s) and location(s) of flow measurement.
Pump design flow rates and run times are used to calculate flow measurement for D-001 and I-007. I-003 is calculated from the tank volume batch discharges. I-005 has a flow indicating control valve. I-008 has a flow meter.

## V PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

■ Yes (complete Item V-B) ☐ No (go to Section VI)

B. Are the limitations in the applicable guideline expressed in terms of production (or other measure of operation)?

☐ Yes (complete Item V-C) ■ No (go to Section VI)

C. If you answered "yes" to Item V-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

| 1. AVERAGE DAILY PRODUCTION | | | 2. Affected Outfalls |
|---|---|---|---|
| a. Quantity per Day | b. Units of Measure | c. Operation, Product, Materials, Etc. (specify) | (list outfall nos.) |
| | | | |

Facility I.D. Number: FL0002208

## VI 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 which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement order, enforcement compliance schedule letter, stipulations, court orders, and grant or loan conditions.

☐ Yes (complete the following table) ■ No (go to Item VI-B)

| 1. Identification of Condition, Agreement, Etc. | 2. Affected Outfalls | | 3. Brief Description of Project | 4. Final Compliance Date | |
|---|---|---|---|---|---|
| | a. No. | b. Source of Discharge | | 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 underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ Mark "X" if description of additional control programs is attached.

## VII INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding--Complete one set of tables for each outfall -- Annotate the outfall number in the space provided. NOTE: Tables VII-A, VII-B, and VII-C are included on separate sheets number VII-1 through VII-9.

D. Use the space below to list any of the pollutants listed in Table 2CS-3 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 |
|---|---|---|---|
| | | | |

Facility I.D. Number: FL0002208

## VIII POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item VII-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or by-product?

☐ YES (list all such pollutants below) ■ NO (go to IX)

## IX 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 a receiving water in relation to your discharge within the last 3 years?

■ YES (identify the test(s) and describe their purposes below) ☐ NO (go to Section X)

In accordance with the permit requirements for Outfall D-001, Chronic Whole Effluent Toxicity, 7-Day IC25 Mysidopsis bahia and Menidia beryllina tests have been performed semi-annually by Hydrosphere Research (Alachua, FL) within the last three years. The results indicate that the samples provided did not exhibit chronic toxicity to either species. A copy of the most recent test report is included in the Attachments.

## X CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

■ YES (list the name, address, telephone number, and certification number of, and pollutants analyzed by each such laboratory or firm below) ☐ NO (go to Section XI)

| A. Name | B. Address | C. Telephone (area code & no.) | D. Pollutants Analyzed (list) |
|---|---|---|---|
| FPL Central Lab #E56078 | 6001 A Village Boulevard<br>West Palm Beach, FL 33407 | 561-640-2010 | Miscellaneous Wet Chemistry |
| Florida Spectrum Environmental | 1460 W. McNab Road<br>Fort Lauderdale, FL 33309 | 954-978-6400 | Miscellaneous Wet Chemistry; Fecal Coliforms |
| Jupiter Environmental Labs | 150 S Old Dixie Highway<br>Jupiter, FL 33458 | 561-575-0030 | Mercury |

Facility I.D. Number: FL0002208

## XI CONNECTION TO REGIONAL POTW

A. Indicate the relationship between this project and area regional planning for wastewater treatment. List steps to be taken for this industrial wastewater facility to become part of an area-wide wastewater treatment system.

The quantity and nature of the industrial wastewater discharges from the plant are not appropriate for discharge to the local POTW.

## XII-A CERTIFICATIONS FOR NEW OR MODIFIED FACILITIES

This is to certify the engineering features of this pollution control project have been designed by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

| | |
|---|---|
| Signature | Company Name |
| Name (please type) | Address |
| (Affix Seal) | Florida Registration No.: |
| | Telephone No:: |
| | Date |

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

| | |
|---|---|
| Name & Official Title (Please type or print) | Signature |
| Telephone No. (area code & No.) | Date Signed |

## XII-B CERTIFICATIONS FOR PERMIT RENEWALS

This is to certify the engineering features of this pollution control project have been examined by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department.

Melissa Fagan

Signature

Melissa Fagan, P.E.

Name (please type)

(Affix Seal)

Geosyntec Consultants, Inc.

Company Name

Address

1200 Riverplace Blvd, Suite 710, Jacksonville, FL 32207

Florida Registration No.: 73087

Telephone No:: 904-858-1818

Date 3/8/16

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

Christopher Costanzo, Vice President, St. Lucie Power Plant

Name & Official Title (Please type or print)

Christopher R Costanzo

Signature

(772) 467-7100

Telephone No. (area code & No.)

3/29/16

Date Signed

Facility ID. Number: FL0002208 Outfall No. D-001 POD

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

## VII. 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 | | 4. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. Max. Daily Value | | b. Max. 30-day Value | | c. Annual Avg. Value | | d. No. of Analyses | a. Concentration | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a Carbonaceous Biochemical Oxygen Demand (CBOD) | <2.00 | | | | | | 1 | mg/L | | <2.00 | | 1 |
| b. Chemical Oxygen Demand (COD) | 380 | | | | | | 1 | mg/L | | 270 | | 1 |
| c. Total Organic Carbon (TOC) | 0.637 | | | | | | 1 | mg/L | | <0.504 | | 1 |
| d. Total Suspended Solids (TSS) | 15 | | | | | | 1 | mg/L | | 47 | | 1 |
| e. Total Nitrogen (as N) | 1.7 | | 1.7 | | 0.454 | | 32 | mg/L | | 0.282 | | 17 |
| f. Total Phosphorus (as P) | 0.7 | | 0.7 | | 0.06 | | 32 | mg/L | | 0.055 | | 17 |
| g. Ammonia (as N) | 0.31 | | 0.31 | | 0.099 | | 32 | mg/L | | 0.078 | | 17 |
| h. Flow - actual or projected | Value 1,487 | | Value 1,487 | | Value 1,400 | | 60 | MGD | | Value | | |
| i. Flow - design | Value | | Value | | Value | | | | | Value | | |
| j. Specific Conductivity | Value 52,000 | | Value | | Value | | 1 | umhos/cm | | Value 54,000 | | 1 |
| k. Temperature (winter) | Value 104.4 | | Value 104.4 | | Value 100.6 | | 1 | °C | | Value | | |
| l. Temperature (summer) | Value 112.4 | | Value 112.4 | | Value 109.7 | | | °C | | Value | | |
| m. . pH | Min. 7.22 | Max 7.22 | Min. | Max. | | | 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 which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additonal details and requirements.

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc... | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a. Bromide (24949-67-9) | ☒ | ☐ | 68 | | | | | | 1 | mg/L | | 72 | | 1 |
| b. Chlorine, Total Residual | ☒ | ☐ | 0.23 | | 0.0124 | | 0.029 | | 55 | mg/L | | 0.24 | | 1 |
| c. Color | ☒ | ☐ | 15/8.03 | | | | | | 1 | Pt-Co | | 5/8.12 | | 1 |
| d. Fecal Coliform | ☐ | ☒ | | | | | | | | CFU/100 ml | | 1 | | 1 |
| e. Fluoride (16984-48-8) | ☒ | ☐ | 0.62 | | | | | | 1 | mg/L | | 0.64 | | 1 |
| f. Nitrate-Nitrite (as N) | ☒ | ☐ | 0.682 | | 0.682 | | 0.129 | | 32 | mg/L | | 0.055 | | 17 |

: Item VII-B Contd.

Facility ID. Number FL0002208 Outfall No. D-001 POD

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a .believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| g. Nitrogen, Total Organic (as N) | ☒ | ☐ | 1.7 | | 1.7 | | 0.454 | | 32 | mg/L | | 0.282 | | 17 |
| h. Oil and grease | ☐ | ☒ | <1.0 | | | | | | 1 | mg/L | | <1.0 | | 1 |
| i. Phosphorus, Total (as P) (7723-14-0) | ☒ | ☐ | 0.7 | | 0.7 | | 0.06 | | 32 | mg/L | | 0.055 | | 17 |
| j. Radioactivity | | | | | | | | | | | | | | |
| (1) Alpha, Total | ☒ | ☐ | <252 | | | | | | 1 | pCi/L | | <342 | | 1 |
| (2) Beta, Total | ☒ | ☐ | <293 | | | | | | 1 | pCi/L | | 329 +/- 26.1 | | 1 |
| (3) Radium, Total | ☐ | ☒ | | | | | | | | | | | | |
| (4) Radium 226, Total | ☐ | ☒ | | | | | | | | | | | | |
| k. Sulfate (as $SO_4$) (14808-79-8) | ☒ | ☐ | 3,000 | | | | | | 1 | mg/L | | 3,200 | | 1 |
| l. Sulfide (as S) | ☐ | ☒ | | | | | | | | | | | | |
| m. Sulfite (as $SO_3$) (14265-45-3) | ☐ | ☒ | | | | | | | | | | | | |
| n. Surfactants | ☐ | ☒ | <0.0603 | | | | | | 1 | mg/l | | <0.181 | | 1 |
| o. Aluminum, Total (7429-90-5) | ☐ | ☒ | | | | | | | | | | | | |
| p. Barium, Total (7440-39-3) | ☐ | ☒ | | | | | | | | | | | | |
| q. Boron, Total (7440-42-8) | ☒ | ☐ | 3,420 | | | | | | 1 | µg/L | | 3,550 | | 1 |
| r. Cobalt, Total (7440-48-4) | ☐ | ☒ | | | | | | | | | | | | |
| s. Iron, Total (7439-89-6) | ☒ | ☐ | 440 | | | | | | 1 | µg/L | | <100 | | 1 |
| t. Maagnesium, Total (7439-95-4) | ☒ | ☐ | 1,500 | | | | | | 1 | mg/L | | 1,400 | | 1 |
| u. Molybdenum, Total (7439-98-7) | ☐ | ☒ | <12.9 | | | | | | 1 | µg/L | | <13 | | 1 |
| v. Manganese, Total (7439-96-5) | ☐ | ☒ | | | | | | | | | | | | |
| w. Tin, Total (7440-31-5) | ☐ | ☒ | <7.97 | | | | | | 1 | µg/L | | <8 | | 1 |
| x. Titanium, Total (7440-32-6) | ☒ | ☐ | 4.80 | | | | | | 1 | µg/L | | 1.8 | | 1 |

Facility ID. Number: FL0002208 Outfall No. D-001 POD

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2a for all GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2b for each pollutant you know or have reason to believe is present. Mark "X" in column 2c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one anlysis for that pollutnat if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4,dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| METALS, CYANIDE, AND TOTAL PHENOLS | | | | | | | | | | | | | | | |
| 1M. Antimony, Total (7440-36-0) | ☒ | ☐ | ☒ | <2.80 | | | | | | 1 | µg/L | | <3 | | 1 |
| 2M. Arsenic, Total (7723-14-0) | ☒ | ☐ | ☒ | <100 | | | | | | 1 | µg/L | | <36 | | 1 |
| 3M. Beryllium, Total (7440-41-7) | ☒ | ☐ | ☒ | <1.1 | | | | | | 1 | µg/L | | <1.1 | | 1 |
| 4M. Cadmium, Total (7440-43-9) | ☒ | ☐ | ☒ | <10 | | | | | | 1 | µg/L | | <1.0 | | 1 |
| 5M. Chromium, Total (7440-47-3) | ☒ | ☐ | ☒ | <10 | | | | | | 1 | µg/L | | <1.9 | | 1 |
| 6M. Copper, Total (7440-50-8) | ☒ | ☐ | ☒ | <20 | | | | | | 1 | µg/L | | <20 | | 1 |
| 7M. Lead, Total (7439-92-1) | ☒ | ☐ | ☒ | <16 | | | | | | 1 | µg/L | | <50 | | 1 |
| 8M. Mercury, Total (7439-97-6) | ☒ | ☐ | ☒ | 0.00111 | | | | | | 1 | µg/L | | 0.00224 | | 1 |
| 9M. Nickel, Total (7440-02-0) | ☒ | ☐ | ☒ | <5.8 | | | | | | 1 | µg/L | | <5.8 | | 1 |
| 10M. Selenium, Total (7782-49-2) | ☒ | ☐ | ☒ | <37 | | | | | | 1 | µg/L | | <37 | | 1 |
| 11M. Silver, Total (7440-22-4) | ☒ | ☐ | ☒ | <8.2 | | | | | | 1 | µg/L | | <8.2 | | 1 |
| 12M. Thallium, Total (7440-28-0) | ☒ | ☐ | ☒ | <15 | | | | | | 1 | µg/L | | <7.7 | | 1 |
| 13M. Zinc, Total (7440-66-6) | ☒ | ☐ | ☒ | <100 | | | | | | 1 | µg/L | | <100 | | 1 |
| 14M. Cyanide, Total (57-12-5) | ☒ | ☐ | ☒ | <0.00230 | | | | | | 1 | mg/L | | <0.00230 | | 1 |
| 15M. Phenols, Total | ☒ | ☐ | ☒ | <0.0340 | | | | | | 1 | mg/L | | <0.170 | | 1 |
| DIOXIN | | | | | | | | | | | | | | | |
| 2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| GC/MS FRACTION - VOLATILE COMPOUNDS | | | | | | | | | | | | | | | |
| 1V. Acrolein (107-02-8) | ☒ | ☐ | ☒ | <0.303 | | | | | | 1 | µg/L | | <0.606 | | 1 |
| 2V. Acrylonitrile (107-13-1) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | <0.320 | | 1 |

Facility ID. Number: FL0002208 Outfall No. D-001 POD

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| **GC/MS FRACTION - VOLATILE COMPOUNDS (continued)** | | | | | | | | | | | | | | | |
| 3V. Benzene (71-43-2) | ☒ | ☐ | ☒ | <0.0.600 | | | | | | 1 | µg/L | | <0.0600 | | 1 |
| 4V. Bis (Chloromethyl) Ether (542-88-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5V. Bromoform (75-25-2) | ☒ | ☐ | ☒ | <0.828 | | | | | | 1 | µg/L | | <0.276 | | 1 |
| 6V. Carbon Tetrachloride (56-23-5) | ☒ | ☐ | ☒ | <0.104 | | | | | | 1 | µg/L | | <0.104 | | 1 |
| 7V Chlorobenzene (108-90-7) | ☒ | ☐ | ☒ | <0.158 | | | | | | 1 | µg/L | | <0.158 | | 1 |
| 8V. Chlorodi-bromomethane (124-8-1) | ☒ | ☐ | ☒ | <0.132 | | | | | | 1 | µg/L | | <0.172 | | 1 |
| 9V. Chloroethane (74-00-3) | ☒ | ☐ | ☒ | <0.616 | | | | | | 1 | µg/L | | <0.616 | | 1 |
| 10V. 2-Chloro-ethylvinyl Ether (110-75-8) | ☒ | ☐ | ☒ | <0.149 | | | | | | 1 | µg/L | | <1.49 | | 1 |
| 11V. Chloroform (67-86-3) | ☒ | ☐ | ☒ | <0.154 | | | | | | 1 | µg/L | | <0.154 | | 1 |
| 12V. Dichloro-bromomethane (75-24-4) | ☒ | ☐ | ☒ | <0.516 | | | | | | 1 | µg/L | | <0.172 | | 1 |
| 13V. Dichloro-difluoromethane (75-71-8) | ☒ | ☐ | ☒ | <0.188 | | | | | | 1 | µg/L | | <0.188 | | 1 |
| 14V. 1,1-Dichloroethane (75-34-3) | ☒ | ☐ | ☒ | <0.408 | | | | | | 1 | µg/L | | <0.408 | | 1 |
| 15V. 1,2-Dichloroethane (107-06-2) | ☒ | ☐ | ☒ | <0.0720 | | | | | | 1 | µg/L | | <0.0720 | | 1 |
| 16V. 1,1-Dichloroethylene (75-35-4) | ☒ | ☐ | ☒ | <0.118 | | | | | | 1 | µg/L | | <0.118 | | 1 |
| 17V. 1,2,-Dichloropropane (78-87-5) | ☒ | ☐ | ☒ | <0.0900 | | | | | | 1 | µg/L | | <0.0900 | | 1 |
| 18V. 1,3-Dichloropropylene (542-75-6) | ☒ | ☐ | ☒ | <0.100 | | | | | | 1 | µg/L | | <0.100 | | 1 |
| 19V. Ethylbenzene (100-41-4) | ☒ | ☐ | ☒ | <0.168 | | | | | | 1 | µg/L | | <0.168 | | 1 |
| 20V. Methyl Bromide (74-83-9) | ☒ | ☐ | ☒ | <0.264 | | | | | | 1 | µg/L | | <0.264 | | 1 |
| 21V. Methyl Chloride (74-87-3) | ☒ | ☐ | ☒ | <0.0960 | | | | | | 1 | µg/L | | <0.0960 | | 1 |
| 22V. Methylene Chloride (74-98-2) | ☒ | ☐ | ☒ | <1.50 | | | | | | 1 | µg/L | | <1.50 | | 1 |
| 23V. 1,1,2,2-Tetra-chloroethane (79-34-5) | ☒ | ☐ | ☒ | <0.138 | | | | | | 1 | µg/L | | <0.138 | | 1 |
| 24V. Tetrachloroethylene (127-18-4) | ☒ | ☐ | ☒ | <0.168 | | | | | | 1 | µg/L | | <0.168 | | 1 |

Facility ID. Number: FL0002208 Outfall No. D-001 POD

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| GC/MS FRACTION - VOLATILE COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 25V. Toluene (108-88-3) | ☒ | ☐ | ☒ | <0.0700 | | | | | | 1 | µg/L | | <0.0700 | | 1 |
| 26V. 1,2-Trans-Dichloroethylene (156-60-5) | ☒ | ☐ | ☒ | <0.214 | | | | | | 1 | µg/L | | <0.214 | | 1 |
| 27V. 1,1,2-Trichloroethane (71-55-6) | ☒ | ☐ | ☒ | <0.0760 | | | | | | 1 | µg/L | | <0.0760 | | 1 |
| 28V. 1,1,2-Trichloroethane (79-00-5) | ☒ | ☐ | ☒ | <0.150 | | | | | | 1 | µg/L | | <0.150 | | 1 |
| 29V. Trichloroethylene (79-01-6) | ☒ | ☐ | ☒ | <0.100 | | | | | | 1 | µg/L | | <0.100 | | 1 |
| 30V. Trichloro-fluoromethane (75-69-4) | ☒ | ☐ | ☒ | <0.140 | | | | | | 1 | µg/L | | <0.140 | | 1 |
| 31V. Vinyl Chloride (75-01-4) | ☒ | ☐ | ☒ | <0.168 | | | | | | 1 | µg/L | | <0.168 | | 1 |
| [redacted] | | | | | | | | | | | | | | | |
| 1A. 2-Chlorophenol (95-57-8) | ☒ | ☐ | ☒ | <0.890 | | | | | | 1 | µg/L | | <0.890 | | 1 |
| 2A. 2,4-Dichlorophenol (120-83-2) | ☒ | ☐ | ☒ | <0.630 | | | | | | 1 | µg/L | | <0.630 | | 1 |
| 3A. 2,4-Dimethylphenol (105-67-9) | ☒ | ☐ | ☒ | <0.490 | | | | | | 1 | µg/L | | <0.490 | | 1 |
| 4A. 4,6-Dinitro-O-Cresol (534-53-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5A. 2,4-Dinitrophenol (51-28-5) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | <0.160 | | 1 |
| 6A. 2-Nitrophenol (88-75-5) | ☒ | ☐ | ☒ | <0.880 | | | | | | 1 | µg/L | | <0.880 | | 1 |
| 7A. 4-Nitrophenol (100-02-7) | ☒ | ☐ | ☒ | <0.700 | | | | | | 1 | µg/L | | <0.700 | | 1 |
| 8A P-Chloro-M-Cresol (59-50-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 9A Pentachlorophenol (87-86-5) | ☒ | ☐ | ☒ | <0.320 | | | | | | 1 | µg/L | | <0.320 | | 1 |
| 10A Phenol (108-95-2) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | 6.59 | | 1 |
| 11A 2,4,5-Trichloro-phenol (88-06-2) | ☒ | ☐ | ☒ | <0.680 | | | | | | 1 | µg/L | | <0.680 | | 1 |
| [redacted] | | | | | | | | | | | | | | | |
| 1B. Acenaphthene (63-32-9) | ☒ | ☐ | ☒ | <0.490 | | | | | | 1 | µg/L | | <0.490 | | 1 |
| 2B. Acenaphtylene (208-96-8) | ☒ | ☐ | ☒ | <0.640 | | | | | | 1 | µg/L | | <0.640 | | 1 |
| 3B. Anthracene (120-12-7) | ☒ | ☐ | ☒ | <0.500 | | | | | | 1 | µg/L | | <0.500 | | 1 |
| 4B. Benzidine (92-87-5) | ☒ | ☐ | ☒ | <0.260 | | | | | | 1 | µg/L | | <0.260 | | 1 |

Facility ID. Number: FL0002208 Outfall No. D-001 POD

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 5B. Benzo *(a)* Anthracene (56-55-3) | ☒ | ☐ | ☒ | <0.180 | | | | | | 1 | µg/L | | <0.180 | | 1 |
| 6B. Benzo *(a)* Pyrene (50-32-8) | ☒ | ☐ | ☒ | <0.280 | | | | | | 1 | µg/L | | <0.280 | | 1 |
| 7B. 3,4-Benzo-fluoranthene (205-99-2) | ☒ | ☐ | ☒ | <0.260 | | | | | | 1 | µg/L | | <0.260 | | 1 |
| 8B. Benzo *(ghi)* Perylene (191-24-2) | ☒ | ☐ | ☒ | <0.210 | | | | | | 1 | µg/L | | <0.210 | | 1 |
| 9B. Benzo *(k)* Fluoranthene (207-08-9) | ☒ | ☐ | ☒ | <0.480 | | | | | | 1 | µg/L | | <0.480 | | 1 |
| 10B. Bis *(2-Chloroethoxy)* Methane (111-91-1) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | <0.580 | | 1 |
| 11B. Bis *(2-chloroethyl)* Ether (111-44-4) | ☒ | ☐ | ☒ | <0.820 | | | | | | 1 | µg/L | | <0.820 | | 1 |
| 12B. Bis *(2-Chloroisopropyl)* Ether (102-60-1) | ☒ | ☐ | ☒ | <0.970 | | | | | | 1 | µg/L | | <0.970 | | 1 |
| 13B. Bis *(2-Ethylhexyl)* Phthalate (117-81-7) | ☒ | ☐ | ☒ | <1.32 | | | | | | 1 | µg/L | | <1.32 | | 1 |
| 14B. 4-Bromophenyl Phenyl Ether (101-55-3) | ☒ | ☐ | ☒ | <0.530 | | | | | | 1 | µg/L | | <0.530 | | 1 |
| 15B Butyl Benzyl Phthalate (84-68-7) | ☒ | ☐ | ☒ | <0.190 | | | | | | 1 | µg/L | | <0.190 | | 1 |
| 16B. 2-Chloronaphthalene (91-58-7) | ☒ | ☐ | ☒ | <0.550 | | | | | | 1 | µg/L | | <0.550 | | 1 |
| 17B. 4-Chlorophenyl Phenyl Ether (7005-72-3) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | <0.580 | | 1 |
| 18B. Chrysene (218-01-9) | ☒ | ☐ | ☒ | <0.300 | | | | | | 1 | µg/L | | <0.300 | | 1 |
| 19B. Dibenzo *(a,h)* Anthracene (53-70-3) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | <0.160 | | 1 |
| 20B. 1,2-Dichlorobenzene (95-50-1) | ☒ | ☐ | ☒ | <1.02 | | | | | | 1 | µg/L | | <1.02 | | 1 |
| 21B. 1,3-Dichlorobenzene (541-73-1) | ☒ | ☐ | ☒ | <1.24 | | | | | | 1 | µg/L | | <1.24 | | 1 |
| 22B. 1,4-Dichlorobenzene (106-46-7) | ☒ | ☐ | ☒ | <1.18 | | | | | | 1 | µg/L | | <1.18 | | 1 |
| 23B. 3,3'-Dichlorobenzidine (92-94-1) | ☒ | ☐ | ☒ | <3.10 | | | | | | 1 | µg/L | | <3.10 | | 1 |
| 24B. Diethyl Phthalate (84-66-2) | ☒ | ☐ | ☒ | <0.200 | | | | | | 1 | µg/L | | <0.200 | | 1 |
| 25B. Dimethyl Phthalate (131-11-3) | ☒ | ☐ | ☒ | <0.290 | | | | | | 1 | µg/L | | <0.290 | | 1 |
| 26B. Di-N-Butyl Phthalate (84-74-2) | ☒ | ☐ | ☒ | <0.240 | | | | | | 1 | µg/L | | <0.240 | | 1 |
| 27B. 2,4-Dinitrotoluene (121-14-2) | ☒ | ☐ | ☒ | <0.300 | | | | | | 1 | µg/L | | <0.300 | | 1 |
| 28B. 2,6-Dinitrotoluene (606-20-2) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | <0.520 | | 1 |

Facility ID. Number: FL0002208 Outfall No. D-001 POD

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 29B. Di-N-Octyl Phthalate (117-84-0) | ☒ | ☐ | ☒ | <0.170 | | | | | | 1 | µg/L | | <0.170 | | 1 |
| 30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7) | ☒ | ☐ | ☒ | <0.660 | | | | | | 1 | µg/L | | <0.660 | | 1 |
| 31B. Fluoranthene (206-44-0) | ☒ | ☐ | ☒ | <0.280 | | | | | | 1 | µg/L | | <0.280 | | 1 |
| 32B. Fluorene (86-73-7) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | <0.520 | | 1 |
| 33B. Hexachlorobenzene (118-74-1) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | <0.520 | | 1 |
| 34B. Hexachlorobutadiene (87-68-3) | ☒ | ☐ | ☒ | <0.530 | | | | | | 1 | µg/L | | <0.530 | | 1 |
| 35B. Hexachlorocyclopentadiene (77-47-4) | ☒ | ☐ | ☒ | <0.690 | | | | | | 1 | µg/L | | <0.690 | | 1 |
| 36B. Hexachloroethane (67-72-1) | ☒ | ☐ | ☒ | <0.810 | | | | | | 1 | µg/L | | <0.810 | | 1 |
| 37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5) | ☒ | ☐ | ☒ | <0.150 | | | | | | 1 | µg/L | | <0.150 | | 1 |
| 38B. Isophorone (78-59-1) | ☒ | ☐ | ☒ | <0.680 | | | | | | 1 | µg/L | | <0.680 | | 1 |
| 39B. Naphthalene (91-20-3) | ☒ | ☐ | ☒ | <0.700 | | | | | | 1 | µg/L | | <0.700 | | 1 |
| 40B. Nitrobenzene (98-95-9) | ☒ | ☐ | ☒ | <0.770 | | | | | | 1 | µg/L | | <0.770 | | 1 |
| 41B N-Nitrosodimethylamine (62-75-9) | ☒ | ☐ | ☒ | <1.11 | | | | | | 1 | µg/L | | <1.11 | | 1 |
| 42B. N-Nitrosodi-N-Propylamine (621-64-7) | ☒ | ☐ | ☒ | <1.10 | | | | | | 1 | µg/L | | <1.10 | | 1 |
| 43B. N-Nitro-sodiphenylamine (86-30-6) | ☒ | ☐ | ☒ | <0.380 | | | | | | 1 | µg/L | | <0.380 | | 1 |
| 44B Phenanthrene (85-01-8) | ☒ | ☐ | ☒ | <0.450 | | | | | | 1 | µg/L | | <0.450 | | 1 |
| 45B. Pyrene (129-00-0) | ☒ | ☐ | ☒ | <0.220 | | | | | | 1 | µg/L | | <0.220 | | 1 |
| 46B. 1,2,4-Trichlorobenzene (120-82-1) | ☒ | ☐ | ☒ | <1.27 | | | | | | 1 | µg/L | | <1.27 | | 1 |
| 1P. Aldrin (309-00-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 2P. -BHC (319-84-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 3P -BHC (319-85-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 4P. -BHC (58-89-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5P. -BHC (319-86-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

Facility ID. Number: FL0002208 Outfall No. D-001 POD

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 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. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 12P. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 13P. Endosulfan Sulfate (1031-07-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 14P. Endrin (72-20-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 15P. Endrin Aldehyde (7421-92-4) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 16P. Heptachlor (76-44-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 17P. Heptachlor Epoxide (1024-57-3) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 18P. PCB-1242 (53469-21-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 19P. PCB-1254 (11097-69-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 20P. PCB-1221 (11104-28-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 21P. PCB-1232 (11141-16-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 22P. PCB-1248 (12672-29-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 23P. PCB-1260 (11096-82-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 24P. PCB-1016 (12674-11-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 25P. Toxaphene (8001-35-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

Facility ID. Number: FL0002208 Outfall No. I-003

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

## VII. 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 | | 4. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. Max. Daily Value | | b. Max. 30-day Value | | c. Annual Avg. Value | | d. No. of Analyses | a. Concentration | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a Carbonaceous Biochemical Oxygen Demand (CBOD) | <2.00 | | | | | | 1 | mg/L | | | | |
| b. Chemical Oxygen Demand (COD) | <21.0 | | | | | | 1 | mg/L | | | | |
| c. Total Organic Carbon (TOC) | <0.168 | | | | | | 1 | mg/L | | | | |
| d. Total Suspended Solids (TSS) | 3.0 | | <3 | | <3 | | 55 | mg/L | | | | |
| e. Total Nitrogen (as N) | 0.231 | | | | | | 1 | mg/L | | | | |
| f. Total Phosphorus (as P) | <0.0640 | | | | | | 1 | mg/L | | | | |
| g. Ammonia (as N) | <0.0140 | | | | | | 1 | mg/L | | | | |
| h. Flow - actual or projected | Value 0.064 | | Value 0.027 | | Value 0.013 | | 54 | MGD | | Value | | |
| i. Flow - design | Value | | Value | | Value | | | | | Value | | |
| j. Specific Conductivity | Value 3.82 | | Value | | Value | | 1 | uS/cm | | Value | | |
| k. Temperature (winter) | Value | | Value | | Value | | | °C | | Value | | |
| l. Temperature (summer) | Value | | Value | | Value | | | °C | | Value | | |
| m. . pH | Min. | Max | Min. | Max. | | | | 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 which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additonal details and requirements.

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc... | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a. Bromide (24949-67-9) | ☒ | ☐ | 0.451 | | | | | | 1 | mg/L | | | | |
| b. Chlorine, Total Residual | ☐ | ☒ | | | | | | | | | | | | |
| c. Color | ☐ | ☒ | 0/5.00 | | | | | | 1 | Pt-Co | | | | |
| d. Fecal Coliform | ☐ | ☒ | | | | | | | | | | | | |
| e. Fluoride (16984-48-8) | ☐ | ☒ | <0.0210 | | | | | | 1 | mg/L | | | | |
| f. Nitrate-Nitrite (as N) | ☐ | ☒ | <0.260 | | | | | | 1 | mg/l | | | | |

: Item VII-B Contd.

Facility ID. Number FL0002208 Outfall No. I-003

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a .believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| g. Nitrogen, Total Organic (as N) | ☒ | ☐ | 0.111 | | | | | | 1 | mg/L | | | | |
| h. Oil and grease | ☒ | ☐ | 2.41 | | 2.41 | | 1.35 | | 8 | mg/L | | | | |
| i. Phosphorus, Total (as P) (7723-14-0) | ☐ | ☒ | <0.0640 | | | | | | 1 | mg/L | | | | |
| j. Radioactivity | | | | | | | | | | | | | | |
| (1) Alpha, Total | ☐ | ☒ | <9.12 | | | | | | 1 | pCi/L | | | | |
| (2) Beta, Total | ☒ | ☐ | 10.5+/-0.97 | | | | | | 1 | pCi/L | | | | |
| (3) Radium, Total | ☐ | ☒ | | | | | | | | | | | | |
| (4) Radium 226, Total | ☐ | ☒ | | | | | | | | | | | | |
| k. Sulfate (as $SO_4$) (14808-79-8) | ☒ | ☐ | <1.00 | | | | | | 1 | mg/L | | | | |
| l. Sulfide (as S) | ☐ | ☒ | | | | | | | | | | | | |
| m. Sulfite (as $SO_3$) (14265-45-3) | ☐ | ☒ | | | | | | | | | | | | |
| n. Surfactants | ☐ | ☒ | <0.0603 | | | | | | 1 | mg/l | | | | |
| o. Aluminum, Total (7429-90-5) | ☐ | ☒ | | | | | | | | | | | | |
| p. Barium, Total (7440-39-3) | ☐ | ☒ | | | | | | | | | | | | |
| q. Boron, Total (7440-42-8) | ☒ | ☐ | 750,000 | | | | | | 1 | µg/L | | | | |
| r. Cobalt, Total (7440-48-4) | ☐ | ☒ | | | | | | | | | | | | |
| s. Iron, Total (7439-89-6) | ☒ | ☐ | 8.19 | | | | | | 1 | µg/L | | | | |
| t. Maagnesium, Total (7439-95-4) | ☐ | ☒ | <1.590 | | | | | | 1 | µg/L | | | | |
| u. Molybdenum, Total (7439-98-7) | ☐ | ☒ | <1.09 | | | | | | 1 | µg/L | | | | |
| v. Manganese, Total (7439-96-5) | ☐ | ☒ | | | | | | | | | | | | |
| w. Tin, Total (7440-31-5) | ☐ | ☒ | <6.00 | | | | | | 1 | µg/L | | | | |
| x. Titanium, Total (7440-32-6) | ☒ | ☐ | 6.98 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-003

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2a for all GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2b for each pollutant you know or have reason to believe is present. Mark "X" in column 2c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one anlysis for that pollutnat if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4,dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| METALS, CYANIDE, AND TOTAL PHENOLS | | | | | | | | | | | | | | | |
| 1M. Antimony, Total (7440-36-0) | X | | X | <1.94 | | | | | | 1 | µg/L | | | | |
| 2M. Arsenic, Total (7723-14-0) | X | | X | <1.490 | | | | | | 1 | µg/L | | | | |
| 3M. Beryllium, Total (7440-41-7) | X | | X | <0.510 | | | | | | 1 | µg/L | | | | |
| 4M. Cadmium, Total (7440-43-9) | X | | X | <0.130 | | | | | | 1 | µg/L | | | | |
| 5M. Chromium, Total (7440-47-3) | X | | X | <0.840 | | | | | | 1 | µg/L | | | | |
| 6M. Copper, Total (7440-50-8) | X | | X | <1.95 | | | | | | 1 | µg/L | | | | |
| 7M. Lead, Total (7439-92-1) | X | | X | <1.400 | | | | | | 1 | µg/L | | | | |
| 8M. Mercury, Total (7439-97-6) | X | | X | 0.000250 | | | | | | 1 | µg/L | | | | |
| 9M. Nickel, Total (7440-02-0) | X | | X | <0.660 | | | | | | 1 | µg/L | | | | |
| 10M. Selenium, Total (7782-49-2) | X | | X | <1.22 | | | | | | 1 | µg/L | | | | |
| 11M. Silver, Total (7440-22-4) | X | | X | <0.180 | | | | | | 1 | µg/L | | | | |
| 12M. Thallium, Total (7440-28-0) | X | | X | <6.15 | | | | | | 1 | µg/L | | | | |
| 13M. Zinc, Total (7440-66-6) | X | X | | 5.65 | | | | | | 1 | µg/L | | | | |
| 14M. Cyanide, Total (57-12-5) | X | | X | <0.00230 | | | | | | 1 | mg/L | | | | |
| 15M. Phenols, Total | X | | X | <0.580 | | | | | | 1 | µg/L | | | | |
| DIOXIN | | | | | | | | | | | | | | | |
| 2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6) | | | X | | | | | | | | | | | | |
| GC/MS FRACTION - VOLATILE COMPOUNDS | | | | | | | | | | | | | | | |
| 1V. Acrolein (107-02-8) | X | | X | <0.303 | | | | | | 1 | µg/L | | | | |
| 2V. Acrylonitrile (107-13-1) | X | | X | <0.160 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-003

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| GC/MS FRACTION - VOLATILE COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 3V. Benzene (71-43-2) | ☒ | ☐ | ☒ | <0.0300 | | | | | | 1 | µg/L | | | | |
| 4V. Bis (Chloromethyl) Ether (542-88-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5V. Bromoform (75-25-2) | ☒ | ☐ | ☒ | <0.138 | | | | | | 1 | µg/L | | | | |
| 6V. Carbon Tetrachloride (56-23-5) | ☒ | ☐ | ☒ | <0.0520 | | | | | | 1 | µg/L | | | | |
| 7V Chlorobenzene (108-90-7) | ☒ | ☐ | ☒ | <0.0790 | | | | | | 1 | µg/L | | | | |
| 8V. Chlorodi-bromomethane (124-8-1) | ☒ | ☐ | ☒ | <0.0660 | | | | | | 1 | µg/L | | | | |
| 9V. Chloroethane (74-00-3) | ☒ | ☐ | ☒ | <0.308 | | | | | | 1 | µg/L | | | | |
| 10V. 2-Chloro-ethylvinyl Ether (110-75-8) | ☒ | ☐ | ☒ | <0.745 | | | | | | 1 | µg/L | | | | |
| 11V. Chloroform (67-86-3) | ☒ | ☐ | ☒ | <0.0770 | | | | | | 1 | µg/L | | | | |
| 12V. Dichloro-bromomethane (75-24-4) | ☒ | ☐ | ☒ | <0.0860 | | | | | | 1 | µg/L | | | | |
| 13V. Dichloro-difluoromethane (75-71-8) | ☒ | ☐ | ☒ | <0.0940 | | | | | | 1 | µg/L | | | | |
| 14V. 1,1-Dichloroethane (75-34-3) | ☒ | ☐ | ☒ | <0.204 | | | | | | 1 | µg/L | | | | |
| 15V. 1,2-Dichloroethane (107-06-2) | ☒ | ☐ | ☒ | <0.0360 | | | | | | 1 | µg/L | | | | |
| 16V. 1,1-Dichloroethylene (75-35-4) | ☒ | ☐ | ☒ | <0.0590 | | | | | | 1 | µg/L | | | | |
| 17V. 1,2,-Dichloropropane (78-87-5) | ☒ | ☐ | ☒ | <0.0450 | | | | | | 1 | µg/L | | | | |
| 18V. 1,3-Dichloropropylene (542-75-6) | ☒ | ☐ | ☒ | <0.0500 | | | | | | 1 | µg/L | | | | |
| 19V. Ethylbenzene (100-41-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |
| 20V. Methyl Bromide (74-83-9) | ☒ | ☐ | ☒ | <0.132 | | | | | | 1 | µg/L | | | | |
| 21V. Methyl Chloride (74-87-3) | ☒ | ☐ | ☒ | <0.0480 | | | | | | 1 | µg/L | | | | |
| 22V. Methylene Chloride (74-98-2) | ☒ | ☐ | ☒ | <0.751 | | | | | | 1 | µg/L | | | | |
| 23V. 1,1,2,2-Tetra-chloroethane (79-34-5) | ☒ | ☐ | ☒ | <0.0690 | | | | | | 1 | µg/L | | | | |
| 24V. Tetrachloroethylene (127-18-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-003

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| GC/MS FRACTION - VOLATILE COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 25V. Toluene (108-88-3) | ☒ | ☒ | ☐ | 0.750 | | | | | | 1 | µg/L | | | | |
| 26V. 1,2-Trans-Dichloroethylene (156-60-5) | ☒ | ☐ | ☒ | <0.170 | | | | | | 1 | µg/L | | | | |
| 27V. 1,1,2-Trichloroethane (71-55-6) | ☒ | ☐ | ☒ | <0.0380 | | | | | | 1 | µg/L | | | | |
| 28V. 1,1,2-Trichloroethane (79-00-5) | ☒ | ☐ | ☒ | <0.0750 | | | | | | 1 | µg/L | | | | |
| 29V. Trichloroethylene (79-01-6) | ☒ | ☐ | ☒ | <0.0500 | | | | | | 1 | µg/L | | | | |
| 30V. Trichloro-fluoromethane (75-69-4) | ☒ | ☐ | ☒ | <0.0700 | | | | | | 1 | µg/L | | | | |
| 31V. Vinyl Chloride (75-01-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |
| [redacted] | | | | | | | | | | | | | | | |
| 1A. 2-Chlorophenol (95-57-8) | ☒ | ☐ | ☒ | <0.890 | | | | | | 1 | µg/L | | | | |
| 2A. 2,4-Dichlorophenol (120-83-2) | ☒ | ☐ | ☒ | <0.630 | | | | | | 1 | µg/L | | | | |
| 3A. 2,4-Dimethylphenol (105-67-9) | ☒ | ☐ | ☒ | <0.490 | | | | | | 1 | µg/L | | | | |
| 4A. 4,6-Dinitro-O-Cresol (534-53-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5A. 2,4-Dinitrophenol (51-28-5) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | | | |
| 6A. 2-Nitrophenol (88-75-5) | ☒ | ☐ | ☒ | <0.880 | | | | | | 1 | µg/L | | | | |
| 7A. 4-Nitrophenol (100-02-7) | ☒ | ☐ | ☒ | <0.700 | | | | | | 1 | µg/L | | | | |
| 8A P-Chloro-M-Cresol (59-50-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 9A Pentachlorophenol (87-86-5) | ☒ | ☐ | ☒ | <0.320 | | | | | | 1 | µg/L | | | | |
| 10A Phenol (108-95-2) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | | | |
| 11A 2,4,5-Trichloro-phenol (88-06-2) | ☒ | ☐ | ☒ | <0.680 | | | | | | 1 | µg/L | | | | |
| [redacted] | | | | | | | | | | | | | | | |
| 1B. Acenaphthene (63-32-9) | ☒ | ☐ | ☒ | <0.490 | | | | | | 1 | µg/L | | | | |
| 2B. Acenaphtylene (208-96-8) | ☒ | ☐ | ☒ | <0.640 | | | | | | 1 | µg/L | | | | |
| 3B. Anthracene (120-12-7) | ☒ | ☐ | ☒ | <0.500 | | | | | | 1 | µg/L | | | | |
| 4B. Benzidine (92-87-5) | ☒ | ☐ | ☒ | <0.260 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-003

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 5B. Benzo *(a)* Anthracene (56-55-3) | ☒ | ☐ | ☒ | <0.180 | | | | | | 1 | µg/L | | | | |
| 6B. Benzo *(a)* Pyrene (50-32-8) | ☒ | ☐ | ☒ | <0.280 | | | | | | 1 | µg/L | | | | |
| 7B. 3,4-Benzo-fluoranthene (205-99-2) | ☒ | ☐ | ☒ | <0.260 | | | | | | 1 | µg/L | | | | |
| 8B. Benzo *(ghi)* Perylene (191-24-2) | ☒ | ☐ | ☒ | <0.210 | | | | | | 1 | µg/L | | | | |
| 9B. Benzo *(k)* Fluoranthene (207-08-9) | ☒ | ☐ | ☒ | <0.480 | | | | | | 1 | µg/L | | | | |
| 10B. Bis *(2-Chloroethoxy)* Methane (111-91-1) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | | | |
| 11B. Bis *(2-chloroethyl)* Ether (111-44-4) | ☒ | ☐ | ☒ | <0.820 | | | | | | 1 | µg/L | | | | |
| 12B. Bis *(2-Chloroisopropyl)* Ether (102-60-1) | ☒ | ☐ | ☒ | <0.970 | | | | | | 1 | µg/L | | | | |
| 13B. Bis *(2-Ethylhexyl)* Phthalate (117-81-7) | ☒ | ☐ | ☒ | <1.32 | | | | | | 1 | µg/L | | | | |
| 14B. 4-Bromophenyl Phenyl Ether (101-55-3) | ☒ | ☐ | ☒ | <0.530 | | | | | | 1 | µg/L | | | | |
| 15B Butyl Benzyl Phthalate (84-68-7) | ☒ | ☐ | ☒ | <0.190 | | | | | | 1 | µg/L | | | | |
| 16B. 2-Chloronaphthalene (91-58-7) | ☒ | ☐ | ☒ | <0.550 | | | | | | 1 | µg/L | | | | |
| 17B. 4-Chlorophenyl Phenyl Ether (7005-72-3) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | | | |
| 18B. Chrysene (218-01-9) | ☒ | ☐ | ☒ | <0.300 | | | | | | 1 | µg/L | | | | |
| 19B. Dibenzo *(a,h)* Anthracene (53-70-3) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | | | |
| 20B. 1,2-Dichlorobenzene (95-50-1) | ☒ | ☐ | ☒ | <1.02 | | | | | | 1 | µg/L | | | | |
| 21B. 1,3-Dichlorobenzene (541-73-1) | ☒ | ☐ | ☒ | <1.24 | | | | | | 1 | µg/L | | | | |
| 22B. 1,4-Dichlorobenzene (106-46-7) | ☒ | ☐ | ☒ | <1.18 | | | | | | 1 | µg/L | | | | |
| 23B. 3,3'-Dichlorobenzidine (92-94-1) | ☒ | ☐ | ☒ | <0.310 | | | | | | 1 | µg/L | | | | |
| 24B. Diethyl Phthalate (84-66-2) | ☒ | ☐ | ☒ | <0.200 | | | | | | 1 | µg/L | | | | |
| 25B. Dimethyl Phthalate (131-11-3) | ☒ | ☐ | ☒ | <0.290 | | | | | | 1 | µg/L | | | | |
| 26B. Di-N-Butyl Phthalate (84-74-2) | ☒ | ☐ | ☒ | <0.240 | | | | | | 1 | µg/L | | | | |
| 27B. 2,4-Dinitrotoluene (121-14-2) | ☒ | ☐ | ☒ | <0.300 | | | | | | 1 | µg/L | | | | |
| 28B. 2,6-Dinitrotoluene (606-20-2) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-003

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 29B. Di-N-Octyl Phthalate (117-84-0) | ☒ | ☐ | ☒ | <0.170 | | | | | | 1 | µg/L | | | | |
| 30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7) | ☒ | ☐ | ☒ | <0.660 | | | | | | 1 | µg/L | | | | |
| 31B. Fluoranthene (206-44-0) | ☒ | ☐ | ☒ | <0.280 | | | | | | 1 | µg/L | | | | |
| 32B. Fluorene (86-73-7) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | | | |
| 33B. Hexachlorobenzene (118-74-1) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | | | |
| 34B. Hexachlorobutadiene (87-68-3) | ☒ | ☐ | ☒ | <0.530 | | | | | | 1 | µg/L | | | | |
| 35B. Hexachlorocyclopentadiene (77-47-4) | ☒ | ☐ | ☒ | <0.690 | | | | | | 1 | µg/L | | | | |
| 36B. Hexachloroethane (67-72-1) | ☒ | ☐ | ☒ | <0.810 | | | | | | 1 | µg/L | | | | |
| 37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5) | ☒ | ☐ | ☒ | <0.150 | | | | | | 1 | µg/L | | | | |
| 38B. Isophorone (78-59-1) | ☒ | ☐ | ☒ | <0.680 | | | | | | 1 | µg/L | | | | |
| 39B. Naphthalene (91-20-3) | ☒ | ☐ | ☒ | <0.700 | | | | | | 1 | µg/L | | | | |
| 40B. Nitrobenzene (98-95-9) | ☒ | ☐ | ☒ | <0.770 | | | | | | 1 | µg/L | | | | |
| 41B N-Nitrosodimethylamine (62-75-9) | ☒ | ☐ | ☒ | <1.11 | | | | | | 1 | µg/L | | | | |
| 42B. N-Nitrosodi-N-Propylamine (621-64-7) | ☒ | ☐ | ☒ | <1.10 | | | | | | 1 | µg/L | | | | |
| 43B. N-Nitro-sodiphenylamine (86-30-6) | ☒ | ☐ | ☒ | <0.380 | | | | | | 1 | µg/L | | | | |
| 44B Phenanthrene (85-01-8) | ☒ | ☐ | ☒ | <0.450 | | | | | | 1 | µg/L | | | | |
| 45B. Pyrene (129-00-0) | ☒ | ☐ | ☒ | <0.220 | | | | | | 1 | µg/L | | | | |
| 46B. 1,2,4-Trichlorobenzene (120-82-1) | ☒ | ☐ | ☒ | <1.27 | | | | | | 1 | µg/L | | | | |
| 1P. Aldrin (309-00-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 2P. -BHC (319-84-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 3P -BHC (319-85-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 4P. -BHC (58-89-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5P. -BHC (319-86-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

Facility ID. Number: FL0002208 Outfall No. I-003

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 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. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 12P. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 13P. Endosulfan Sulfate (1031-07-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 14P. Endrin (72-20-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 15P. Endrin Aldehyde (7421-92-4) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 16P. Heptachlor (76-44-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 17P. Heptachlor Epoxide (1024-57-3) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 18P. PCB-1242 (53469-21-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 19P. PCB-1254 (11097-69-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 20P. PCB-1221 (11104-28-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 21P. PCB-1232 (11141-16-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 22P. PCB-1248 (12672-29-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 23P. PCB-1260 (11096-82-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 24P. PCB-1016 (12674-11-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 25P. Toxaphene (8001-35-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

Facility ID. Number: FL0002208 Outfall No. I-005

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

## VII. 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 | | 4. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. Max. Daily Value | | b. Max. 30-day Value | | c. Annual Avg. Value | | d. No. of Analyses | a. Concentration | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a Carbonaceous Biochemical Oxygen Demand (CBOD) | 12.1 | | | | | | 1 | mg/L | | | | |
| b. Chemical Oxygen Demand (COD) | 18 | | | | | | 1 | mg/L | | | | |
| c. Total Organic Carbon (TOC) | 4.82 | | | | | | 1 | mg/L | | | | |
| d. Total Suspended Solids (TSS) | 30 | | 11.0 | | 3.2 | | 55 | mg/L | | | | |
| e. Total Nitrogen (as N) | 8.7 | | | | | | 1 | mg/L | | | | |
| f. Total Phosphorus (as P) | <0.0034 | | | | | | 1 | mg/L | | | | |
| g. Ammonia (as N) | 6.62 | | | | | | 1 | mg/L | | | | |
| h. Flow - actual or projected | Value 0.580 | | Value 0.340 | | Value 0.145 | | 45 | MGD | | Value | | |
| i. Flow - design | Value | | Value | | Value | | | | | Value | | |
| j. Specific Conductivity | Value 28 | | Value | | Value | | 1 | umhos/cm | | Value | | |
| k. Temperature (winter) | Value | | Value | | Value | | | °C | | Value | | |
| l. Temperature (summer) | Value | | Value | | Value | | | °C | | Value | | |
| m. . pH | Min. | Max. | Min. | Max. | | | | 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 which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additonal details and requirements.

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc... | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a. Bromide (24949-67-9) | ☐ | ☒ | | | | | | | | | | | | |
| b. Chlorine, Total Residual | ☐ | ☒ | | | | | | | | | | | | |
| c. Color | ☐ | ☒ | | | | | | | | | | | | |
| d. Fecal Coliform | ☐ | ☒ | | | | | | | | | | | | |
| e. Fluoride (16984-48-8) | ☐ | ☒ | | | | | | | | | | | | |
| f. Nitrate-Nitrite (as N) | ☒ | ☐ | 0.22 | | | | | | 1 | mg/l | | | | |

: Item VII-B Contd.

Facility ID. Number FL0002208 Outfall No. I-005

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a .believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| g. Nitrogen, Total Organic (as N) | ☐ | ☒ | | | | | | | | | | | | |
| h. Oil and grease | ☒ | ☐ | 7.4 | | <1.0 | | <1.0 | | 55 | mg/L | | | | |
| i. Phosphorus, Total (as P) (7723-14-0) | ☐ | ☒ | <0.0034 | | | | | | 1 | mg/L | | | | |
| j. Radioactivity | | | | | | | | | | | | | | |
| (1) Alpha, Total | ☐ | ☒ | <0.79 | | | | | | 1 | pCi/L | | | | |
| (2) Beta, Total | ☐ | ☒ | <1.56 | | | | | | 1 | pCi/L | | | | |
| (3) Radium, Total | ☐ | ☒ | | | | | | | | | | | | |
| (4) Radium 226, Total | ☐ | ☒ | | | | | | | | | | | | |
| k. Sulfate (as $SO_4$) (14808-79-8) | ☐ | ☒ | | | | | | | | | | | | |
| l. Sulfide (as S) | ☐ | ☒ | | | | | | | | | | | | |
| m. Sulfite (as $SO_3$) (14265-45-3) | ☐ | ☒ | | | | | | | | | | | | |
| n. Surfactants | ☐ | ☒ | | | | | | | | | | | | |
| o. Aluminum, Total (7429-90-5) | ☐ | ☒ | | | | | | | | | | | | |
| p. Barium, Total (7440-39-3) | ☐ | ☒ | | | | | | | | | | | | |
| q. Boron, Total (7440-42-8) | ☐ | ☒ | <2.40 | | | | | | 1 | µg/L | | | | |
| r. Cobalt, Total (7440-48-4) | ☐ | ☒ | | | | | | | | | | | | |
| s. Iron, Total (7439-89-6) | ☐ | ☒ | <10 | | | | | | 1 | µg/L | | | | |
| t. Maagnesium, Total (7439-95-4) | ☐ | ☒ | <0.10 | | | | | | 1 | mg/L | | | | |
| u. Molybdenum, Total (7439-98-7) | ☐ | ☒ | <1.09 | | | | | | 1 | µg/L | | | | |
| v. Manganese, Total (7439-96-5) | ☐ | ☒ | | | | | | | | | | | | |
| w. Tin, Total (7440-31-5) | ☐ | ☒ | <7.97 | | | | | | 1 | µg/L | | | | |
| x. Titanium, Total (7440-32-6) | ☐ | ☒ | <0.120 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-005

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2a for all GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2b for each pollutant you know or have reason to believe is present. Mark "X" in column 2c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one anlysis for that pollutnat if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4,dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| METALS, CYANIDE, AND TOTAL PHENOLS | | | | | | | | | | | | | | | |
| 1M. Antimony, Total (7440-36-0) | ☒ | ☐ | ☒ | <1.94 | | | | | | 1 | µg/L | | | | |
| 2M. Arsenic, Total (7723-14-0) | ☒ | ☐ | ☒ | <3.6 | | | | | | 1 | µg/L | | | | |
| 3M. Beryllium, Total (7440-41-7) | ☒ | ☐ | ☒ | <0.11 | | | | | | 1 | µg/L | | | | |
| 4M. Cadmium, Total (7440-43-9) | ☒ | ☐ | ☒ | <0.10 | | | | | | 1 | µg/L | | | | |
| 5M. Chromium, Total (7440-47-3) | ☒ | ☐ | ☒ | <1.0 | | | | | | 1 | µg/L | | | | |
| 6M. Copper, Total (7440-50-8) | ☒ | ☐ | ☒ | <2.0 | | | | | | 1 | µg/L | | | | |
| 7M. Lead, Total (7439-92-1) | ☒ | ☐ | ☒ | <1.6 | | | | | | 1 | µg/L | | | | |
| 8M. Mercury, Total (7439-97-6) | ☒ | ☐ | ☒ | 0.00126 | | | | | | 1 | µg/L | | | | |
| 9M. Nickel, Total (7440-02-0) | ☒ | ☐ | ☒ | <0.58 | | | | | | 1 | µg/L | | | | |
| 10M. Selenium, Total (7782-49-2) | ☒ | ☐ | ☒ | <3.7 | | | | | | 1 | µg/L | | | | |
| 11M. Silver, Total (7440-22-4) | ☒ | ☐ | ☒ | <0.82 | | | | | | 1 | µg/L | | | | |
| 12M. Thallium, Total (7440-28-0) | ☒ | ☐ | ☒ | <1.5 | | | | | | 1 | µg/L | | | | |
| 13M. Zinc, Total (7440-66-6) | ☒ | ☐ | ☒ | <10 | | | | | | 1 | µg/L | | | | |
| 14M. Cyanide, Total (57-12-5) | ☒ | ☐ | ☒ | <0.00230 | | | | | | 1 | mg/L | | | | |
| 15M. Phenols, Total | ☒ | ☐ | ☒ | <0.0340 | | | | | | 1 | mg/L | | | | |
| | | | | | | | | | | | | | | | |
| 2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 1V. Acrolein (107-02-8) | ☒ | ☐ | ☒ | <0.303 | | | | | | 1 | µg/L | | | | |
| 2V. Acrylonitrile (107-13-1) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-005

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| GC/MS FRACTION - VOLATILE COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 3V. Benzene (71-43-2) | ☒ | ☐ | ☒ | <0.0300 | | | | | | 1 | µg/L | | | | |
| 4V. Bis (Chloromethyl) Ether (542-88-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5V. Bromoform (75-25-2) | ☒ | ☐ | ☒ | <0.138 | | | | | | 1 | µg/L | | | | |
| 6V. Carbon Tetrachloride (56-23-5) | ☒ | ☐ | ☒ | <0.0520 | | | | | | 1 | µg/L | | | | |
| 7V Chlorobenzene (108-90-7) | ☒ | ☐ | ☒ | <0.0790 | | | | | | 1 | µg/L | | | | |
| 8V. Chlorodi-bromomethane (124-8-1) | ☒ | ☐ | ☒ | <0.0660 | | | | | | 1 | µg/L | | | | |
| 9V. Chloroethane (74-00-3) | ☒ | ☐ | ☒ | <0.308 | | | | | | 1 | µg/L | | | | |
| 10V. 2-Chloro-ethylvinyl Ether (110-75-8) | ☒ | ☐ | ☒ | <0.745 | | | | | | 1 | µg/L | | | | |
| 11V. Chloroform (67-86-3) | ☒ | ☐ | ☒ | <0.0770 | | | | | | 1 | µg/L | | | | |
| 12V. Dichloro-bromomethane (75-24-4) | ☒ | ☐ | ☒ | <0.0860 | | | | | | 1 | µg/L | | | | |
| 13V. Dichloro-difluoromethane (75-71-8) | ☒ | ☐ | ☒ | <0.0940 | | | | | | 1 | µg/L | | | | |
| 14V. 1,1-Dichloroethane (75-34-3) | ☒ | ☐ | ☒ | <0.240 | | | | | | 1 | µg/L | | | | |
| 15V. 1,2-Dichloroethane (107-06-2) | ☒ | ☐ | ☒ | <0.0360 | | | | | | 1 | µg/L | | | | |
| 16V. 1,1-Dichloroethylene (75-35-4) | ☒ | ☐ | ☒ | <0.0590 | | | | | | 1 | µg/L | | | | |
| 17V. 1,2,-Dichloropropane (78-87-5) | ☒ | ☐ | ☒ | <0.0450 | | | | | | 1 | µg/L | | | | |
| 18V. 1,3-Dichloropropylene (542-75-6) | ☒ | ☐ | ☒ | <0.0500 | | | | | | 1 | µg/L | | | | |
| 19V. Ethylbenzene (100-41-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |
| 20V. Methyl Bromide (74-83-9) | ☒ | ☐ | ☒ | <0.132 | | | | | | 1 | µg/L | | | | |
| 21V. Methyl Chloride (74-87-3) | ☒ | ☐ | ☒ | <0.0480 | | | | | | 1 | µg/L | | | | |
| 22V. Methylene Chloride (74-98-2) | ☒ | ☐ | ☒ | <0.751 | | | | | | 1 | µg/L | | | | |
| 23V. 1,1,2,2-Tetra-chloroethane (79-34-5) | ☒ | ☐ | ☒ | <0.0690 | | | | | | 1 | µg/L | | | | |
| 24V. Tetrachloroethylene (127-18-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-005

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| GC/MS FRACTION - VOLATILE COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 25V. Toluene (108-88-3) | ☒ | ☐ | ☒ | <0.0350 | | | | | | 1 | µg/L | | | | |
| 26V. 1,2-Trans-Dichloroethylene (156-60-5) | ☒ | ☐ | ☒ | <0.107 | | | | | | 1 | µg/L | | | | |
| 27V. 1,1,2-Trichloroethane (71-55-6) | ☒ | ☐ | ☒ | <0.0380 | | | | | | 1 | µg/L | | | | |
| 28V. 1,1,2-Trichloroethane (79-00-5) | ☒ | ☐ | ☒ | <0.0750 | | | | | | 1 | µg/L | | | | |
| 29V. Trichloroethylene (79-01-6) | ☒ | ☐ | ☒ | <0.0500 | | | | | | 1 | µg/L | | | | |
| 30V. Trichloro-fluoromethane (75-69-4) | ☒ | ☐ | ☒ | <0.0700 | | | | | | 1 | µg/L | | | | |
| 31V. Vinyl Chloride (75-01-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |
| | | | | | | | | | | | | | | | |
| 1A. 2-Chlorophenol (95-57-8) | ☒ | ☐ | ☒ | <0.908 | | | | | | 1 | µg/L | | | | |
| 2A. 2,4-Dichlorophenol (120-83-2) | ☒ | ☐ | ☒ | <0.643 | | | | | | 1 | µg/L | | | | |
| 3A. 2,4-Dimethylphenol (105-67-9) | ☒ | ☐ | ☒ | <0.500 | | | | | | 1 | µg/L | | | | |
| 4A. 4,6-Dinitro-O-Cresol (534-53-1) | ☐ | ☐ | ☐ | | | | | | | | | | | | |
| 5A. 2,4-Dinitrophenol (51-28-5) | ☒ | ☐ | ☒ | <0.163 | | | | | | 1 | µg/L | | | | |
| 6A. 2-Nitrophenol (88-75-5) | ☒ | ☐ | ☒ | <0.898 | | | | | | 1 | µg/L | | | | |
| 7A. 4-Nitrophenol (100-02-7) | ☒ | ☐ | ☒ | <0.714 | | | | | | 1 | µg/L | | | | |
| 8A P-Chloro-M-Cresol (59-50-7) | ☐ | ☐ | ☐ | | | | | | | | | | | | |
| 9A Pentachlorophenol (87-86-5) | ☒ | ☐ | ☒ | <0.327 | | | | | | 1 | µg/L | | | | |
| 10A Phenol (108-95-2) | ☒ | ☐ | ☒ | <0.592 | | | | | | 1 | µg/L | | | | |
| 11A 2,4,5-Trichloro-phenol (88-06-2) | ☒ | ☐ | ☒ | <0.694 | | | | | | 1 | µg/L | | | | |
| | | | | | | | | | | | | | | | |
| 1B. Acenaphthene (63-32-9) | ☒ | ☐ | ☒ | <0.500 | | | | | | 1 | µg/L | | | | |
| 2B. Acenaphtylene (208-96-8) | ☒ | ☐ | ☒ | <0.653 | | | | | | 1 | µg/L | | | | |
| 3B. Anthracene (120-12-7) | ☒ | ☐ | ☒ | <0.510 | | | | | | 1 | µg/L | | | | |
| 4B. Benzidine (92-87-5) | ☒ | ☐ | ☒ | <0.265 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-005

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 5B. Benzo *(a)* Anthracene (56-55-3) | ☒ | ☐ | ☒ | <0.184 | | | | | | 1 | µg/L | | | | |
| 6B. Benzo *(a)* Pyrene (50-32-8) | ☒ | ☐ | ☒ | <0.286 | | | | | | 1 | µg/L | | | | |
| 7B. 3,4-Benzo-fluoranthene (205-99-2) | ☒ | ☐ | ☒ | <0.265 | | | | | | 1 | µg/L | | | | |
| 8B. Benzo *(ghi)* Perylene (191-24-2) | ☒ | ☐ | ☒ | <0.214 | | | | | | 1 | µg/L | | | | |
| 9B. Benzo *(k)* Fluoranthene (207-08-9) | ☒ | ☐ | ☒ | <0.490 | | | | | | 1 | µg/L | | | | |
| 10B. Bis *(2-Chloroethoxy)* Methane (111-91-1) | ☒ | ☐ | ☒ | <0.592 | | | | | | 1 | µg/L | | | | |
| 11B. Bis *(2-chloroethyl)* Ether (111-44-4) | ☒ | ☐ | ☒ | <0.837 | | | | | | 1 | µg/L | | | | |
| 12B. Bis *(2-Chloroisopropyl)* Ether (102-60-1) | ☒ | ☐ | ☒ | <0.990 | | | | | | 1 | µg/L | | | | |
| 13B. Bis *(2-Ethylhexyl)* Phthalate (117-81-7) | ☒ | ☒ | ☐ | 10.5 | | | | | | 1 | µg/L | | | | |
| 14B. 4-Bromophenyl Phenyl Ether (101-55-3) | ☒ | ☐ | ☒ | <0.541 | | | | | | 1 | µg/L | | | | |
| 15B Butyl Benzyl Phthalate (84-68-7) | ☒ | ☐ | ☒ | <0.941 | | | | | | 1 | µg/L | | | | |
| 16B. 2-Chloronaphthalene (91-58-7) | ☒ | ☐ | ☒ | <0.561 | | | | | | 1 | µg/L | | | | |
| 17B. 4-Chlorophenyl Phenyl Ether (7005-72-3) | ☒ | ☐ | ☒ | <0.592 | | | | | | 1 | µg/L | | | | |
| 18B. Chrysene (218-01-9) | ☒ | ☐ | ☒ | <0.306 | | | | | | 1 | µg/L | | | | |
| 19B. Dibenzo *(a,h)* Anthracene (53-70-3) | ☒ | ☐ | ☒ | <0.163 | | | | | | 1 | µg/L | | | | |
| 20B. 1,2-Dichlorobenzene (95-50-1) | ☒ | ☐ | ☒ | <1.04 | | | | | | 1 | µg/L | | | | |
| 21B. 1,3-Dichlorobenzene (541-73-1) | ☒ | ☐ | ☒ | <1.27 | | | | | | 1 | µg/L | | | | |
| 22B. 1,4-Dichlorobenzene (106-46-7) | ☒ | ☐ | ☒ | <1.20 | | | | | | 1 | µg/L | | | | |
| 23B. 3,3'-Dichlorobenzidine (92-94-1) | ☒ | ☐ | ☒ | <0.316 | | | | | | 1 | µg/L | | | | |
| 24B. Diethyl Phthalate (84-66-2) | ☒ | ☐ | ☒ | <0.204 | | | | | | 1 | µg/L | | | | |
| 25B. Dimethyl Phthalate (131-11-3) | ☒ | ☐ | ☒ | <0.296 | | | | | | 1 | µg/L | | | | |
| 26B. Di-N-Butyl Phthalate (84-74-2) | ☒ | ☐ | ☒ | <0.245 | | | | | | 1 | µg/L | | | | |
| 27B. 2,4-Dinitrotoluene (121-14-2) | ☒ | ☐ | ☒ | <0.306 | | | | | | 1 | µg/L | | | | |
| 28B. 2,6-Dinitrotoluene (606-20-2) | ☒ | ☐ | ☒ | <0.531 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-005

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 29B. Di-N-Octyl Phthalate (117-84-0) | ☒ | ☐ | ☒ | <0.173 | | | | | | 1 | µg/L | | | | |
| 30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7) | ☒ | ☐ | ☒ | <0.673 | | | | | | 1 | µg/L | | | | |
| 31B. Fluoranthene (206-44-0) | ☒ | ☐ | ☒ | <0.286 | | | | | | 1 | µg/L | | | | |
| 32B. Fluorene (86-73-7) | ☒ | ☐ | ☒ | <0.531 | | | | | | 1 | µg/L | | | | |
| 33B. Hexachlorobenzene (118-74-1) | ☒ | ☐ | ☒ | <0.531 | | | | | | 1 | µg/L | | | | |
| 34B. Hexachlorobutadiene (87-68-3) | ☒ | ☐ | ☒ | <0.541 | | | | | | 1 | µg/L | | | | |
| 35B. Hexachlorocyclopentadiene (77-47-4) | ☒ | ☐ | ☒ | <0.704 | | | | | | 1 | µg/L | | | | |
| 36B. Hexachloroethane (67-72-1) | ☒ | ☐ | ☒ | <0.827 | | | | | | 1 | µg/L | | | | |
| 37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5) | ☒ | ☐ | ☒ | <0.153 | | | | | | 1 | µg/L | | | | |
| 38B. Isophorone (78-59-1) | ☒ | ☐ | ☒ | <0.694 | | | | | | 1 | µg/L | | | | |
| 39B. Naphthalene (91-20-3) | ☒ | ☐ | ☒ | <0.714 | | | | | | 1 | µg/L | | | | |
| 40B. Nitrobenzene (98-95-9) | ☒ | ☐ | ☒ | <0.786 | | | | | | 1 | µg/L | | | | |
| 41B N-Nitrosodimethylamine (62-75-9) | ☒ | ☐ | ☒ | <1.13 | | | | | | 1 | µg/L | | | | |
| 42B. N-Nitrosodi-N-Propylamine (621-64-7) | ☒ | ☐ | ☒ | <1.12 | | | | | | 1 | µg/L | | | | |
| 43B. N-Nitro-sodiphenylamine (86-30-6) | ☒ | ☐ | ☒ | <0.388 | | | | | | 1 | µg/L | | | | |
| 44B Phenanthrene (85-01-8) | ☒ | ☐ | ☒ | <0.459 | | | | | | 1 | µg/L | | | | |
| 45B. Pyrene (129-00-0) | ☒ | ☐ | ☒ | <0.224 | | | | | | 1 | µg/L | | | | |
| 46B. 1,2,4-Trichlorobenzene (120-82-1) | ☒ | ☐ | ☒ | <1.30 | | | | | | 1 | µg/L | | | | |
| 1P. Aldrin (309-00-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 2P. -BHC (319-84-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 3P -BHC (319-85-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 4P. -BHC (58-89-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5P. -BHC (319-86-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

Facility ID. Number: FL0002208 Outfall No. I-005

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 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. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 12P. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 13P. Endosulfan Sulfate (1031-07-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 14P. Endrin (72-20-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 15P. Endrin Aldehyde (7421-92-4) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 16P. Heptachlor (76-44-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 17P. Heptachlor Epoxide (1024-57-3) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 18P. PCB-1242 (53469-21-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 19P. PCB-1254 (11097-69-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 20P. PCB-1221 (11104-28-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 21P. PCB-1232 (11141-16-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 22P. PCB-1248 (12672-29-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 23P. PCB-1260 (11096-82-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 24P. PCB-1016 (12674-11-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 25P. Toxaphene (8001-35-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

Facility ID. Number: FL0002208 Outfall No. I-008

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

## VII. 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 | | 4. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. Max. Daily Value | | b. Max. 30-day Value | | c. Annual Avg. Value | | d. No. of Analyses | a. Concentration | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a Carbonaceous Biochemical Oxygen Demand (CBOD) | <2.00 | | | | | | 1 | mg/L | | | | |
| b. Chemical Oxygen Demand (COD) | 30 | | | | | | 1 | mg/L | | | | |
| c. Total Organic Carbon (TOC) | 7.69 | | | | | | 1 | mg/L | | | | |
| d. Total Suspended Solids (TSS) | 34 | | 34 | | 5.9 | | 54 | mg/L | | | | |
| e. Total Nitrogen (as N) | 1.2 | | | | | | 1 | mg/L | | | | |
| f. Total Phosphorus (as P) | 0.31 | | | | | | 1 | mg/L | | | | |
| g. Ammonia (as N) | 0.230 | | | | | | 1 | mg/L | | | | |
| h. Flow - actual or projected | Value 13.92 | | Value 3.30 | | Value 0.70 | | 54 | MGD | | Value | | |
| i. Flow - design | Value | | Value | | Value | | | | | Value | | |
| j. Specific Conductivity | Value 3,100 | | Value | | Value | | 1 | umhos/cm | | Value | | |
| k. Temperature (winter) | Value | | Value | | Value | | | °C | | Value | | |
| l. Temperature (summer) | Value | | Value | | Value | | | °C | | Value | | |
| m. . pH | Min. 7.23 | Max | Min. 7.23 | Max. | | | 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 which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additonal details and requirements.

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a. believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc... | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| a. Bromide (24949-67-9) | ☒ | ☐ | 2.3 | | | | | | 1 | mg/L | | | | |
| b. Chlorine, Total Residual | ☒ | ☐ | 0.03 | | | | | | 1 | mg/L | | | | |
| c. Color | ☒ | ☐ | 25/7.26 | | | | | | 1 | Pt-Co | | | | |
| d. Fecal Coliform | ☒ | ☐ | 72 | | | | | | 1 | CFU/100 ml | | | | |
| e. Fluoride (16984-48-8) | ☒ | ☐ | 0.68 | | | | | | 1 | mg/L | | | | |
| f. Nitrate-Nitrite (as N) | ☒ | ☐ | 0.36 | | | | | | 1 | mg/L | | | | |

: Item VII-B Contd.

Facility ID. Number FL0002208 Outfall No. I-008

| 1. Pollutant and CAS No. (if available) | 2. Mark "X" | | 3. Effluent | | | | | | 4. Units | | 5. Intake (optional) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a .believed present | b. believed absent | a. Maximum Daily Value | | b. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| g. Nitrogen, Total Organic (as N) | ☒ | ☐ | 0.65 | | | | | | 1 | mg/L | | | | |
| h. Oil and grease | ☒ | ☐ | 5.0 | | 3.0 | | <1.0 | | 54 | mg/L | | | | |
| i. Phosphorus, Total (as P) (7723-14-0) | ☒ | ☐ | 0.31 | | | | | | 1 | mg/L | | | | |
| j. Radioactivity | | | | | | | | | | | | | | |
| (1) Alpha, Total | ☒ | ☐ | <22.4 | | | | | | 1 | pCi/L | | | | |
| (2) Beta, Total | ☒ | ☐ | <21.6 | | | | | | 1 | pCi/L | | | | |
| (3) Radium, Total | ☐ | ☒ | | | | | | | | | | | | |
| (4) Radium 226, Total | ☐ | ☒ | | | | | | | | | | | | |
| k. Sulfate (as $SO_4$) (14808-79-8) | ☒ | ☐ | 140 | | | | | | 1 | mg/L | | | | |
| l. Sulfide (as S) | ☐ | ☒ | | | | | | | | | | | | |
| m. Sulfite (as $SO_3$) (14265-45-3) | ☐ | ☒ | | | | | | | | | | | | |
| n. Surfactants | ☐ | ☒ | <0.181 | | | | | | 1 | mg/L | | | | |
| o. Aluminum, Total (7429-90-5) | ☐ | ☒ | | | | | | | | | | | | |
| p. Barium, Total (7440-39-3) | ☐ | ☒ | | | | | | | | | | | | |
| q. Boron, Total (7440-42-8) | ☒ | ☐ | 0.244 | | | | | | 1 | mg/L | | | | |
| r. Cobalt, Total (7440-48-4) | ☐ | ☒ | | | | | | | | | | | | |
| s. Iron, Total (7439-89-6) | ☒ | ☐ | 31 | | | | | | 1 | µg/L | | | | |
| t. Maagnesium, Total (7439-95-4) | ☒ | ☐ | 49 | | | | | | 1 | mg/L | | | | |
| u. Molybdenum, Total (7439-98-7) | ☒ | ☐ | 0.035 | | | | | | 1 | mg/L | | | | |
| v. Manganese, Total (7439-96-5) | ☐ | ☒ | | | | | | | | | | | | |
| w. Tin, Total (7440-31-5) | ☐ | ☒ | <0.008 | | | | | | 1 | mg/L | | | | |
| x. Titanium, Total (7440-32-6) | ☐ | ☒ | <0.0006 | | | | | | 1 | mg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-008

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2a for all GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2b for each pollutant you know or have reason to believe is present. Mark "X" in column 2c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one anlysis for that pollutnat if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4,dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| METALS, CYANIDE, AND TOTAL PHENOLS | | | | | | | | | | | | | | | |
| 1M. Antimony, Total (7440-36-0) | ☒ | ☐ | ☒ | <0.003 | | | | | | 1 | µg/L | | | | |
| 2M. Arsenic, Total (7723-14-0) | ☒ | ☐ | ☒ | <3.6 | | | | | | 1 | µg/L | | | | |
| 3M. Beryllium, Total (7440-41-7) | ☒ | ☐ | ☒ | <0.11 | | | | | | 1 | µg/L | | | | |
| 4M. Cadmium, Total (7440-43-9) | ☒ | ☐ | ☒ | <1.0 | | | | | | 1 | µg/L | | | | |
| 5M. Chromium, Total (7440-47-3) | ☒ | ☐ | ☒ | <0.19 | | | | | | 1 | µg/L | | | | |
| 6M. Copper, Total (7440-50-8) | ☒ | ☐ | ☒ | <2.0 | | | | | | 1 | µg/L | | | | |
| 7M. Lead, Total (7439-92-1) | ☒ | ☐ | ☒ | <1.6 | | | | | | 1 | µg/L | | | | |
| 8M. Mercury, Total (7439-97-6) | ☒ | ☐ | ☒ | 0.00169 | | | | | | 1 | µg/L | | | | |
| 9M. Nickel, Total (7440-02-0) | ☒ | ☐ | ☒ | <0.58 | | | | | | 1 | µg/L | | | | |
| 10M. Selenium, Total (7782-49-2) | ☒ | ☐ | ☒ | <3.7 | | | | | | 1 | µg/L | | | | |
| 11M. Silver, Total (7440-22-4) | ☒ | ☐ | ☒ | <0.82 | | | | | | 1 | µg/L | | | | |
| 12M. Thallium, Total (7440-28-0) | ☒ | ☐ | ☒ | <1.5 | | | | | | 1 | µg/L | | | | |
| 13M. Zinc, Total (7440-66-6) | ☒ | ☐ | ☒ | <10 | | | | | | 1 | µg/L | | | | |
| 14M. Cyanide, Total (57-12-5) | ☒ | ☐ | ☒ | <0.00230 | | | | | | 1 | µg/L | | | | |
| 15M. Phenols, Total | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | | | |
| | | | | | | | | | | | | | | | |
| 2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 1V. Acrolein (107-02-8) | ☒ | ☐ | ☒ | <0.303 | | | | | | 1 | µg/L | | | | |
| 2V. Acrylonitrile (107-13-1) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-008

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| GC/MS FRACTION - VOLATILE COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 3V. Benzene (71-43-2) | ☒ | ☐ | ☒ | <0.0300 | | | | | | 1 | µg/L | | | | |
| 4V. Bis (Chloromethyl) Ether (542-88-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5V. Bromoform (75-25-2) | ☒ | ☐ | ☒ | <0.138 | | | | | | 1 | µg/L | | | | |
| 6V. Carbon Tetrachloride (56-23-5) | ☒ | ☐ | ☒ | <0.0520 | | | | | | 1 | µg/L | | | | |
| 7V Chlorobenzene (108-90-7) | ☒ | ☐ | ☒ | <0.0790 | | | | | | 1 | µg/L | | | | |
| 8V. Chlorodi-bromomethane (124-8-1) | ☒ | ☐ | ☒ | <0.0660 | | | | | | 1 | µg/L | | | | |
| 9V. Chloroethane (74-00-3) | ☒ | ☐ | ☒ | <0.308 | | | | | | 1 | µg/L | | | | |
| 10V. 2-Chloro-ethylvinyl Ether (110-75-8) | ☒ | ☐ | ☒ | <0.745 | | | | | | 1 | µg/L | | | | |
| 11V. Chloroform (67-86-3) | ☒ | ☐ | ☒ | <0.0770 | | | | | | 1 | µg/L | | | | |
| 12V. Dichloro-bromomethane (75-24-4) | ☒ | ☐ | ☒ | <0.0860 | | | | | | 1 | µg/L | | | | |
| 13V. Dichloro-difluoromethane (75-71-8) | ☒ | ☐ | ☒ | <0.0940 | | | | | | 1 | µg/L | | | | |
| 14V. 1,1-Dichloroethane (75-34-3) | ☒ | ☐ | ☒ | <0.204 | | | | | | 1 | µg/L | | | | |
| 15V. 1,2-Dichloroethane (107-06-2) | ☒ | ☐ | ☒ | <0.0360 | | | | | | 1 | µg/L | | | | |
| 16V. 1,1-Dichloroethylene (75-35-4) | ☒ | ☐ | ☒ | <0.0590 | | | | | | 1 | µg/L | | | | |
| 17V. 1,2,-Dichloropropane (78-87-5) | ☒ | ☐ | ☒ | <0.0450 | | | | | | 1 | µg/L | | | | |
| 18V. 1,3-Dichloropropylene (542-75-6) | ☒ | ☐ | ☒ | <0.0500 | | | | | | 1 | µg/L | | | | |
| 19V. Ethylbenzene (100-41-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |
| 20V. Methyl Bromide (74-83-9) | ☒ | ☐ | ☒ | <0.132 | | | | | | 1 | µg/L | | | | |
| 21V. Methyl Chloride (74-87-3) | ☒ | ☐ | ☒ | <0.0480 | | | | | | 1 | µg/L | | | | |
| 22V. Methylene Chloride (74-98-2) | ☒ | ☐ | ☒ | <0.751 | | | | | | 1 | µg/L | | | | |
| 23V. 1,1,2,2-Tetra-chloroethane (79-34-5) | ☒ | ☐ | ☒ | <0.0690 | | | | | | 1 | µg/L | | | | |
| 24V. Tetrachloroethylene (127-18-4) | ☒ | ☐ | ☒ | <0.0840 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-008

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| GC/MS FRACTION - VOLATILE COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 25V. Toluene (108-88-3) | X | | X | <0.0350 | | | | | | 1 | µg/L | | | | |
| 26V. 1,2-Trans-Dichloroethylene (156-60-5) | X | | X | <0.107 | | | | | | 1 | µg/L | | | | |
| 27V. 1,1,2-Trichloroethane (71-55-6) | X | | X | <0.0380 | | | | | | 1 | µg/L | | | | |
| 28V. 1,1,2-Trichloroethane (79-00-5) | X | | X | <0.0750 | | | | | | 1 | µg/L | | | | |
| 29V. Trichloroethylene (79-01-6) | X | | X | <0.0500 | | | | | | 1 | µg/L | | | | |
| 30V. Trichloro-fluoromethane (75-69-4) | X | | X | <0.0700 | | | | | | 1 | µg/L | | | | |
| 31V. Vinyl Chloride (75-01-4) | X | | X | <0.0840 | | | | | | 1 | µg/L | | | | |
| [redacted] | | | | | | | | | | | | | | | |
| 1A. 2-Chlorophenol (95-57-8) | X | | X | <0.890 | | | | | | 1 | µg/L | | | | |
| 2A. 2,4-Dichlorophenol (120-83-2) | X | | X | <0.630 | | | | | | 1 | µg/L | | | | |
| 3A. 2,4-Dimethylphenol (105-67-9) | X | | X | <0.490 | | | | | | 1 | µg/L | | | | |
| 4A. 4,6-Dinitro-O-Cresol (534-53-1) | | | X | | | | | | | | | | | | |
| 5A. 2,4-Dinitrophenol (51-28-5) | X | | X | <0.160 | | | | | | 1 | µg/L | | | | |
| 6A. 2-Nitrophenol (88-75-5) | X | | X | <0.880 | | | | | | 1 | µg/L | | | | |
| 7A. 4-Nitrophenol (100-02-7) | X | | X | <0.700 | | | | | | 1 | µg/L | | | | |
| 8A P-Chloro-M-Cresol (59-50-7) | | | X | | | | | | | | | | | | |
| 9A Pentachlorophenol (87-86-5) | X | | X | | | | | | | 1 | µg/L | | | | |
| 10A Phenol (108-95-2) | X | | X | <0.58 | | | | | | 1 | µg/L | | | | |
| 11A 2,4,5-Trichloro-phenol (88-06-2) | X | | X | <0.680 | | | | | | 1 | µg/L | | | | |
| [redacted] | | | | | | | | | | | | | | | |
| 1B. Acenaphthene (63-32-9) | X | | X | <0.490 | | | | | | 1 | µg/L | | | | |
| 2B. Acenaphtylene (208-96-8) | X | | X | <0.640 | | | | | | 1 | µg/L | | | | |
| 3B. Anthracene (120-12-7) | X | | X | <0.500 | | | | | | 1 | µg/L | | | | |
| 4B. Benzidine (92-87-5) | X | | X | <0.260 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-008

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 5B. Benzo *(a)* Anthracene (56-55-3) | ☒ | ☐ | ☒ | <0.180 | | | | | | 1 | µg/L | | | | |
| 6B. Benzo *(a)* Pyrene (50-32-8) | ☒ | ☐ | ☒ | <0.280 | | | | | | 1 | µg/L | | | | |
| 7B. 3,4-Benzo-fluoranthene (205-99-2) | ☒ | ☐ | ☒ | <0.260 | | | | | | 1 | µg/L | | | | |
| 8B. Benzo *(ghi)* Perylene (191-24-2) | ☒ | ☐ | ☒ | <0.210 | | | | | | 1 | µg/L | | | | |
| 9B. Benzo *(k)* Fluoranthene (207-08-9) | ☒ | ☐ | ☒ | <0.480 | | | | | | 1 | µg/L | | | | |
| 10B. Bis *(2-Chloroethoxy)* Methane (111-91-1) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | | | |
| 11B. Bis *(2-chloroethyl)* Ether (111-44-4) | ☒ | ☐ | ☒ | <0.820 | | | | | | 1 | µg/L | | | | |
| 12B. Bis *(2-Chloroisopropyl)* Ether (102-60-1) | ☒ | ☐ | ☒ | <0.970 | | | | | | 1 | µg/L | | | | |
| 13B. Bis *(2-Ethylhexyl)* Phthalate (117-81-7) | ☒ | ☐ | ☒ | <1.32 | | | | | | 1 | µg/L | | | | |
| 14B. 4-Bromophenyl Phenyl Ether (101-55-3) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 15B Butyl Benzyl Phthalate (84-68-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 16B. 2-Chloronaphthalene (91-58-7) | ☒ | ☐ | ☒ | <0.550 | | | | | | 1 | µg/L | | | | |
| 17B. 4-Chlorophenyl Phenyl Ether (7005-72-3) | ☒ | ☐ | ☒ | <0.580 | | | | | | 1 | µg/L | | | | |
| 18B. Chrysene (218-01-9) | ☒ | ☐ | ☒ | <0.300 | | | | | | 1 | µg/L | | | | |
| 19B. Dibenzo *(a,h)* Anthracene (53-70-3) | ☒ | ☐ | ☒ | <0.160 | | | | | | 1 | µg/L | | | | |
| 20B. 1,2-Dichlorobenzene (95-50-1) | ☒ | ☐ | ☒ | <1.02 | | | | | | 1 | µg/L | | | | |
| 21B. 1,3-Dichlorobenzene (541-73-1) | ☒ | ☐ | ☒ | <1.24 | | | | | | 1 | µg/L | | | | |
| 22B. 1,4-Dichlorobenzene (106-46-7) | ☒ | ☐ | ☒ | <1.18 | | | | | | 1 | µg/L | | | | |
| 23B. 3,3'-Dichlorobenzidine (92-94-1) | ☒ | ☐ | ☒ | <0.310 | | | | | | 1 | µg/L | | | | |
| 24B. Diethyl Phthalate (84-66-2) | ☒ | ☐ | ☒ | <0.200 | | | | | | 1 | µg/L | | | | |
| 25B. Dimethyl Phthalate (131-11-3) | ☒ | ☐ | ☒ | <0.290 | | | | | | 1 | µg/L | | | | |
| 26B. Di-N-Butyl Phthalate (84-74-2) | ☒ | ☐ | ☒ | <0.240 | | | | | | 1 | µg/L | | | | |
| 27B. 2,4-Dinitrotoluene (121-14-2) | ☒ | ☐ | ☒ | <0.300 | | | | | | 1 | µg/L | | | | |
| 28B. 2,6-Dinitrotoluene (606-20-2) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | | | |

Facility ID. Number: FL0002208 Outfall No. I-008

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 29B. Di-N-Octyl Phthalate (117-84-0) | ☒ | ☐ | ☒ | <0.170 | | | | | | 1 | µg/L | | | | |
| 30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7) | ☒ | ☐ | ☒ | <0.660 | | | | | | 1 | µg/L | | | | |
| 31B. Fluoranthene (206-44-0) | ☒ | ☐ | ☒ | <0.280 | | | | | | 1 | µg/L | | | | |
| 32B. Fluorene (86-73-7) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | | | |
| 33B. Hexachlorobenzene (118-74-1) | ☒ | ☐ | ☒ | <0.520 | | | | | | 1 | µg/L | | | | |
| 34B. Hexachlorobutadiene (87-68-3) | ☒ | ☐ | ☒ | <0.530 | | | | | | 1 | µg/L | | | | |
| 35B. Hexachlorocyclopentadiene (77-47-4) | ☒ | ☐ | ☒ | <0.690 | | | | | | 1 | µg/L | | | | |
| 36B. Hexachloroethane (67-72-1) | ☒ | ☐ | ☒ | <0.810 | | | | | | 1 | µg/L | | | | |
| 37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5) | ☒ | ☐ | ☒ | <0.150 | | | | | | 1 | µg/L | | | | |
| 38B. Isophorone (78-59-1) | ☒ | ☐ | ☒ | <0.680 | | | | | | 1 | µg/L | | | | |
| 39B. Naphthalene (91-20-3) | ☒ | ☐ | ☒ | <0.700 | | | | | | 1 | µg/L | | | | |
| 40B. Nitrobenzene (98-95-9) | ☒ | ☐ | ☒ | <0.770 | | | | | | 1 | µg/L | | | | |
| 41B N-Nitrosodimethylamine (62-75-9) | ☒ | ☐ | ☒ | <1.11 | | | | | | 1 | µg/L | | | | |
| 42B. N-Nitrosodi-N-Propylamine (621-64-7) | ☒ | ☐ | ☒ | <1.10 | | | | | | 1 | µg/L | | | | |
| 43B. N-Nitro-sodiphenylamine (86-30-6) | ☒ | ☐ | ☒ | <0.380 | | | | | | 1 | µg/L | | | | |
| 44B Phenanthrene (85-01-8) | ☒ | ☐ | ☒ | <0.450 | | | | | | 1 | µg/L | | | | |
| 45B. Pyrene (129-00-0) | ☒ | ☐ | ☒ | <0.220 | | | | | | 1 | µg/L | | | | |
| 46B. 1,2,4-Trichlorobenzene (120-82-1) | ☒ | ☐ | ☒ | <1.27 | | | | | | 1 | µg/L | | | | |
| 1P. Aldrin (309-00-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 2P. -BHC (319-84-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 3P -BHC (319-85-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 4P. -BHC (58-89-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 5P. -BHC (319-86-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

Facility ID. Number: FL0002208 Outfall No. I-008

| 1. Pollutant and CAS No. (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. Max. 30-day Value (if available) | | c. Long Term Avg. Value (if available) | | d. No. of Analyses | a. Conc. | b. Mass | a. Long Term Avg. Value | | b. No. of Analyses |
| | | | | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | (1) Conc. | (2) Mass | | | | (1) Conc. | (2) Mass | |
| 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. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 12P. -Endosulfan (115-29-7) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 13P. Endosulfan Sulfate (1031-07-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 14P. Endrin (72-20-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 15P. Endrin Aldehyde (7421-92-4) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 16P. Heptachlor (76-44-8) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 17P. Heptachlor Epoxide (1024-57-3) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 18P. PCB-1242 (53469-21-9) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 19P. PCB-1254 (11097-69-1) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 20P. PCB-1221 (11104-28-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 21P. PCB-1232 (11141-16-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 22P. PCB-1248 (12672-29-6) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 23P. PCB-1260 (11096-82-5) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 24P. PCB-1016 (12674-11-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |
| 25P. Toxaphene (8001-35-2) | ☐ | ☐ | ☒ | | | | | | | | | | | | |

FORM 2F

# FORM 2F

# APPLICATION FOR PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY

Facility I.D. Number: FL0002208

Please type or print in black ink. If additional space is needed for your answer, use plain sheets and attach to the application form.

**I. Outfall Location:**

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

| A. Outfall Number (list) | B. Latitude | | | C. Longitude | | | D. Receiving Water (Name) |
|---|---|---|---|---|---|---|---|
| I-06B | 27 | 20 | 52 | 80 | 14 | 57 | Plant Intake Canal |
| I-06C | 27 | 20 | 53 | 80 | 14 | 30 | Mangrove Impoundment 8E |
| I-009 | 27 | 20 | 52 | 80 | 14 | 51 | Plant Intake Canal |
| I-009 | 27 | 20 | 57 | 80 | 14 | 40 | Plant Discharge Canal |
| | | | | | | | |

I-009 discharges to more than one location from each unit via portable pumps during extreme weather.

**II. 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 stormwater or wastewater treatment equipment or practices or any other environmental programs which 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?

| 1. Identification of Conditions, Agreements | 2. Affected Outfalls | | 3. Brief Description of Project | 4. Final Compliance Date | |
|---|---|---|---|---|---|
| | No. | Source of Discharge | | a. required | b. projected |
| N/A | | | | | |
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B. You may attach additional sheets describing any additional water pollution or other environmental projects which may affect your discharge that you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

**III. Site Drainage Map:**

Attach a site map showing topography depicting the facility including each of its intake and discharge structures; the drainage area of each stormwater outfall; paved areas and buildings within the drainage area of each stormwater outfall; each known past or present areas used for outdoor storage or disposal of significant materials; each existing structural control measure to reduce pollutants in stormwater runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units; each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive stormwater discharges from the facility. Show hazardous waste storage or disposal areas that do not require a RCRA permit separate from those which do require a permit.

Refer to Figure 2 - Site Plan and Outfall Location Map

**IV. Narrative Description of Pollutant Sources:**

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces, including paved areas and building roofs, drained to the outfall, and an estimate of the total surface area drained by the outfall.

| Outfall No. | Area of Impervious Surface (units) | Total Area Drained (units) | Outfall No. | Area of Impervious Surface (units) | Total Area Drained (units) |
|---|---|---|---|---|---|
| I-06B | 3,000 sq. ft. | 25,600 sq. ft. | 1-06C | 596,800 sq. ft. | 622,900 sq. ft. |
| I-009 | 8,800 sq. ft. | 120,000 sq. ft. | | | |
| | | | | | |
| | | | | | |

B. Provide a narrative description of significant materials that are currently, or in the past three years have been, treated, stored or disposed in a manner that allows exposure to stormwater; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact with stormwater runoff; materials loading and access areas; and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

Refer to Supplemental Information B in the Attachments.

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in stormwater runoff; and a description of the treatment the stormwater receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

| Outfall No. | Treatment | Table 2F-1 Code |
|---|---|---|
| I-06B | Area is sodded and paved for the reduction of solids. Former oil storage area, no longer used for oil storage. area. No current industrial activities. | 4-B |
| I-06C | Stormwater is routed to a nearby retention area for treatment as approved by SFWMD and FDEP. | 1-V, 1-Y, 4-A |
| I-009 | Stormwater is pumped to both the Intake and Discharge canals during extreme weather. | 4-A |

**V. Non-stormwater Discharges:**

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges, and that all non-stormwater discharges from these outfall(s) are identified in either an accompanying DEP Form 62-620.910(5) or (7) (Forms 2CS or 2ES) application for the outfall.

| Name and Official Title (type or print) | Signature | Date Signed |
|---|---|---|
| Christopher Costanzo, Vice President, St. Lucie Power Plant | | |

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

On Monday, July 27, 2015 at 1:00 pm, a visual inspection during dry weather was made by Melissa Fagan, P.E. and Glenn Carwell (Geosyntec Consultants, Inc.) of these outfalls and contributing drainage areas to verify no non-stormwater discharges were present.

Facility I.D. Number: FL0002208

**VI. Significant Leaks or Spills:**

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

Only one reportable spill has occurred in the last three years. On March 18, 2016, approximately one gallon of hydrazine spilled in the chemical injection area of the Turbine Building with a small amount entering the drain to the West Basin. Zeen clean was used to neutralize the spill, and a second isolation valve installed to prevent another spill from this equipment.

**VII. Discharge Information:**

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided. Tables VII-A, VII-B, and VII-C are included on separate sheets numbered VII-1 and VII-2.

E. Potential discharges not covered by analysis - is any toxic pollutant listed in Table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or by-product?

☐ Yes (list all such pollutants below) ☒ No (go to section VIII)

**VIII. 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 a receiving water in relation to your discharge within the last 3 years?

☒ Yes (list results below) ☐ No (go to Section IX)

In accordance with the permit requirements for Outfall D-001, Chronic Whole Effluent Toxicity, 7-Day IC25 Mysidopsis bahia and Menidia beryllina tests have been performed semi-annually by Hydrosphere Research (Alachua, FL) within the last three years. The results indicate that the samples provided did not exhibit chronic toxicity to either species. A copy of the most recent test report is included in the Attachments.

**IX. Contract Analysis Information**

Were any of the analysis reported in item VII 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 Section X)

| A. Name | B. Address | C. Area Code & Phone No. | D. Pollutants Analyzed |
|---|---|---|---|
| FPL Central Lab #E56078 | 6001 A Village Blvd | 561-640-2010 | COD, nitrate, nitrite, phosphorus |
| | West Palm Beach, FL 33407 | | oil and grease, TKN, TSS |
| Pace Analytical | 3610 Park Central Blvd North | 954-582-4300 | BOD5 |
| | Pompano Beach, FL 33064 | | |

Facility I.D. Number: FL0002208

**X-A. CERTIFICATIONS FOR NEW OR MODIFIED FACILITIES**

I certify that the engineering features of this pollution control project have been designed by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signature

Company Name:

Name (please type):

Address:

(Affix Seal)

Florida Registration No.:

Telephone No.:

Date:

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

Name & Official Title (type or print)

Signature

Telephone No. (area code & no.)

Date Signed

**X-B. CERTIFICATIONS FOR PERMIT RENEWALS**

I certify that the engineering features of this pollution control project have been examined by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department.

Signature

Geosyntec Consultants, Inc.

Company Name:

Melissa Fagan, P.E.

Name (please type):

Address: 1200 Riverplace Blvd, Suite 710, Jacksonville, FL 32207

(Affix Seal)

Florida Registration No.: 73087

Telephone No.: 904-858-1818

Date: 3/8/16

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

Christopher Costanzo, Vice President, St. Lucie Power Plant

Name & Official Title (type or print)

Christopher R Costanzo

Signature

(772) 467-7100

Telephone No. (area code & no.)

3/29/16

Date Signed

Facility I.D. Number: FL0002208

**VII. Discharge Information (Continued from page 2F-15 of Form 2F)** Outfall I-06B Former Oil Storage Area

**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.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| Oil and Grease | <4.1 mg/L | N/A | <4.1 mg/L | N/A | 1 | |
| Biochemical Oxygen Demand ($BOD_5$) | <4.0 mg/L | N/A | <4.0 mg/L | N/A | 1 | |
| Chemical Oxygen Demand (COD) | 19 mg/L | N/A | 19 mg/L | N/A | 1 | |
| Total Suspended Solids (TSS) | <3.0 mg/L | N/A | <3.0 mg/L | N/A | 1 | |
| Total Kjeldahl Nitrogen | <0.75 mg/L | N/A | <0.75 mg/L | N/A | 1 | |
| Nitrate + Nitrite Nitrogen | 0.023 mg/L | N/A | 0.023 mg/L | N/A | 1 | |
| Total Phosphorus | 0.050 mg/L | N/A | 0.050 mg/L | N/A | 1 | |
| pH | Minimum | Maximum | Minimum | Maximum | | |

**Part B** - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's wastewater permit for its wastewater effluent if the facility is operating under an existing wastewater permit. Complete one table for each outfall. See instructions for additional details and requirements.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| N/A | | | | | | |
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Facility I.D. Number: FL0002208

**VII. Discharge Information (Continued from Table VII on page VII - 1 of Form 2F)** Outfall I-06B Former Oil Storage Area

**Part C** - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reasons to believe is present. Complete one table for each outfall. See instructions for additional details.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| N/A | | | | | | |
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**Part D** - Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

| 1. Date of Storm Event | 2. Duration of Storm Event (in minutes) | 3. Total rainfall during storm event (in inches) | 4. Number of hours between beginning of storm measured and end of previous measurable rain event | 5. Maximum flow rate during rain event (specify units) | 6. Total flow from rain event (specify units) | 7. Comments |
|---|---|---|---|---|---|---|
| 01/06/16 | 360 | 1.02 | 72 | 42.5 gpm | 0.015 MG | |

Provide a description of the method of flow measurement or estimate.

Part D.5. Maximum flow was determined from total flow averaged for duration of rainfall event, which was at a relatively constant rate.
Part D.6. Total flow was estimated from area of drainage x rainfall x coefficient of runoff (0.98 for impervious area; 0.49 for pervious area).

Facility I.D. Number: FL0002208

**VII. Discharge Information (Continued from page 2F-15 of Form 2F)** Outfall I-06C East Parking Lot

**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.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| Oil and Grease | <4.1 mg/L | N/A | <4.1 mg/L | N/A | 1 | |
| Biochemical Oxygen Demand ($BOD_5$) | <2.00 mg/L | N/A | <2.00 mg/L | N/A | 1 | |
| Chemical Oxygen Demand (COD) | 28 mg/L | N/A | 28 mg/L | N/A | 1 | |
| Total Suspended Solids (TSS) | <12 mg/L | N/A | <12 mg/L | N/A | 1 | |
| Total Kjeldahl Nitrogen | <0.79 mg/L | N/A | <0.79 mg/L | N/A | 1 | |
| Nitrate + Nitrite Nitrogen | 0.34 mg/L | N/A | 0.34 mg/L | N/A | 1 | |
| Total Phosphorus | 0.23 mg/L | N/A | 0.23 mg/L | N/A | 1 | |
| pH | Minimum | Maximum | Minimum | Maximum | | |

**Part B** - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's wastewater permit for its wastewater effluent if the facility is operating under an existing wastewater permit. Complete one table for each outfall. See instructions for additional details and requirements.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| N/A | | | | | | |
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Facility I.D. Number: FL0002208

**VII. Discharge Information (Continued from Table VII on page VII - 1 of Form 2F)** Outfall I-06C East Parking Lot

**Part C** - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reasons to believe is present. Complete one table for each outfall. See instructions for additional details.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| N/A | | | | | | |
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**Part D** - Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

| 1. Date of Storm Event | 2. Duration of Storm Event (in minutes) | 3. Total rainfall during storm event (in inches) | 4. Number of hours between beginning of storm measured and end of previous measurable rain event | 5. Maximum flow rate during rain event (specify units) | 6. Total flow from rain event (specify units) | 7. Comments |
|---|---|---|---|---|---|---|
| 01/06/16 | 360 | 1.02 | 72 | 1,040 gpm | 0.374 MG | |

Provide a description of the method of flow measurement or estimate.

Part D.5. Maximum flow was determined from total flow averaged for duration of rainfall event, which was at a relatively constant rate.
Part D.6. Total flow was estimated from area of drainage x rainfall x coefficient of runoff (0.98 for impervious area; 0.49 for pervious area).

Facility I.D. Number: FL0002208

**VII. Discharge Information (Continued from page 2F-15 of Form 2F)**

## Outfall I-009 Condenser Cooling Water Pits

**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.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| Oil and Grease | NK | N/A | | N/A | 0 | None - no discharge |
| Biochemical Oxygen Demand ($BOD_5$) | NK | N/A | | N/A | 0 | None - no discharge |
| Chemical Oxygen Demand (COD) | NK | N/A | | N/A | 0 | None - no discharge |
| Total Suspended Solids (TSS) | NK | N/A | | N/A | 0 | None - no discharge |
| Total Kjeldahl Nitrogen | NK | N/A | | N/A | 0 | None - no discharge |
| Nitrate + Nitrite Nitrogen | NK | N/A | | N/A | 0 | None - no discharge |
| Total Phosphorus | NK | N/A | | N/A | 0 | None - no discharge |
| pH | Minimum NK | Maximum NK | Minimum | Maximum | | None - no discharge |

**Part B** - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's wastewater permit for its wastewater effluent if the facility is operating under an existing wastewater permit. Complete one table for each outfall. See instructions for additional details and requirements.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| N/A | | | | | | |
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Facility I.D. Number: FL0002208

**VII. Discharge Information (Continued from Table VII on page VII - 1 of Form 2F)** Outfall I-009 Condenser Cooling Water Pits

**Part C** - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reasons to believe is present. Complete one table for each outfall. See instructions for additional details.

| Pollutant and CAS Number (if available) | Minimum Values (include units) | | Average Values (include units) | | # of Storm Events Sampled | Sources of Pollutants |
|---|---|---|---|---|---|---|
| | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | Grab Sample Taken During First 30 Minutes | Flow-weighted Composite | | |
| N/A | | | | | | |
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**Part D** - Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

| 1. Date of Storm Event | 2. Duration of Storm Event (in minutes) | 3. Total rainfall during storm event (in inches) | 4. Number of hours between beginning of storm measured and end of previous measurable rain event | 5. Maximum flow rate during rain event (specify units) | 6. Total flow from rain event (specify units) | 7. Comments |
|---|---|---|---|---|---|---|
| None | | | | | | Discharges are expected only during intense storm events, i.e. Tropical Storms. |

Provide a description of the method of flow measurement or estimate.

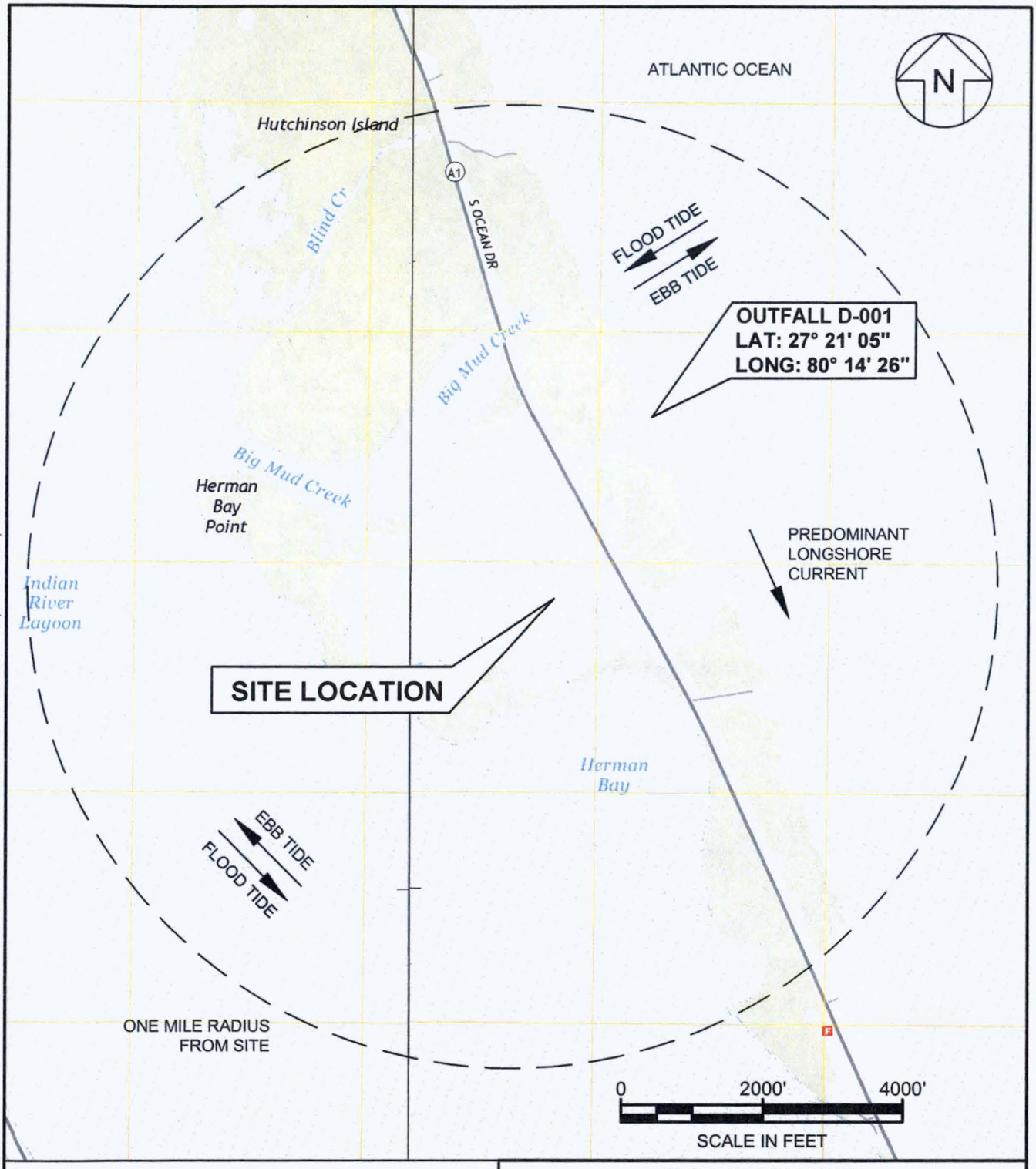
No storm water discharges have occurred from these pits since the permit was modified to add this outfall November 18, 2014. Therefore, no sample analytical data and storm event data are provided in Parts A and D. If a discharge occurs, flow will be measured by pump flow design and run times.

ATTACHMENTS

- Figures 1 though 3
- Supplemental Information – A (Form 2CS)
- Supplemental Information – B (Form 2F)
- Laboratory Results for Intake and Outfalls D-001, I-003, I-005, I-008, I-06B and I-06C
- Safety Data Sheet – Poly Acrylic Acid
- List of Chemicals used
- Copy of Uprate Completion Notice to FDEP
- Copy of 2014 Progress Report to FDEP on Stormwater Pollution Prevention Plan
- Mixing Zone Justification for TRO

FIGURES

1. SITE LOCATION
2. SITE PLAN AND OUTFALL LOCATION MAP
3. INDUSTRIAL WASTEWATER PROCESS FLOW DIAGRAM




NOTES:

1. FLOOD AND EBB TIDE FLOW DIRECTIONS ESTIMATED DUE TO FT. PIERCE INLET IN CONTRAST TO ST. LUCIE INLET.

REFERENCE:

1. U.S.G.S. 24 MINUTE QUADRANGLES ANKONA AND EDEN, FLORIDA, DATED 2015.

**SITE LOCATION MAP**

FLORIDA POWER & LIGHT
ST. LUCIE POWER PLANT
6501 S. OCEAN DRIVE, JENSEN BEACH, FLORIDA

Geosyntec consultants

JACKSONVILLE, FL | MARCH 2016

Figure: 1

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N

LEGEND:

| | |
|---|---|
| 1 | No. D-001 |
| 3 | LOW VOLUME WASTE - LIQUID RADIATION WASTE No. I-003 |
| 5 | LOW VOLUME WASTE - STEAM GENERATOR BLOWDOWN No. 1-008 |
| 6 | NON-EQUIPMENT STORMWATER DRAINS No. I-006B AND No. I-006C |
| 7 | INTAKE SCREEN WASH No. I-007 |
| 8 | SOUTHEAST EVAPORATION/PERCOLATION BASIN OUTFALL No. I-008 |
| 9 | STORMWATER FROM CONDENSER PITS I-009 |
| 10 | SATELLITE HAZARDOUS WASTE ACCUMULATION AREAS |
| 11 | PRIMARY HAZARDOUS WASTE ACCUMULATION AREA |
| 12 | EVAPORATION/PERCOLATION BASINS |
| 13 | EMERGENCY COOLING WATER INTAKE FROM BIG MUD CREEK |
| → | WATER FLOW DIRECTION |

REFERENCE:

1. AERIALS PROVIDED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION WEB SITE, DATED 2012.

0 500' 1000'

SCALE IN FEET

**SITE PLAN AND OUTFALL LOCATION MAP**

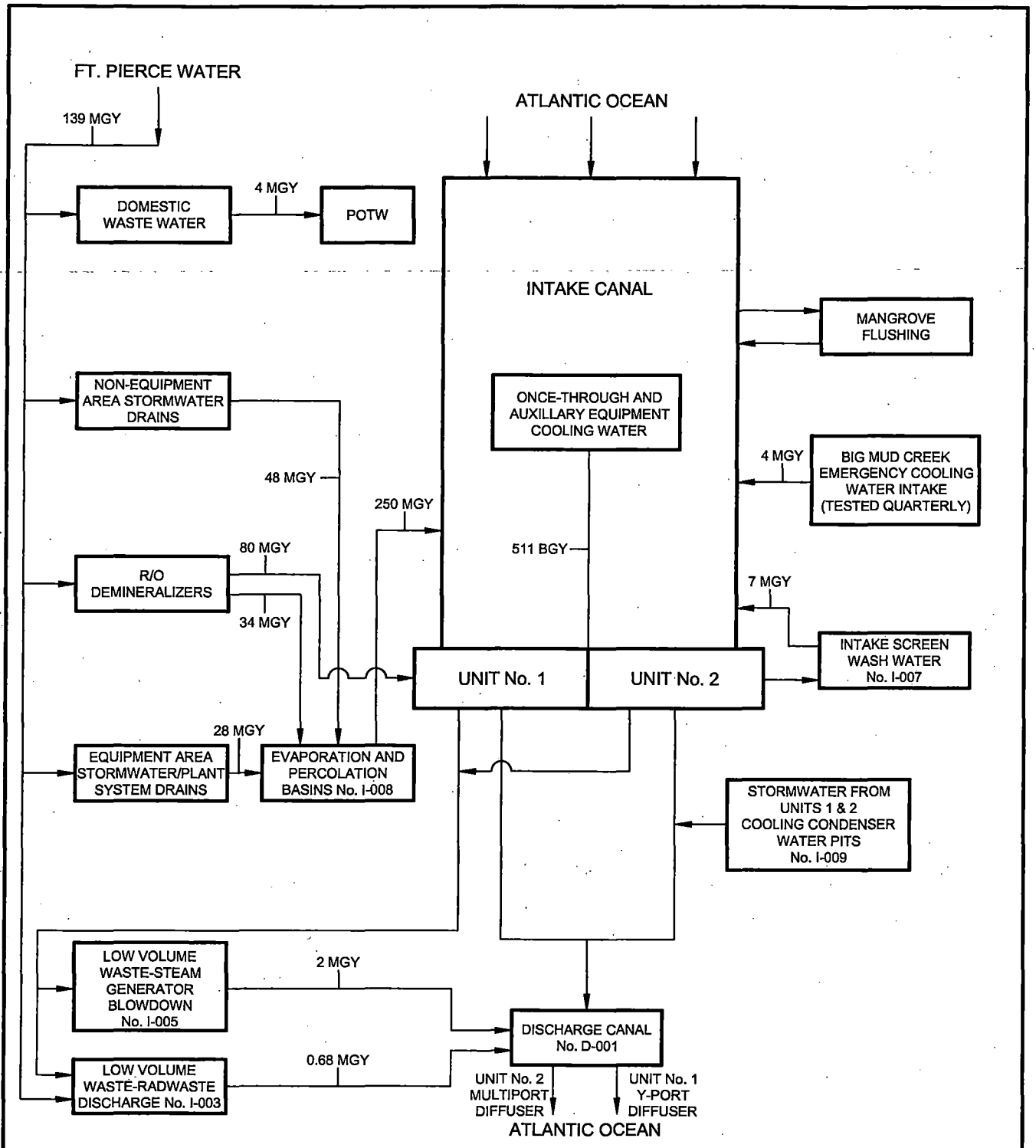
FLORIDA POWER & LIGHT
ST. LUCIE POWER PLANT
6501 S. OCEAN DRIVE, JENSEN BEACH, FLORIDA

Geosyntec consultants

JACKSONVILLE, FL | MARCH 2015

Figure: 2

P:\JAX-CAD\FLORIDA POWER AND LIGHT\ST LUCIE POWER PLANT\NPDES PERMIT RENEWAL 2016 - FE2542\FIGURES\FE2542-A101.DWG (11 March 2016) rmuise




NOTES:

1. MGY - MILLION GALLONS PER YEAR.
2. BGY - BILLION GALLONS PER YEAR.

**INDUSTRIAL WASTEWATER PROCESS FLOW DIAGRAM**
FLORIDA POWER & LIGHT
ST. LUCIE POWER PLANT
6501 S. OCEAN DRIVE, JENSEN BEACH, FLORIDA

Geosyntec consultants

Figure: 3

JACKSONVILLE, FL | MARCH 2016

P:\JAX-CAD\FLORIDA POWER AND LIGHT\ST LUCIE POWER PLANT\NPDES PERMIT RENEWAL 2016 - FE2542\FIGURES\FE2542-A101.DWG (11 March 2016) rmuise

# SUPPLEMENTAL INFORMATION – A

(FORM 2CS)

# ATTACHMENT A
# SUPPLEMENTAL INFORMATION FOR FORM 2CS

**FORM 2CS, ITEM IV.B. (page 2CS-17)**
**GENERAL DESCRIPTION OF MAJOR PROCESSES**
**AND ASSOCIATED WASTE STREAMS**

The St. Lucie Power Plant is located on Hutchinson Island in St. Lucie County, at latitude 27°20'54" and longitude 80°14'44", approximately 12 miles north of Stuart, Florida. The 1,132-acre plant site is located near the midpoint of Hutchinson Island, as shown on Figure 1.

The plant site contains two nuclear power units (Unit 1 and Unit 2), both 1,000-megawatt (MW) net facilities using pressurized water reactors. Construction, design, and operation are relatively the same for both units. Both units share common once-through cooling water intake and discharge canals. Separate ocean intake and discharge pipes withdraw from and discharge to the Atlantic Ocean via the canals. Individual ocean discharge pipes may be isolated independently depending on the number of units operating. Refer to Figure 2 for the locations of the outfalls.

There are three ocean intake structures for Unit 1 and Unit 2. The intake structures in the Atlantic Ocean contain vertical sections to prevent sanding and velocity caps to minimize entrainment of marine organisms. Horizontal entrance velocities at the velocity cap boundaries are estimated to be approximately 0.4 foot per second (fps) for the two 12-diameter intake pipes and 1 fps for the 16-ft intake pipe.

The wastewater discharges from the St. Lucie Power Plant include once-through cooling water, steam generator blowdown, liquid radiation waste, intake screen wash wastewater, and stormwater associated with industrial activity, which includes a discharge location from the Southeast Evaporation Basin. Equipment area floor drains are routed to oil water separation systems prior to ultimate discharge to the East and West stormwater basins. The West Basin and East Basin flow into the South Basin, which overflows to the Southeast Basin. The Southeast Basin discharges to the Intake Canal via Outfall I-008. Figure 2 shows the location of these basins as well as the outfall discharge points.

**Mangrove Flushing Water**

In order to enhance the growth of isolated mangrove trees located on the east side of the plant and bounded by the plant discharge canal, State Road A1A, and the plant intake canal, seawater is pumped from the intake canal on a seasonal basis onto the discharge canal side of the mangrove area. This seawater is allowed to gravity flow back toward the intake canal. At the discharge pipe into the intake canal, stop logs are used to regulate water level in the mangrove area and simulate

flushing that would naturally occur due to tidal action. The flushing and water level control are optimized to help control mosquito growth. At the proper time, the stop logs are removed and the uncontaminated seawater is returned to the intake canal. In a letter from Bruce Barrett, dated August 11, 1987, EPA concurred that "... such a discharge would not require an NPDES permit."

**Once Through Cooling Water and Auxiliary Cooling Water (D-001)**

The plant uses a total of eight circulating water pumps (four per unit) having a design total capacity of 974,600 gallons per minute (gpm) or 1.4 billion gallons per day (BGD) to supply once-through cooling water to Units 1 and 2. The once-through condenser and auxiliary cooling water systems discharge to the Atlantic Ocean via pipelines. One discharge pipe is equipped with a Y-port diffuser that discharges approximately 1,500 feet (ft.) from shore. The other discharge pipe has a multi-port diffuser (58 ports), each port being 16 inches in diameter. The length of the multi-port diffuser is 1,416 ft. starting 1,959 ft. from shore and having a 24-ft. spacing between ports. The diffuser manifold is optimized with ports alternately oriented north and south at an angle of 25 degrees from the manifold. The discharge of heated water through the Y-port and multi-port diffusers ensures distribution over a wide area and enables a more rapid and efficient mixing with ambient water.

Two other minor effluent streams are the refueling water storage tank and the non-aerated water hold-up tanks. These two effluent streams are discharged to the radwaste system for further reduction of radioactivity. The refueling water storage tank, whose contents are used for safety injection and refueling water, contains 500,000 gallons of water with a 2,000 parts per million (ppm) boron content. There are four 40,000-gallon non-aerated water storage tanks per unit that hold reactor coolant bleed-off or drain down water. Both of these discharges occur infrequently.

The once-through cooling water system is chlorinated at a maximum of 2 hours per day per unit for micro- and macro-biofouling control. FPL uses mechanical condenser tube cleaning systems on both units. These systems have sponge balls that are approximately 23 millimeters (mm) in diameter, which are forced through the condenser tubes. Approximately 1,800 sponge balls are applied at one time per condenser water box. There are four water boxes per condenser on each unit. The sponge balls scrub the tubes as they pass through. Downstream of the condensers, the sponge balls are captured by a ball strainer. The ball strainers have grills with 5-mm spacing that prevent the balls from passing through the water box outlets and into the plant discharge system. The ball strainer grills funnel the sponge balls to pipes on the side of the strainer housings where the balls are sucked out of the circulating water flow by a recirculating pump. The sponge balls pass through the recirculating pump to the ball collectors.

Ft. Pierce City water is used for seal water for the recirculation pumps at approximately 3.5 gpm.

The sponge balls normally pass through the ball collectors and are returned to the inlet side of the condensers for another cycle through the condensers. When the sponge balls begin to wear out, they are collected in the ball collector. The recirculating pump is shut down and the worn out balls are removed and new balls added to the ball collector.

The facility employs best management practices for the control of sponge ball loss to the environment from the tube cleaning systems. For example, sponge balls are inventoried and sponge ball loss to the environment is reported to FDEP on an annual basis.

In addition to once-through cooling, up to 58,000 gpm (84 MGD) of ocean cooling water is pumped using auxiliary cooling water pumps through the auxiliary equipment heat exchangers. The solution being cooled by these heat exchangers, which in turn directly cools in-plant machinery, contains approximately 200 to 500 ppm of sodium molybdate, 200 to 500 ppm of sodium nitrite, and 10 to 30 ppm of tolytriazole. Normally this part of the system is closed, recirculating similar to an automobile cooling system. If a leak occurred in a heat exchanger, a small amount of the molybdate solution could be released. The water level in this system is carefully monitored so leaks can be identified and repairs made. Due to the large volume being discharged to the common discharge canal through the "open" part of the cooling water system, it is anticipated that these minor leaks would not be detectable at the heat exchanger outlet and consequently would not be detectable at the POD in the discharge canal. Low-level chlorination is applied to the auxiliary cooling water.

**Liquid Radwaste System Batch Releases: I-003**

The flow from the radwaste treatment system is intermittent. The system permits a maximum estimated flow of 250 gpm. This waste stream originates from various maintenance and operational activities that take place in the reactor auxiliary building (RAB) and is processed for radioactive reduction by ion exchange resins and low micron filtration systems. Effluent from this system rarely contains any metal cleaning wastes and is discharged to the Intake Canal.

**Steam Generator Blowdown: I-005**

High purity make-up water is generated at the facility by a water treatment plant using a high efficiency reverse osmosis process and ultraviolet TOC destruct process. Much of this high quality water is routed to the secondary system and steam generators as makeup for the water/steam cycle. Caustic soda is infrequently added for pH control, and hydrazine is added for oxygen removal. Undesirable constituents such as chlorides from condenser leaks can impact the steam generator water. Strict operating specifications require that suspended and dissolved solids be maintained at very low levels; therefore, to keep the constituents at these low levels, a continuous steam generator

blowdown is required. This blowdown is either recovered and recirculated or routed to the discharge canal. The concentration of hydrazine in these discharges during plant operation normally ranges from 25 parts per billion (ppb) to 2 ppm.

During overhauls and/or refueling outages the steam generators, feed water systems, and/or condensers may be placed in a static mode where the internal metal surfaces of these components must be protected from corrosion. The typical method used is to fill the system with a hydrazine/carbohydrazide/ demineralized water solution. This solution, which contains up to 300 ppm hydrazine, must then be drained and discharged to the plant's discharge canal. In addition, various amine solutions such as ethanolamine (ETA) and dimethylamine (DMA) are introduced for pH control of the condensate and feed water. These discharges normally occur approximately every 18 months per unit during refueling operations or during any periods of extended maintenance.

FPL monitored the discharge canal extensively at EPA's request from 1989 to 1993 during periods of "wet lay-up" discharge. Due to the rapid breakdown of hydrazine upon exposure to oxygen in the environment and through dilution, the hydrazine concentrations were found to be between <5 ppb and 16 ppb at the POD with most of the values being <5 ppb (the detection limit for hydrazine).

**Intake Traveling Screen Wash Water: I-007**

Two 1,060-gpm capacity traveling screen wash pumps for both Units 1 and 2 at the intake structure withdraw ocean water for traveling screen cleaning. The traveling screens are used to prevent debris from reaching the condensers. One pump (the other standby) is normally in operation on each unit for 2 hours per day, at an average wash flow of 900 gpm per unit. The wash water is returned to the intake canal through a collection sump and drain system.

**Emergency Storm Water Outfall from Condenser Component Cooling Water Pits: I-009**

FDEP modified this permit in November 2014 to add this intermittent discharge from each unit's condenser cooling water pits to the plant intake and discharge canals. This discharge is used when rainfall runoff results in water levels that could inundate electrical equipment. The discharge is operated via a removable pumps that will only operate when a high water level exists in the condenser pits. During extreme severe weather events, the pits are checked daily and when levels are such that a discharge becomes necessary, the pumps will be activated, and the discharge is monitored for flow rate and required chemical parameters. Based on past experience and average rainfall conditions, this discharge is extremely severe weather-dependent and is estimated to occur very rarely, less than once per year.

**Other Processes Generating Wastewater**

There are two waste streams at the St. Lucie Power Plant that are not a function of electrical generation operating activities:

- Non-equipment area stormwater runoff
- Outfall from Southeast Evaporation Basin

**Non-equipment Area Stormwater Runoff: I-006**

Two non-equipment area stormwater discharges exist to the cooling water intake canal or mangrove impoundments. These streams originate from areas of the plant such as roadways, parking lots, dry cask storage pad and building storm drains.

**Outfall from Southeast Evaporation/Percolation Basin: I-008**

FPL maintains an intermittent discharge from the Southeast Evaporation/Percolation Basin to the plant intake canal. This discharge is used when rainfall runoff results in basin water levels that would impede plant operating equipment. The discharge is operated via a valve that is only operated when a high water level exists in the basin. A staff gauge in the basin is checked daily and when levels are such that a discharge becomes necessary, the valve is opened, and the discharge is monitored for flow rate and required chemical parameters.

**SIGNIFICANT MATERIALS**

The following narrative excludes those areas and facilities included in Form 2CS permit applications. For the remaining plant areas, no significant materials are currently, or in the past 5 years have been, treated, stored, or disposed in a manner that would be exposed to storm water. Company management practices to minimize contact of significant materials with storm water runoff include the storage of chemicals, pesticides, fertilizers, and herbicides in original containers within buildings and sheds. In addition, used oil is collected and stored in a storage tank. Liquid hazardous wastes are collected in sealed drums at satellite accumulation areas. Once the drums are full, they are relocated to the hazardous material storage area, which has secondary containment.

Pesticides, herbicides, and fertilizers are used at the facility on an as-needed basis in accordance with the manufacturers' guidelines.

**FORM 2CS, ITEM IV.D. (page 2CS-19)**

*Item IV.D. Describe practices to be followed to ensure adequate wastewater treatment during emergencies such as power loss and equipment failures causing shutdown of pollution abatement equipment of the proposed/permitted facilities.*

In the event of a power loss resulting in the shutdown of pollution abatement equipment or the failure of such equipment, the facility is capable of preventing the discharge of pollutants offsite.

Most treatment system components are "passive" in nature and are, therefore, not impacted by power failures. Pumps are the exception. In many instances, dual pumps are used for system redundancy. In addition, the plant maintenance department staff is "on-call" 24 hours a day for maintenance and repair of equipment.

All power losses to the facility are managed with a high priority. Any loss of power is usually brief and should not affect wastewater treatment to any significant degree.

**FORM 2CS, ITEM IV.E. (page 2CS-19)**

*Item IV.E. List the method(s) and location(s) of flow measurement.*

A listing of the methods of flow calculation for the outfalls that discharge to surface waters is shown below.

| Outfall | Purpose | Flow Measurement Method |
|---|---|---|
| D-001 | Condenser Once-Through and Auxiliary Equipment Cooling Water | Pump design flow and pump run times |
| I-003 | Liquid radiation waste | Tank volume calculated prior to each batch discharge |
| I-005 | Steam generator blowdown | Flow indicating control valve |
| I-007 | Intake screen wash | Pump design flow and pump run times |
| I-008 | Discharge from SE evaporation/percolation basin | Flowmeter |
| I-009 | Emergency storm water discharge from Condenser Cooling Water pits | Pump design flow and pump run times |

SUPPLEMENTAL INFORMATION – B

(FORM 2F)

# ATTACHMENT B
# SUPPLEMENTAL INFORMATION FOR FORM 2F

**FORM 2F, ITEM IVB (page 2F-15)**

**SIGNIFICANT MATERIALS**

The following narrative excludes those areas and facilities included in Form 2CS permit applications. For the remaining plant areas, no significant materials are currently, or in the past 5 years have been, treated, stored, or disposed in a manner that would be exposed to storm water. Company management practices to minimize contact of significant materials with storm water runoff include the storage of chemicals, pesticides, fertilizers, and herbicides in original containers within buildings and sheds. In addition, used oil is collected and stored in a storage tank. Liquid hazardous wastes are collected in sealed drums at satellite accumulation areas. Once the drums are full, they are relocated to the hazardous material storage area, which has secondary containment.

Pesticides, herbicides, and fertilizers are used at the facility on an as-needed basis in accordance with the manufacturers' guidelines.

# LABORATORY RESULTS – OUTFALL D-001

# (FORM 2CS)

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Gross Alpha Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Alpha** | **84.1±25.1** | I | | 84.1 | 252 | pCi/L | 1 | 1601682 | 1/26/2016 16:41 | IN | 1/28/2016 16:48 | EPA 900.0 | |
| **Gross Beta Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Beta** | **276±32.3** | I | | 97.7 | 293 | pCi/L | 1 | 1601682 | 1/26/2016 16:41 | IN | 1/28/2016 16:48 | EPA 900.0 | |
| **Metals** | | | | | | | | | | | | | |
| Antimony | U | | | 2.80 | 8.40 | ug/L | 1 | 1601528 | 1/21/2016 12:00 | MAZ | 1/21/2016 17:02 | EPA 200.7 | |
| **Boron** | **3420** | | | 3.70 | 11.1 | ug/L | 1 | 1601528 | 1/21/2016 12:00 | MAZ | 1/21/2016 17:02 | EPA 200.7 | |
| **Molybdenum** | **6.47** | I | | 4.30 | 12.9 | ug/L | 1 | 1601528 | 1/21/2016 12:00 | MAZ | 1/21/2016 17:02 | EPA 200.7 | |
| Tin | U | | | 7.97 | 23.9 | ug/L | 1 | 1601623 | 1/25/2016 8:00 | IN | 1/25/2016 11:27 | EPA 200.7 | |
| **Titanium** | **4.80** | | | 0.600 | 1.80 | ug/L | 1 | 1601528 | 1/21/2016 12:00 | MAZ | 1/21/2016 17:02 | EPA 200.7 | |
| **Microbiology** | | | | | | | | | | | | | |
| Carbonaceous BOD | U | | | 2.00 | 6.00 | mg/L | 1 | 1601570 | 1/21/2016 15:10 | SC | 1/26/2016 15:10 | CBOD SM5210B | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | | 1.27 | 3.81 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 1,2-Dichlorobenzene | U | | | 1.02 | 3.06 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | | 0.660 | 1.98 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 1,3-Dichlorobenzene | U | | | 1.24 | 3.72 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 1,4-Dichlorobenzene | U | | | 1.18 | 3.54 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,3-Dichloroaniline | U | | | 0.510 | 1.53 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,4,5-Trichlorophenol | U | | | 0.680 | 2.04 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,4,6-Trichlorophenol | U | | | 0.560 | 1.68 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,4-Dichlorophenol | U | | | 0.630 | 1.89 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,4-Dimethylphenol | U | | | 0.490 | 1.47 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,4-Dinitrophenol | U | | | 0.160 | 0.480 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,4-Dinitrotoluene | U | | | 0.300 | 0.900 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 2,6-Dichlorophenol | U | | | 0.237 | 0.712 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2,6-Dinitrotoluene | U | | | 0.520 | 1.56 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2-Chloronaphthalene | U | | | 0.550 | 1.65 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2-Chlorophenol | U | | | 0.890 | 2.67 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2-Methylnaphthalene | U | | | 0.0240 | 0.0720 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2-Methylphenol | U | | | 0.820 | 2.46 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 2-Nitrophenol | U | | | 0.880 | 2.64 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 3,3'-Dichlorobenzidine | U | | | 0.310 | 0.930 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 4,6-Dinitro-2-methylphenol | U | | | 0.270 | 0.810 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 4-Bromophenyl phenyl ether | U | | | 0.530 | 1.59 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 4-Chloro-3-methylphenol | U | | | 0.930 | 2.79 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| 4-Chlorophenyl phenyl ether | U | | | 0.580 | 1.74 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 4-Nitrophenol | U | | | 0.700 | 2.10 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Acenaphthene | U | | | 0.490 | 1.47 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Acenaphthylene | U | | | 0.640 | 1.92 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Aniline | U | | | 0.890 | 2.67 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Anthracene | U | | | 0.500 | 1.50 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| a-Terpineol | U | | | 0.336 | 1.01 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Benzidine | U | | | 0.260 | 0.780 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Benzo (a) anthracene | U | | | 0.180 | 0.540 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Benzo (a) pyrene | U | | | 0.280 | 0.840 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Benzo (b) fluoranthene | U | | | 0.260 | 0.780 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Benzo (g,h,i) perylene | U | | | 0.210 | 0.630 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Benzo (k) fluoranthene | U | | | 0.480 | 1.44 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| Bis(2-chloroethoxy)methane | U | | | 0.580 | 1.74 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Bis(2-chloroethyl)ether | U | | | 0.820 | 2.46 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Bis(2-chloroisopropyl)ether | U | | | 0.970 | 2.91 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Bis(2-ethylhexyl)phthalate | U | | | 1.32 | 3.96 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Butyl benzyl phthalate | U | | | 0.190 | 0.570 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Chrysene | U | | | 0.300 | 0.900 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Dibenz (a,h) anthracene | U | | | 0.160 | 0.580 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Dibenzofuran | U | | | 0.480 | 1.44 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Diethyl phthalate | U | | | 0.200 | 0.600 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Dimethyl phthalate | U | | | 0.290 | 0.870 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Di-n-butyl phthalate | U | | | 0.240 | 0.720 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Di-n-octyl phthalate | U | | | 0.170 | 0.510 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| Fluoranthene | U | | | 0.280 | 0.840 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Fluorene | U | | | 0.520 | 1.56 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Hexachlorobenzene | U | | | 0.520 | 1.56 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Hexachlorobutadiene | U | | | 0.530 | 1.59 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Hexachlorocyclopentadiene | U | J-2 | | 0.690 | 2.07 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Hexachloroethane | U | | | 0.810 | 2.43 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Indeno (1,2,3-cd) pyrene | U | | | 0.150 | 0.450 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Isophorone | U | | | 0.680 | 2.04 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| m,p Cresol | U | | | 0.329 | 0.987 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Naphthalene | U | | | 0.700 | 2.10 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| n-Decane | U | | | 0.244 | 0.733 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Nitrobenzene | U | | | 0.770 | 2.31 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| N-Nitrosodimethylamine | U | | | 1.11 | 3.33 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| N-Nitrosodi-n-propylamine | U | | | 1.10 | 3.30 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| N-Nitrosodiphenylamine | U | | | 0.380 | 1.14 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| n-Octadecane | U | | | 1.59 | 4.78 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Pentachlorophenol | U | | | 0.320 | 0.960 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Phenanthrene | U | | | 0.450 | 1.35 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Phenol | U | | | 0.580 | 1.74 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Pyrene | U | | | 0.220 | 0.660 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| Pyridine | U | | | 0.530 | 1.59 | ug/L | 1 | 1601541 | 1/21/2016 15:24 | AC | 1/22/2016 7:23 | EPA 625 | |
| *Surrogate: 2,4,6-Tribromophenol* | | | | | *116 %* | | *50-150* | *1601541* | *1/21/2016 15:24* | | *1/22/2016 7:23* | *EPA 625* | |
| *Surrogate: 2-Fluorobiphenyl* | | | | | *118 %* | | *50-150* | *1601541* | *1/21/2016 15:24* | | *1/22/2016 7:23* | *EPA 625* | |
| *Surrogate: 2-Fluorophenol* | | | | | *96.6 %* | | *30-110* | *1601541* | *1/21/2016 15:24* | | *1/22/2016 7:23* | *EPA 625* | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| *Surrogate: Nitrobenzene-d5* | | | | | *110 %* | | *50-150* | *1601541* | *1/21/2016 15:24* | | *1/22/2016 7:23* | *EPA 625* | |
| *Surrogate: Phenol-d6* | | | | | *87.8 %* | | *30-110* | *1601541* | *1/21/2016 15:24* | | *1/22/2016 7:23* | *EPA 625* | |
| *Surrogate: p-Terphenyl* | | | | | *92.1 %* | | *50-150* | *1601541* | *1/21/2016 15:24* | | *1/22/2016 7:23* | *EPA 625* | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | U | D-1 | | 0.168 | 0.474 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,1,1-Trichloroethane | U | D-1 | | 0.0760 | 0.226 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,1,2,2-Tetrachloroethane | U | D-1 | | 0.138 | 0.414 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,1,2-Trichloroethane | U | D-1 | | 0.150 | 0.452 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,1-Dichloroethane | U | D-1 | | 0.408 | 1.22 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,1-Dichloroethene | U | D-1 | | 0.118 | 0.352 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,1-Dichloropropene | U | D-1 | | 0.240 | 0.718 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2,3-Trichlorobenzene | U | D-1 | | 0.500 | 1.50 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,2,3-Trichloropropane | U | D-1 | | 0.244 | 0.732 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2,4-Trichlorobenzene | U | D-1 | | 0.496 | 1.49 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2,4-Trimethylbenzene | U | D-1 | | 0.422 | 1.27 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2-Dibromo-3-chloropropane | U | D-1 | | 0.472 | 1.42 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2-Dibromoethane (EDB) | U | D-1 | | 0.142 | 0.426 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2-Dichlorobenzene | U | D-1 | | 0.386 | 1.16 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2-Dichloroethane | U | D-1 | | 0.0720 | 0.218 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,2-Dichloropropane | U | D-1 | | 0.0900 | 0.272 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,3,5-Trimethylbenzene | U | D-1 | | 0.270 | 0.810 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,3-Dichlorobenzene | U | D-1 | | 0.390 | 1.17 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,3-Dichloropropane | U | D-1 | | 0.146 | 0.440 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 1,4-Dichlorobenzene | U | D-1 | | 0.514 | 1.54 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 2,2-Dichloropropane | U | D-1,J-2 | | 0.802 | 2.40 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 2-Butanone (Methyl Ethyl Ketone) | U | D-1,J-2 | | 0.598 | 1.80 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 2-Chloroethylvinyl ether | U | D-1 | | 1.49 | 4.47 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 2-Chlorotoluene | U | D-1 | | 0.258 | 0.776 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 2-Hexanone | U | J-2,D-1 | | 0.890 | 2.67 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 4-Chlorotoluene | U | D-1 | | 0.280 | 0.840 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| 4-Methyl-2-pentanone | U | D-1 | | 0.270 | 0.810 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Acetone | U | D-1 | | 0.554 | 1.66 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Acrolein | U | D-1 | | 0.606 | 1.82 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Acrylonitrile | U | D-1 | | 0.320 | 0.958 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Benzene | U | D-1 | | 0.0600 | 0.180 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Bromobenzene | U | D-1 | | 0.226 | 0.680 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Bromochloromethane | U | D-1 | | 0.114 | 0.344 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Bromodichloromethane | U | D-1 | | 0.172 | 0.516 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Bromoform | U | D-1 | | 0.276 | 0.828 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Bromomethane | U | D-1 | | 0.264 | 0.794 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Carbon Tetrachloride | U | D-1 | | 0.104 | 0.312 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Chlorobenzene | U | D-1 | | 0.158 | 0.474 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Chloroethane | U | D-1 | | 0.616 | 1.85 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Chloroform | U | D-1 | | 0.154 | 0.464 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Chloromethane | U | D-1 | | 0.0960 | 0.288 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| cis-1,2-Dichloroethene | U | D-1 | | 0.426 | 1.28 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| cis-1,3-Dichloropropene | U | D-1 | | 0.100 | 0.302 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Dibromochloromethane | U | D-1 | | 0.132 | 0.398 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Dibromomethane | U | D-1 | | 0.114 | 0.342 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Dichlorodifluoromethane | U | D-1 | | 0.188 | 0.566 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Ethyl Benzene | U | D-1 | | 0.168 | 0.504 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Hexachlorobutadiene | U | D-1 | | 0.282 | 0.848 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Isopropylbenzene | U | D-1 | | 0.232 | 0.696 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| m,p-Xylene | U | D-1 | | 0.336 | 1.01 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Methylene Chloride | U | D-1 | | 1.50 | 4.51 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Methyl-tert-butyl ether | U | D-1 | | 0.172 | 0.514 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Naphthalene | U | D-1 | | 1.16 | 3.48 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| n-Butyl Benzene | U | D-1 | | 0.532 | 1.60 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| n-Propylbenzene | U | D-1 | | 0.218 | 0.656 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| o-Xylene | U | D-1 | | 0.168 | 0.506 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| p-Isopropyltoluene | U | D-1 | | 0.394 | 1.18 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| sec-Butyl Benzene | U | D-1 | | 0.354 | 1.06 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Styrene | U | D-1 | | 0.192 | 0.574 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| tert-Butylbenzene | U | D-1 | | 0.386 | 1.16 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Tetrachloroethene | U | D-1 | | 0.168 | 0.506 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Toluene | U | D-1 | | 0.0700 | 0.208 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| trans-1,2-Dichloroethene | U | D-1 | | 0.214 | 0.640 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| trans-1,3-Dichloropropene | U | D-1 | | 0.500 | 1.50 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Trichloroethene | U | D-1 | | 0.100 | 0.302 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Trichlorofluoromethane | U | D-1 | | 0.140 | 0.422 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| Vinyl chloride | U | D-1 | | 0.168 | 0.506 | ug/L | 2 | 1601495 | 1/21/2016 14:30 | BBL | 1/21/2016 21:29 | EPA 624 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | | | *76.8 %* | | *50-110* | *1601495* | *1/21/2016 14:30* | | *1/21/2016 21:29* | *EPA 624* | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| *Surrogate: 2-Bromo-1-chloropropane* | | | | | *79.8 %* | | *74-110* | *1601495* | *1/21/2016 14:30* | | *1/21/2016 21:29* | *EPA 624* | |
| *Surrogate: 4-Bromofluorobenzene* | | | | | *84.8 %* | | *46-125* | *1601495* | *1/21/2016 14:30* | | *1/21/2016 21:29* | *EPA 624* | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Color** | **15/8.03** | | | 1.00 | 3.00 | Pt-Co | 1 | 1601526 | 1/21/2016 11:30 | NL | 1/21/2016 11:30 | SM 2120B | |
| Cyanide (total) | U | | | 0.00230 | 0.00690 | mg/L | 1 | 1601546 | 1/21/2016 16:00 | SA | 1/21/2016 16:47 | EPA 335.4 | |
| MBAS as LAS, mol wt. 340 | U | | | 0.0603 | 0.181 | mg/L | 1 | 1601524 | 1/21/2016 10:15 | SA | 1/21/2016 10:15 | SM5540C | |
| **Total Organic Carbon** | **0.637** | | | 0.168 | 0.504 | mg/L | 1 | 1601556 | 1/22/2016 11:44 | SA | 1/22/2016 13:15 | TOC SM 5310C | |
| **Analyzed at: Florida-Spectrum TNI #: E87671** | | | | | | | | | | | | | |

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum TNI #: E87671** | | | | | | | | | | | | | |
| **Automated Wet chemistry** | | | | | | | | | | | | | |
| Phenolics | U | | | 0.0340 | 0.102 | mg/L | 1 | 42954 | 1/25/2016 16:00 | SUB | 2/3/2016 16:00 | EPA 420.1 | |
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Ammonia as N** | **0.0642** | V | E | 0.0100 | 0.0400 | mg/L | 1 | F16A264 | 1/23/2016 8:36 | CMS | 1/25/2016 10:02 | EPA 350.1 | NELAC |
| **Bromide** | **68** | | I | 0.26 | 1.0 | mg/L | 50 | F16A181 | 1/20/2016 19:16 | MV | 1/20/2016 19:16 | EPA 300.0 | NELAC |
| **Chemical Oxygen Demand** | **380** | | E | 31 | 120 | mg/L | 10 | F16A241 | 1/21/2016 12:29 | MV | 1/22/2016 9:14 | SM5220D | NELAC |
| **Fluoride** | **0.62** | | I | 0.0080 | 0.032 | mg/L | 5 | F16A181 | 1/20/2016 18:51 | MV | 1/20/2016 18:51 | EPA 300.0 | NELAC |

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FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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6501 South Ocean Drive
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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

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02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| Nitrate as N | U | DL1 | E | 0.060 | 0.25 | mg/L | 5 | F16A203 | 1/22/2016 14:49 | TEH | 1/22/2016 14:49 | SM4500NO3-F | NELAC |
| **Nitrite as N** | **0.012** | I | I | 0.0049 | 0.050 | mg/L | 1 | F16A202 | 1/21/2016 13:28 | CMS | 1/21/2016 13:28 | SM4500NO3-F | NELAC |
| Oil & Grease (HEM) | U | A | - | 1.0 | 4.1 | mg/L | 1 | F16A273 | 1/26/2016 10:30 | MV | 1/26/2016 10:30 | EPA 1664A | NELAC |
| **Phosphorus-Total** | **0.030** | | E | 0.0034 | 0.025 | mg/L | 1 | F16A316 | 1/27/2016 16:31 | mv | 1/27/2016 16:31 | SM4500-P F | NELAC |
| **Specific conductance** | **52000** | | I | 1.0 | 1.0 | umhos/cm | 1 | F16A311 | 1/26/2016 15:54 | CMS | 1/26/2016 15:54 | EPA 120.1 | NELAC |
| **Sulfate** | **3000** | | I | 0.46 | 1.8 | mg/L | 50 | F16A181 | 1/20/2016 19:16 | MV | 1/20/2016 19:16 | EPA 300.0 | NELAC |
| **Total Kjeldahl Nitrogen** | **0.58** | I | E | 0.18 | 0.75 | mg/L | 1 | F16A312 | 1/27/2016 7:23 | mv | 1/27/2016 14:22 | EPA 351.2 | NELAC |
| **Total Nitrogen** | **0.60** | | - | 0.050 | 0.050 | mg/L | 1 | F16A331 | 1/27/2016 16:02 | CMS | 1/27/2016 16:02 | Calc. | NELAC |
| **Total Organic Nitrogen** | **0.52** | | - | 0.050 | 0.050 | mg/L | 1 | F16A331 | 1/27/2016 16:02 | CMS | 1/27/2016 16:02 | Calc. | NELAC |
| **Total Suspended Solids** | **15** | | I | 3.0 | 12 | mg/L | 1 | F16A197 | 1/20/2016 14:04 | CMS | 1/20/2016 14:04 | SM2540 D | NELAC |
| **Metals (Total)** | | | | | | | | | | | | | |
| **Arsenic** | **45** | I | F | 36 | 100 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |

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FPL Central Lab

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02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
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**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Metals (Total)** | | | | | | | | | | | | | |
| Beryllium | U | DL1 | F | 1.1 | 10 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| **Cadmium** | **1.1** | I | F | 1.0 | 10 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| **Chromium** | **2.7** | I | F | 1.9 | 10 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| **Copper** | **18** | I | F | 4.0 | 20 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| **Iron** | **440** | V | F | 27 | 100 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| Lead | U | DL1 | F | 16 | 50 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| **Magnesium** | **1500** | | F | 0.28 | 1.0 | mg/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| Nickel | U | DL1 | F | 5.8 | 20 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| Selenium | U | DL1 | F | 37 | 100 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| Silver | U | DL1 | F | 8.2 | 50 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| Thallium | U | DL1 | F | 15 | 100 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |
| **Zinc** | **10** | I,V | F | 3.9 | 100 | ug/L | 10 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 12:11 | EPA 200.7 | NELAC |

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**Reported:**
02/05/2016 15:01

**Client Sample ID: D001 Point of Discharge**
**Client Sample ID (cont):**
**Sampled: 1/20/2016 8:05:00AM Received: 1/20/2016 10:23:00AM**
**Lab Sample #: 16A0377-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Jupiter Environmental Labs TNI # E86546** | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| **Mercury** | **0.00111** | | | 0.000250 | 0.00100 | ug/L | 1 | MHG1813 | 1/22/2016 16:38 | SUB | 1/25/2016 14:21 | EPA 1631E | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A181 - EPA 300.0** | | | | | | | | | | | |
| **Blank (F16A181-BLK1)** | | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | U | | 0.0052 | 0.020 | mg/L | | | | | | |
| Fluoride | U | | 0.0016 | 0.0064 | mg/L | | | | | | |
| Sulfate | U | | 0.0091 | 0.036 | mg/L | | | | | | |
| **LCS (F16A181-BS3)** | | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 1.44 | | | | mg/L | 1.500 | | 96 | 90-110 | | |
| Fluoride | 2.33 | | | | mg/L | 2.550 | | 91 | 90-110 | | |
| Sulfate | 25.6 | | | | mg/L | 27.60 | | 93 | 90-110 | | |
| **LCS Dup (F16A181-BSD3)** | | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 1.45 | | | | mg/L | 1.500 | | 97 | 90-110 | 0.8 | 20 |
| Fluoride | 2.37 | | | | mg/L | 2.550 | | 93 | 90-110 | 2 | 20 |
| Sulfate | 25.1 | | | | mg/L | 27.60 | | 91 | 90-110 | 2 | 20 |
| **Matrix Spike (F16A181-MS1)** | **Source: 16A0089-02** | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 3.34 | | | | mg/L | 2.498 | 0.636 | 108 | 90-110 | | |
| Fluoride | 1.80 | J1, | | | mg/L | 2.502 | 0.169 | 65 | 90-110 | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A181 - EPA 300.0** | | | | | | | | | | | |
| **Matrix Spike (F16A181-MS1)** | **Source: 16A0089-02** | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Sulfate | 48.8 | J1, | | | mg/L | 12.60 | 34.4 | 115 | 90-110 | | |
| **Matrix Spike Dup (F16A181-MSD1)** | **Source: 16A0089-02** | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 3.31 | | | | mg/L | 2.498 | 0.636 | 107 | 90-110 | 0.8 | 20 |
| Fluoride | 1.96 | J1, | | | mg/L | 2.502 | 0.169 | 72 | 90-110 | 8 | 20 |
| Sulfate | 49.3 | J1, | | | mg/L | 12.60 | 34.4 | 119 | 90-110 | 0.9 | 20 |
| **Batch F16A197 - SM2540 D** | | | | | | | | | | | |
| **Blank (F16A197-BLK1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Total Suspended Solids | U | | 3.0 | 12 | mg/L | | | | | | |
| **LCS (F16A197-BS1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Total Suspended Solids | 78.0 | | | | mg/L | 78.30 | | 100 | 80-120 | | |
| **LCS Dup (F16A197-BSD1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Total Suspended Solids | 81.0 | | | | mg/L | 78.30 | | 103 | 80-120 | 4 | 20 |
| **Duplicate (F16A197-DUP1)** | **Source: 16A0334-01** | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A197 - SM2540 D** | | | | | | | | | | | |
| **Duplicate (F16A197-DUP1)** | **Source: 16A0334-01** | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Total Suspended Solids | 7.00 | J8, I | 3.0 | 12 | mg/L | | 6.00 | | | 15 | 5 |
| **Batch F16A202 - SM4500NO3-F** | | | | | | | | | | | |
| **Blank (F16A202-BLK1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Nitrite as N | U | | 0.0049 | 0.050 | mg/L | | | | | | |
| **LCS (F16A202-BS1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Nitrite as N | 2.4 | | | | mg/L | 2.360 | | 102 | 90-110 | | |
| **LCS Dup (F16A202-BSD1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Nitrite as N | 2.4 | | | | mg/L | 2.360 | | 103 | 90-110 | 0.2 | 20 |
| **Matrix Spike (F16A202-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Nitrite as N | 0.49 | | 0.0049 | 0.050 | mg/L | 0.5000 | 0.012 | 96 | 90-110 | | |
| **Matrix Spike Dup (F16A202-MSD1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Nitrite as N | 0.49 | | 0.0049 | 0.050 | mg/L | 0.5000 | 0.012 | 96 | 90-110 | 0.3 | 20 |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A203 - SM4500NO3-F** | | | | | | | | | | | |
| **Blank (F16A203-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate as N | U | | 0.012 | 0.050 | mg/L | | | | | | |
| **LCS (F16A203-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate as N | 5.79 | | | | mg/L | 6.290 | | 92 | 90-110 | | |
| **LCS Dup (F16A203-BSD1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate as N | 6.42 | | | | mg/L | 6.290 | | 102 | 90-110 | 10 | 20 |
| **Matrix Spike (F16A203-MS1)** | | **Source: 16A0377-01** | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate as N | 0.998 | | 0.012 | 0.050 | mg/L | 1.000 | U | 100 | 90-110 | | |
| **Matrix Spike Dup (F16A203-MSD1)** | | **Source: 16A0377-01** | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate as N | 0.957 | | 0.012 | 0.050 | mg/L | 1.000 | U | 96 | 90-110 | 4 | 20 |
| **Batch F16A241 - SM5220D** | | | | | | | | | | | |
| **Blank (F16A241-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | U | | 3.1 | 12 | mg/L | | | | | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A241 - SM5220D** | | | | | | | | | | | |
| **LCS (F16A241-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 55.0 | | | | mg/L | 52.80 | | 104 | 95-105 | | |
| **Matrix Spike (F16A241-MS1)** | | **Source: 16A0064-01** | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 43.7 | J1, | 3.1 | 12 | mg/L | 26.40 | 19.3 | 92 | 95-105 | | |
| **Matrix Spike Dup (F16A241-MSD1)** | | **Source: 16A0064-01** | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 41.0 | J1, | 3.1 | 12 | mg/L | 26.40 | 19.3 | 82 | 95-105 | 6 | 20 |
| **Batch F16A264 - EPA 350.1** | | | | | | | | | | | |
| **Blank (F16A264-BLK1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 0.0209 | I | 0.0100 | 0.0400 | mg/L | | | | | | |
| **LCS (F16A264-BS1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 10.6 | | | | mg/L | 10.40 | | 102 | 90-110 | | |
| **Duplicate (F16A264-DUP1)** | | **Source: 16A0032-01** | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 0.0564 | | 0.0100 | 0.0400 | mg/L | | 0.0618 | | | 9 | 20 |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A264 - EPA 350.1** | | | | | | | | | | | |
| **Matrix Spike (F16A264-MS1)** | **Source: 16A0032-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 1.02 | | 0.0100 | 0.0400 | mg/L | 0.9990 | 0.0618 | 96 | 90-110 | | |
| **Batch F16A273 - EPA 1664A** | | | | | | | | | | | |
| **Blank (F16A273-BLK1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Oil & Grease (HEM) | U | | 1.0 | 4.1 | mg/L | | | | | | |
| **LCS (F16A273-BS1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Oil & Grease (HEM) | 37.0 | | | | mg/L | 40.00 | | 92 | 78-114 | | |
| **LCS (F16A273-BS2)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Oil & Grease (HEM) | 122 | | | | mg/L | 126.0 | | 97 | 78-114 | | |
| **LCS Dup (F16A273-BSD1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Oil & Grease (HEM) | 36.4 | | | | mg/L | 40.00 | | 91 | 78-114 | 2 | 18 |
| **Batch F16A311 - EPA 120.1** | | | | | | | | | | | |
| **Blank (F16A311-BLK1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A311 - EPA 120.1** | | | | | | | | | | | |
| **Blank (F16A311-BLK1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | U | | 1.0 | 1.0 | umhos/cm | | | | | | |
| **LCS (F16A311-BS1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | 245 | | | | umhos/cm | 234.0 | | 105 | 80-120 | | |
| **LCS Dup (F16A311-BSD1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | 244 | | | | umhos/cm | 234.0 | | 104 | 80-120 | 0.4 | 20 |
| **Duplicate (F16A311-DUP1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | 51900 | | 1.0 | 1.0 | umhos/cm | | 51800 | | | 0.2 | 20 |
| **Batch F16A312 - EPA 351.2** | | | | | | | | | | | |
| **Blank (F16A312-BLK1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | U | | 0.18 | 0.75 | mg/L | | | | | | |
| **LCS (F16A312-BS1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 1.91 | | 0.18 | 0.75 | mg/L | 1.998 | | 96 | 90-110 | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A312 - EPA 351.2** | | | | | | | | | | | |
| **Matrix Spike (F16A312-MS1)** | **Source: 16A0398-01** | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 11.3 | J2, | 0.92 | 3.8 | mg/L | 1.998 | 8.42 | 146 | 90-110 | | |
| **Matrix Spike Dup (F16A312-MSD1)** | **Source: 16A0398-01** | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 11.4 | J2, | 0.92 | 3.8 | mg/L | 1.998 | 8.42 | 148 | 90-110 | 0.4 | 20 |
| **Batch F16A316 - SM4500-P F** | | | | | | | | | | | |
| **Blank (F16A316-BLK1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | U | | 0.0034 | 0.025 | mg/L | | | | | | |
| **LCS (F16A316-BS1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.260 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 105 | 90-110 | | |
| **LCS Dup (F16A316-BSD1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.264 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 106 | 90-110 | 2 | 20 |
| **Matrix Spike (F16A316-MS1)** | **Source: 16A0398-01** | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.278 | J1, | 0.0034 | 0.025 | mg/L | 0.2480 | U | 112 | 90-110 | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A316 - SM4500-P F** | | | | | | | | | | | |
| **Matrix Spike Dup (F16A316-MSD1)** | **Source: 16A0398-01** | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.290 | J1, | 0.0034 | 0.025 | mg/L | 0.2480 | U | 117 | 90-110 | 4 | 20 |

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## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Blank (F16A265-BLK1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | U | | 3.6 | 10 | ug/L | | | | | | |
| Beryllium | U | | 0.11 | 1.0 | ug/L | | | | | | |
| Cadmium | U | | 0.10 | 1.0 | ug/L | | | | | | |
| Chromium | U | | 0.19 | 1.0 | ug/L | | | | | | |
| Copper | U | | 0.40 | 2.0 | ug/L | | | | | | |
| Iron | 3.55 | I | 2.7 | 10 | ug/L | | | | | | |
| Lead | 1.91 | I | 1.6 | 5.0 | ug/L | | | | | | |
| Magnesium | U | | 0.028 | 0.10 | mg/L | | | | | | |
| Nickel | U | | 0.58 | 2.0 | ug/L | | | | | | |
| Selenium | U | | 3.7 | 10 | ug/L | | | | | | |
| Silver | U | | 0.82 | 5.0 | ug/L | | | | | | |
| Thallium | U | | 1.5 | 10 | ug/L | | | | | | |
| Zinc | 0.616 | I | 0.39 | 10 | ug/L | | | | | | |
| **LCS (F16A265-BS1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 98.7 | | 3.6 | 10 | ug/L | 100.0 | | 99 | 85-115 | | |

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## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **LCS (F16A265-BS1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Beryllium | 103 | | 0.11 | 1.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Cadmium | 98.2 | | 0.10 | 1.0 | ug/L | 100.0 | | 98 | 85-115 | | |
| Chromium | 99.0 | | 0.19 | 1.0 | ug/L | 100.0 | | 99 | 85-115 | | |
| Copper | 103 | | 0.40 | 2.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Iron | 1020 | | 2.7 | 10 | ug/L | 1000 | | 102 | 85-115 | | |
| Lead | 100 | | 1.6 | 5.0 | ug/L | 100.0 | | 100 | 85-115 | | |
| Magnesium | 1.03 | | 0.028 | 0.10 | mg/L | 1.000 | | 103 | 85-115 | | |
| Nickel | 101 | | 0.58 | 2.0 | ug/L | 100.0 | | 101 | 85-115 | | |
| Selenium | 95.9 | | 3.7 | 10 | ug/L | 100.0 | | 96 | 85-115 | | |
| Silver | 95.6 | | 0.82 | 5.0 | ug/L | 100.0 | | 96 | 85-115 | | |
| Thallium | 96.1 | | 1.5 | 10 | ug/L | 100.0 | | 96 | 85-115 | | |
| Zinc | 98.0 | | 0.39 | 10 | ug/L | 100.0 | | 98 | 85-115 | | |
| **Matrix Spike (F16A265-MS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 110 | | 3.6 | 10 | ug/L | 100.0 | U | 110 | 70-130 | | |
| Beryllium | 101 | | 0.11 | 1.0 | ug/L | 100.0 | U | 101 | 70-130 | | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (F16A265-MS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Cadmium | 98.6 | | 0.10 | 1.0 | ug/L | 100.0 | 0.215 | 98 | 70-130 | | |
| Chromium | 102 | | 0.19 | 1.0 | ug/L | 100.0 | 1.12 | 101 | 70-130 | | |
| Copper | 132 | | 0.40 | 2.0 | ug/L | 100.0 | 31.6 | 100 | 70-130 | | |
| Iron | 1150 | | 2.7 | 10 | ug/L | 1000 | 171 | 98 | 70-130 | | |
| Lead | 96.3 | | 1.6 | 5.0 | ug/L | 100.0 | U | 96 | 70-130 | | |
| Magnesium | 56.4 | J2, | 0.028 | 0.10 | mg/L | 1.000 | 56.2 | 21 | 70-130 | | |
| Nickel | 113 | | 0.58 | 2.0 | ug/L | 100.0 | 14.2 | 98 | 70-130 | | |
| Selenium | 105 | | 3.7 | 10 | ug/L | 100.0 | U | 105 | 70-130 | | |
| Silver | 52.7 | J1, | 0.82 | 5.0 | ug/L | 100.0 | U | 53 | 70-130 | | |
| Thallium | 89.4 | | 1.5 | 10 | ug/L | 100.0 | U | 89 | 70-130 | | |
| Zinc | 176 | | 0.39 | 10 | ug/L | 100.0 | 78.2 | 98 | 70-130 | | |
| **Matrix Spike (F16A265-MS2)** | **Source: 16A0333-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 107 | | 3.6 | 10 | ug/L | 100.0 | U | 107 | 70-130 | | |
| Beryllium | 102 | | 0.11 | 1.0 | ug/L | 100.0 | U | 102 | 70-130 | | |
| Cadmium | 100 | | 0.10 | 1.0 | ug/L | 100.0 | 0.248 | 100 | 70-130 | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (F16A265-MS2)** | **Source: 16A0333-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Chromium | 102 | | 0.19 | 1.0 | ug/L | 100.0 | 0.266 | 102 | 70-130 | | |
| Copper | 121 | | 0.40 | 2.0 | ug/L | 100.0 | 14.1 | 107 | 70-130 | | |
| Iron | 1020 | | 2.7 | 10 | ug/L | 1000 | 25.5 | 99 | 70-130 | | |
| Lead | 98.8 | | 1.6 | 5.0 | ug/L | 100.0 | 2.04 | 97 | 70-130 | | |
| Magnesium | 33.4 | J2, | 0.028 | 0.10 | mg/L | 1.000 | 31.9 | 151 | 70-130 | | |
| Nickel | 106 | | 0.58 | 2.0 | ug/L | 100.0 | 4.29 | 102 | 70-130 | | |
| Selenium | 105 | | 3.7 | 10 | ug/L | 100.0 | U | 105 | 70-130 | | |
| Silver | 54.1 | J1, | 0.82 | 5.0 | ug/L | 100.0 | U | 54 | 70-130 | | |
| Thallium | 91.9 | | 1.5 | 10 | ug/L | 100.0 | U | 92 | 70-130 | | |
| Zinc | 111 | | 0.39 | 10 | ug/L | 100.0 | 9.45 | 101 | 70-130 | | |
| **Matrix Spike Dup (F16A265-MSD1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 110 | | 3.6 | 10 | ug/L | 100.0 | U | 110 | 70-130 | 0.3 | 20 |
| Beryllium | 103 | | 0.11 | 1.0 | ug/L | 100.0 | U | 103 | 70-130 | 2 | 20 |
| Cadmium | 101 | | 0.10 | 1.0 | ug/L | 100.0 | 0.215 | 101 | 70-130 | 3 | 20 |
| Chromium | 104 | | 0.19 | 1.0 | ug/L | 100.0 | 1.12 | 103 | 70-130 | 2 | 20 |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (F16A265-MSD1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Copper | 139 | | 0.40 | 2.0 | ug/L | 100.0 | 31.6 | 107 | 70-130 | 5 | 20 |
| Iron | 1170 | | 2.7 | 10 | ug/L | 1000 | 171 | 100 | 70-130 | 2 | 20 |
| Lead | 99.1 | | 1.6 | 5.0 | ug/L | 100.0 | U | 99 | 70-130 | 3 | 20 |
| Magnesium | 56.9 | | 0.028 | 0.10 | mg/L | 1.000 | 56.2 | 72 | 70-130 | 0.9 | 20 |
| Nickel | 116 | | 0.58 | 2.0 | ug/L | 100.0 | 14.2 | 102 | 70-130 | 3 | 20 |
| Selenium | 112 | | 3.7 | 10 | ug/L | 100.0 | U | 112 | 70-130 | 6 | 20 |
| Silver | 54.1 | J1, | 0.82 | 5.0 | ug/L | 100.0 | U | 54 | 70-130 | 3 | 20 |
| Thallium | 93.3 | | 1.5 | 10 | ug/L | 100.0 | U | 93 | 70-130 | 4 | 20 |
| Zinc | 181 | | 0.39 | 10 | ug/L | 100.0 | 78.2 | 102 | 70-130 | 2 | 20 |
| **Post Spike (F16A265-PS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 219 | | 3.6 | 10 | ug/L | 200.0 | U | 110 | 90-110 | | |
| Beryllium | 206 | | 0.11 | 1.0 | ug/L | 200.0 | U | 103 | 90-110 | | |
| Cadmium | 201 | | 0.10 | 1.0 | ug/L | 200.0 | 0.215 | 101 | 90-110 | | |
| Chromium | 208 | | 0.19 | 1.0 | ug/L | 200.0 | 1.12 | 103 | 90-110 | | |
| Copper | 248 | | 0.40 | 2.0 | ug/L | 200.0 | 31.6 | 108 | 90-110 | | |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Post Spike (F16A265-PS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Iron | 2160 | | 2.7 | 10 | ug/L | 2000 | 171 | 99 | 90-110 | | |
| Lead | 200 | | 1.6 | 5.0 | ug/L | 200.0 | U | 100 | 90-110 | | |
| Magnesium | 58.3 | | 0.028 | 0.10 | mg/L | 2.000 | 56.2 | 104 | 90-110 | | |
| Nickel | 217 | | 0.58 | 2.0 | ug/L | 200.0 | 14.2 | 102 | 90-110 | | |
| Selenium | 213 | | 3.7 | 10 | ug/L | 200.0 | U | 106 | 90-110 | | |
| Silver | 104 | | 0.82 | 5.0 | ug/L | 200.0 | U | 52 | 90-110 | | |
| Thallium | 187 | | 1.5 | 10 | ug/L | 200.0 | U | 94 | 90-110 | | |
| Zinc | 282 | | 0.39 | 10 | ug/L | 200.0 | 78.2 | 102 | 90-110 | | |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Gross Alpha Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601682 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1601682-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Alpha | U | | 0.64 | 1.92 | pCi/L | | | | - | | |
| **LCS (1601682-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Alpha | 907 | | 2.69 | 8.07 | pCi/L | 1000 | | 90.7 | 60-125 | | |
| **LCS Dup (1601682-BSD1)** | | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Alpha | 841 | | 2.77 | 8.31 | pCi/L | 1000 | | 84.1 | 60-125 | 7.55 | 25 |
| **Matrix Spike (1601682-MS1)** | **Source: 16A0428-01** | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Alpha | 863 | | 2.12 | 6.36 | pCi/L | 1000 | 4.22±0.90 | 85.9 | 60-125 | | |
| **Matrix Spike Dup (1601682-MSD1)** | **Source: 16A0428-01** | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Alpha | 798 | | 2.31 | 6.93 | pCi/L | 1000 | 4.22±0.90 | 79.4 | 60-125 | 7.87 | 25 |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
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**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Gross Beta Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601682 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1601682-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Beta | U | | 1.37 | 4.11 | pCi/L | | | | - | | |
| **LCS (1601682-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Beta | 1020 | | 3.69 | 11.1 | pCi/L | 1000 | | 102 | 0-200 | | |
| **LCS Dup (1601682-BSD1)** | | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Beta | 924 | | 3.56 | 10.7 | pCi/L | 1000 | | 92.4 | 0-200 | 9.39 | 200 |
| **Matrix Spike (1601682-MS1)** | **Source: 16A0428-01** | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Beta | 524 | | 3.57 | 10.7 | pCi/L | 500.0 | 6.18±1.10 | 104 | 0-200 | | |
| **Matrix Spike Dup (1601682-MSD1)** | **Source: 16A0428-01** | | Prepared: 01/21/2016 Analyzed: 01/28/2016 | | | | | | | | |
| Gross Beta | 367 | | 3.81 | 11.4 | pCi/L | 500.0 | 6.18±1.10 | 72.2 | 0-200 | 35.7 | 200 |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601528 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601528-BLK1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Antimony | U | | 2.80 | 8.40 | ug/L | | | | - | | |
| Boron | U | | 3.70 | 11.1 | ug/L | | | | - | | |
| Molybdenum | U | | 4.30 | 12.9 | ug/L | | | | - | | |
| Titanium | U | | 0.600 | 1.80 | ug/L | | | | - | | |
| **LCS (1601528-BS1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Antimony | 998.1 | | 2.80 | 8.40 | ug/L | 1000 | | 99.8 | 85-115 | | |
| Boron | 1008 | | 3.70 | 11.1 | ug/L | 1000 | | 101 | 85-115 | | |
| Molybdenum | 1021 | | 4.30 | 12.9 | ug/L | 1000 | | 102 | 85-115 | | |
| Titanium | 1001 | | 0.600 | 1.80 | ug/L | 1000 | | 100 | 85-115 | | |
| **Matrix Spike (1601528-MS1)** | **Source: 16A0510-02** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Antimony | 985.0 | | 2.80 | 8.40 | ug/L | 1000 | ND | 98.5 | 70-130 | | |
| Boron | 1366 | | 3.70 | 11.1 | ug/L | 1000 | 373.0 | 99.3 | 70-130 | | |
| Molybdenum | 1001 | | 4.30 | 12.9 | ug/L | 1000 | ND | 100 | 70-130 | | |
| Titanium | 963.4 | | 0.600 | 1.80 | ug/L | 1000 | 1.192 | 96.2 | 70-130 | | |

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FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601528 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (1601528-MSD1)** | **Source: 16A0510-02** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Antimony | 984.5 | | 2.80 | 8.40 | ug/L | 1000 | ND | 98.4 | 70-130 | 0.0487 | 20 |
| Boron | 1368 | | 3.70 | 11.1 | ug/L | 1000 | 373.0 | 99.5 | 70-130 | 0.115 | 20 |
| Molybdenum | 1022 | | 4.30 | 12.9 | ug/L | 1000 | ND | 102 | 70-130 | 2.12 | 20 |
| Titanium | 966.2 | | 0.600 | 1.80 | ug/L | 1000 | 1.192 | 96.5 | 70-130 | 0.286 | 20 |
| **Batch 1601623 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601623-BLK1)** | | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | U | | 7.97 | 23.9 | ug/L | | | | - | | |
| **LCS (1601623-BS1)** | | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | 1000 | | 7.97 | 23.9 | ug/L | 1000 | | 100 | 85-115 | | |
| **Matrix Spike (1601623-MS1)** | **Source: 16A0595-01** | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | 937 | | 7.97 | 23.9 | ug/L | 1000 | ND | 93.7 | 70-130 | | |
| **Matrix Spike Dup (1601623-MSD1)** | **Source: 16A0595-01** | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | 937 | | 7.97 | 23.9 | ug/L | 1000 | ND | 93.7 | 70-130 | 0.00 | 20 |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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Jensen Beach FL, 34957

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NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601570 - CBOD SM5210B** | | | | | | | | | | | |
| **Blank (1601570-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/26/2016 | | | | | | | | |
| Carbonaceous BOD | U | | 2.00 | 6.00 | mg/L | | | | - | | |
| **LCS (1601570-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/26/2016 | | | | | | | | |
| Carbonaceous BOD | 209 | | 2.00 | 6.00 | mg/L | 198.0 | | 106 | 85-115 | | |
| **LCS Dup (1601570-BSD1)** | | | Prepared: 01/21/2016 Analyzed: 01/26/2016 | | | | | | | | |
| Carbonaceous BOD | 183 | | 2.00 | 6.00 | mg/L | 198.0 | | 92.4 | 85-115 | 13.3 | 20 |

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Blank (1601541-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | 1.27 | 3.81 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | U | | 1.02 | 3.06 | ug/L | | | | - | | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | 0.660 | 1.98 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | U | | 1.24 | 3.72 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | U | | 1.18 | 3.54 | ug/L | | | | - | | |
| 2,3-Dichloroaniline | U | | 0.510 | 1.53 | ug/L | | | | - | | |
| 2,4,5-Trichlorophenol | U | | 0.680 | 2.04 | ug/L | | | | - | | |
| 2,4,6-Trichlorophenol | U | | 0.560 | 1.68 | ug/L | | | | - | | |
| 2,4-Dichlorophenol | U | | 0.630 | 1.89 | ug/L | | | | - | | |
| 2,4-Dimethylphenol | U | | 0.490 | 1.47 | ug/L | | | | - | | |
| 2,4-Dinitrophenol | U | | 0.160 | 0.480 | ug/L | | | | - | | |
| 2,4-Dinitrotoluene | U | | 0.300 | 0.900 | ug/L | | | | - | | |
| 2,6-Dichlorophenol | U | | 0.237 | 0.712 | ug/L | | | | - | | |
| 2,6-Dinitrotoluene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| 2-Chloronaphthalene | U | | 0.550 | 1.65 | ug/L | | | | - | | |
| 2-Chlorophenol | U | | 0.890 | 2.67 | ug/L | | | | - | | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Blank (1601541-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 2-Methylnaphthalene | U | | 0.0240 | 0.0720 | ug/L | | | | - | | |
| 2-Methylphenol | U | | 0.820 | 2.46 | ug/L | | | | - | | |
| 2-Nitrophenol | U | | 0.880 | 2.64 | ug/L | | | | - | | |
| 3,3'-Dichlorobenzidine | U | | 0.310 | 0.930 | ug/L | | | | - | | |
| 4,6-Dinitro-2-methylphenol | U | | 0.270 | 0.810 | ug/L | | | | - | | |
| 4-Bromophenyl phenyl ether | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| 4-Chloro-3-methylphenol | U | | 0.930 | 2.79 | ug/L | | | | - | | |
| 4-Chlorophenyl phenyl ether | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| 4-Nitrophenol | U | | 0.700 | 2.10 | ug/L | | | | - | | |
| Acenaphthene | U | | 0.490 | 1.47 | ug/L | | | | - | | |
| Acenaphthylene | U | | 0.640 | 1.92 | ug/L | | | | - | | |
| Aniline | U | | 0.890 | 2.67 | ug/L | | | | - | | |
| Anthracene | U | | 0.500 | 1.50 | ug/L | | | | - | | |
| a-Terpineol | U | | 0.336 | 1.01 | ug/L | | | | - | | |
| Benzidine | U | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (a) anthracene | U | | 0.180 | 0.540 | ug/L | | | | - | | |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Blank (1601541-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Benzo (a) pyrene | U | | 0.280 | 0.840 | ug/L | | | | - | | |
| Benzo (b) fluoranthene | U | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (g,h,i) perylene | U | | 0.210 | 0.630 | ug/L | | | | - | | |
| Benzo (k) fluoranthene | U | | 0.480 | 1.44 | ug/L | | | | - | | |
| Bis(2-chloroethoxy)methane | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| Bis(2-chloroethyl)ether | U | | 0.820 | 2.46 | ug/L | | | | - | | |
| Bis(2-chloroisopropyl)ether | U | | 0.970 | 2.91 | ug/L | | | | - | | |
| Bis(2-ethylhexyl)phthalate | U | | 1.32 | 3.96 | ug/L | | | | - | | |
| Butyl benzyl phthalate | U | | 0.190 | 0.570 | ug/L | | | | - | | |
| Chrysene | U | | 0.300 | 0.900 | ug/L | | | | - | | |
| Dibenz (a,h) anthracene | U | | 0.160 | 0.580 | ug/L | | | | - | | |
| Dibenzofuran | U | | 0.480 | 1.44 | ug/L | | | | - | | |
| Diethyl phthalate | U | | 0.200 | 0.600 | ug/L | | | | - | | |
| Dimethyl phthalate | U | | 0.290 | 0.870 | ug/L | | | | - | | |
| Di-n-butyl phthalate | U | | 0.240 | 0.720 | ug/L | | | | - | | |
| Di-n-octyl phthalate | U | | 0.170 | 0.510 | ug/L | | | | - | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Blank (1601541-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Fluoranthene | U | | 0.280 | 0.840 | ug/L | | | | - | | |
| Fluorene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobenzene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobutadiene | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| Hexachlorocyclopentadiene | U | | 0.690 | 2.07 | ug/L | | | | - | | |
| Hexachloroethane | U | | 0.810 | 2.43 | ug/L | | | | - | | |
| Indeno (1,2,3-cd) pyrene | U | | 0.150 | 0.450 | ug/L | | | | - | | |
| Isophorone | U | | 0.680 | 2.04 | ug/L | | | | - | | |
| m,p Cresol | U | | 0.329 | 0.987 | ug/L | | | | - | | |
| Naphthalene | U | | 0.700 | 2.10 | ug/L | | | | - | | |
| n-Decane | U | | 0.244 | 0.733 | ug/L | | | | - | | |
| Nitrobenzene | U | | 0.770 | 2.31 | ug/L | | | | - | | |
| N-Nitrosodimethylamine | U | | 1.11 | 3.33 | ug/L | | | | - | | |
| N-Nitrosodi-n-propylamine | U | | 1.10 | 3.30 | ug/L | | | | - | | |
| N-Nitrosodiphenylamine | U | | 0.380 | 1.14 | ug/L | | | | - | | |
| n-Octadecane | U | | 1.59 | 4.78 | ug/L | | | | - | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Blank (1601541-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Pentachlorophenol | U | | 0.320 | 0.960 | ug/L | | | | - | | |
| Phenanthrene | U | | 0.450 | 1.35 | ug/L | | | | - | | |
| Phenol | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| Pyrene | U | | 0.220 | 0.660 | ug/L | | | | - | | |
| Pyridine | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| *Surrogate: 2,4,6-Tribromophenol* | *38.4* | | | | ug/L | *50.00* | | *76.7* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *17.8* | | | | ug/L | *25.00* | | *71.0* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *27.7* | | | | ug/L | *50.00* | | *55.4* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *18.5* | | | | ug/L | *25.00* | | *73.8* | *50-150* | | |
| *Surrogate: Phenol-d6* | *20.6* | | | | ug/L | *50.00* | | *41.1* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *17.0* | | | | ug/L | *25.00* | | *68.1* | *50-150* | | |
| **LCS (1601541-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.36 | | 1.27 | 3.81 | ug/L | 10.00 | | 73.6 | 44-142 | | |
| 1,2-Dichlorobenzene | 6.31 | | 1.02 | 3.06 | ug/L | 10.00 | | 63.1 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 8.20 | | 0.660 | 1.98 | ug/L | 10.00 | | 82.0 | 40-140 | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **LCS (1601541-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 1,3-Dichlorobenzene | 6.64 | | 1.24 | 3.72 | ug/L | 10.00 | | 66.4 | 0-172 | | |
| 1,4-Dichlorobenzene | 6.37 | | 1.18 | 3.54 | ug/L | 10.00 | | 63.7 | 20-124 | | |
| 2,4,5-Trichlorophenol | 8.53 | | 0.680 | 2.04 | ug/L | 10.00 | | 85.3 | 42-131 | | |
| 2,4,6-Trichlorophenol | 9.81 | | 0.560 | 1.68 | ug/L | 10.00 | | 98.1 | 37-144 | | |
| 2,4-Dichlorophenol | 9.76 | | 0.630 | 1.89 | ug/L | 10.00 | | 97.6 | 39-135 | | |
| 2,4-Dimethylphenol | 8.06 | | 0.490 | 1.47 | ug/L | 10.00 | | 80.6 | 32-119 | | |
| 2,4-Dinitrophenol | U | | 0.160 | 0.480 | ug/L | 10.00 | | | 0-191 | | |
| 2,4-Dinitrotoluene | 7.10 | | 0.300 | 0.900 | ug/L | 10.00 | | 71.0 | 39-139 | | |
| 2,6-Dichlorophenol | 9.42 | | 0.237 | 0.712 | ug/L | 10.00 | | 94.2 | 37-136 | | |
| 2,6-Dinitrotoluene | 8.72 | | 0.520 | 1.56 | ug/L | 10.00 | | 87.2 | 50-158 | | |
| 2-Chloronaphthalene | 8.15 | | 0.550 | 1.65 | ug/L | 10.00 | | 81.5 | 60-118 | | |
| 2-Chlorophenol | 8.68 | | 0.890 | 2.67 | ug/L | 10.00 | | 86.8 | 23-134 | | |
| 2-Methylnaphthalene | 7.70 | | 0.0240 | 0.0720 | ug/L | 10.00 | | 77.0 | 34-129 | | |
| 2-Methylphenol | 8.10 | | 0.820 | 2.46 | ug/L | 10.00 | | 81.0 | 52-109 | | |
| 2-Nitrophenol | 7.84 | | 0.880 | 2.64 | ug/L | 10.00 | | 78.4 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 8.59 | | 0.310 | 0.930 | ug/L | 10.00 | | 85.9 | 0-262 | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **LCS (1601541-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | 1.61 | | 0.270 | 0.810 | ug/L | 10.00 | | 16.1 | 0-181 | | |
| 4-Bromophenyl phenyl ether | 9.02 | | 0.530 | 1.59 | ug/L | 10.00 | | 90.2 | 53-127 | | |
| 4-Chloro-3-methylphenol | 9.35 | | 0.930 | 2.79 | ug/L | 10.00 | | 93.5 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 8.55 | | 0.580 | 1.74 | ug/L | 10.00 | | 85.5 | 25-158 | | |
| 4-Nitrophenol | 2.33 | | 0.700 | 2.10 | ug/L | 10.00 | | 23.3 | 0-132 | | |
| Acenaphthene | 7.91 | | 0.490 | 1.47 | ug/L | 10.00 | | 79.1 | 47-145 | | |
| Acenaphthylene | 8.39 | | 0.640 | 1.92 | ug/L | 10.00 | | 83.9 | 33-145 | | |
| Aniline | 6.78 | | 0.890 | 2.67 | ug/L | 10.00 | | 67.8 | 40-138 | | |
| Anthracene | 9.54 | | 0.500 | 1.50 | ug/L | 10.00 | | 95.4 | 27-133 | | |
| Benzidine | 5.38 | | 0.260 | 0.780 | ug/L | 10.00 | | 53.8 | 40-140 | | |
| Benzo (a) anthracene | 7.31 | | 0.180 | 0.540 | ug/L | 10.00 | | 73.1 | 33-143 | | |
| Benzo (a) pyrene | 6.63 | | 0.280 | 0.840 | ug/L | 10.00 | | 66.3 | 17-163 | | |
| Benzo (b) fluoranthene | 8.81 | | 0.260 | 0.780 | ug/L | 10.00 | | 88.1 | 24-159 | | |
| Benzo (g,h,i) perylene | 5.47 | | 0.210 | 0.630 | ug/L | 10.00 | | 54.7 | 0-219 | | |
| Benzo (k) fluoranthene | 8.03 | | 0.480 | 1.44 | ug/L | 10.00 | | 80.3 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 8.44 | | 0.580 | 1.74 | ug/L | 10.00 | | 84.4 | 33-184 | | |

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FPL Central Lab

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NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **LCS (1601541-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Bis(2-chloroethyl)ether | 7.89 | | 0.820 | 2.46 | ug/L | 10.00 | | 78.9 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 7.32 | | 0.970 | 2.91 | ug/L | 10.00 | | 73.2 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 8.02 | | 1.32 | 3.96 | ug/L | 10.00 | | 80.2 | 8-158 | | |
| Butyl benzyl phthalate | 7.58 | | 0.190 | 0.570 | ug/L | 10.00 | | 75.8 | 0-152 | | |
| Chrysene | 8.93 | | 0.300 | 0.900 | ug/L | 10.00 | | 89.3 | 17-168 | | |
| Dibenz (a,h) anthracene | 6.07 | | 0.160 | 0.580 | ug/L | 10.00 | | 60.7 | 0-227 | | |
| Dibenzofuran | 8.64 | | 0.480 | 1.44 | ug/L | 10.00 | | 86.4 | 46-127 | | |
| Diethyl phthalate | 8.21 | | 0.200 | 0.600 | ug/L | 10.00 | | 82.1 | 0-114 | | |
| Dimethyl phthalate | 6.80 | | 0.290 | 0.870 | ug/L | 10.00 | | 68.0 | 0-112 | | |
| Di-n-butyl phthalate | 9.12 | | 0.240 | 0.720 | ug/L | 10.00 | | 91.2 | 1-118 | | |
| Di-n-octyl phthalate | 8.60 | | 0.170 | 0.510 | ug/L | 10.00 | | 86.0 | 4-146 | | |
| Fluoranthene | 10.4 | | 0.280 | 0.840 | ug/L | 10.00 | | 104 | 26-137 | | |
| Fluorene | 7.11 | | 0.520 | 1.56 | ug/L | 10.00 | | 71.1 | 59-121 | | |
| Hexachlorobenzene | 8.53 | | 0.520 | 1.56 | ug/L | 10.00 | | 85.3 | 0-152 | | |
| Hexachlorobutadiene | 6.83 | | 0.530 | 1.59 | ug/L | 10.00 | | 68.3 | 24-116 | | |
| Hexachlorocyclopentadiene | 2.82 | J-2, | 0.690 | 2.07 | ug/L | 10.00 | | 28.2 | 40-140 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **LCS (1601541-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Hexachloroethane | 5.67 | | 0.810 | 2.43 | ug/L | 10.00 | | 56.7 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 5.13 | | 0.150 | 0.450 | ug/L | 10.00 | | 51.3 | 0-171 | | |
| Isophorone | 8.12 | | 0.680 | 2.04 | ug/L | 10.00 | | 81.2 | 21-196 | | |
| m,p Cresol | 7.99 | | 0.329 | 0.987 | ug/L | 10.00 | | 79.9 | 48-110 | | |
| Naphthalene | 7.41 | | 0.700 | 2.10 | ug/L | 10.00 | | 74.1 | 21-133 | | |
| Nitrobenzene | 7.22 | | 0.770 | 2.31 | ug/L | 10.00 | | 72.2 | 35-180 | | |
| N-Nitrosodimethylamine | 6.07 | | 1.11 | 3.33 | ug/L | 10.00 | | 60.7 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 7.78 | | 1.10 | 3.30 | ug/L | 10.00 | | 77.8 | 0-230 | | |
| N-Nitrosodiphenylamine | 9.97 | | 0.380 | 1.14 | ug/L | 10.00 | | 99.7 | 40-140 | | |
| Pentachlorophenol | 10.0 | | 0.320 | 0.960 | ug/L | 10.00 | | 100 | 14-176 | | |
| Phenanthrene | 8.16 | | 0.450 | 1.35 | ug/L | 10.00 | | 81.6 | 54-120 | | |
| Phenol | 4.43 | | 0.580 | 1.74 | ug/L | 10.00 | | 44.3 | 5-112 | | |
| Pyrene | 8.29 | | 0.220 | 0.660 | ug/L | 10.00 | | 82.9 | 52-115 | | |
| Pyridine | 5.06 | | 0.530 | 1.59 | ug/L | 10.00 | | 50.6 | 10-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *40.5* | | | | ug/L | *50.00* | | *81.1* | *50-150* | | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

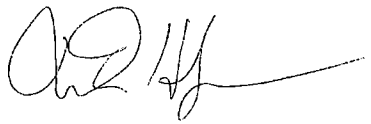
## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **LCS (1601541-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| *Surrogate: 2-Fluorobiphenyl* | *19.3* | | | | ug/L | *25.00* | | *77.2* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *29.7* | | | | ug/L | *50.00* | | *59.4* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *18.9* | | | | ug/L | *25.00* | | *75.6* | *50-150* | | |
| *Surrogate: Phenol-d6* | *22.8* | | | | ug/L | *50.00* | | *45.7* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *16.4* | | | | ug/L | *25.00* | | *65.6* | *50-150* | | |
| **Matrix Spike (1601541-MS1)** | | **Source: 16A0527-01** | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.09 | | 1.27 | 3.81 | ug/L | 10.00 | ND | 70.9 | 44-142 | | |
| 1,2-Dichlorobenzene | 6.20 | | 1.02 | 3.06 | ug/L | 10.00 | ND | 62.0 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 8.02 | | 0.660 | 1.98 | ug/L | 10.00 | ND | 80.2 | 40-140 | | |
| 1,3-Dichlorobenzene | 6.52 | | 1.24 | 3.72 | ug/L | 10.00 | ND | 65.2 | 0-172 | | |
| 1,4-Dichlorobenzene | 6.23 | | 1.18 | 3.54 | ug/L | 10.00 | ND | 62.3 | 20-124 | | |
| 2,4,5-Trichlorophenol | 7.96 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 79.6 | 46-131 | | |
| 2,4,6-Trichlorophenol | 9.31 | | 0.560 | 1.68 | ug/L | 10.00 | ND | 93.1 | 37-144 | | |
| 2,4-Dichlorophenol | 9.61 | | 0.630 | 1.89 | ug/L | 10.00 | ND | 96.1 | 39-135 | | |
| 2,4-Dimethylphenol | 7.69 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 76.9 | 32-119 | | |

Serial #: 02052016150147

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601541-MS1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 2,4-Dinitrophenol | U | | 0.160 | 0.480 | ug/L | 10.00 | ND | | 0-191 | | |
| 2,4-Dinitrotoluene | 6.84 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 68.4 | 39-139 | | |
| 2,6-Dichlorophenol | 9.09 | | 0.237 | 0.712 | ug/L | 10.00 | ND | 90.9 | 35-145 | | |
| 2,6-Dinitrotoluene | 8.38 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 83.8 | 50-158 | | |
| 2-Chloronaphthalene | 7.72 | | 0.550 | 1.65 | ug/L | 10.00 | ND | 77.2 | 60-118 | | |
| 2-Chlorophenol | 8.50 | | 0.890 | 2.67 | ug/L | 10.00 | ND | 85.0 | 23-134 | | |
| 2-Methylnaphthalene | 7.26 | | 0.0240 | 0.0720 | ug/L | 10.00 | ND | 72.6 | 36-128 | | |
| 2-Methylphenol | 7.98 | | 0.820 | 2.46 | ug/L | 10.00 | ND | 79.8 | 52-113 | | |
| 2-Nitrophenol | 7.80 | | 0.880 | 2.64 | ug/L | 10.00 | ND | 78.0 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 8.90 | | 0.310 | 0.930 | ug/L | 10.00 | ND | 89.0 | 0-262 | | |
| 4,6-Dinitro-2-methylphenol | 1.90 | | 0.270 | 0.810 | ug/L | 10.00 | ND | 19.0 | 0-181 | | |
| 4-Bromophenyl phenyl ether | 8.85 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 88.5 | 53-127 | | |
| 4-Chloro-3-methylphenol | 9.11 | | 0.930 | 2.79 | ug/L | 10.00 | ND | 91.1 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 8.19 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 81.9 | 25-158 | | |
| 4-Nitrophenol | 2.37 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 23.7 | 0-132 | | |
| Acenaphthene | 7.55 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 75.5 | 47-145 | | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601541-MS1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Acenaphthylene | 7.99 | | 0.640 | 1.92 | ug/L | 10.00 | ND | 79.9 | 33-145 | | |
| Aniline | 7.31 | | 0.890 | 2.67 | ug/L | 10.00 | ND | 73.1 | 40-147 | | |
| Anthracene | 9.37 | | 0.500 | 1.50 | ug/L | 10.00 | ND | 93.7 | 27-133 | | |
| Benzidine | 5.26 | | 0.260 | 0.780 | ug/L | 10.00 | ND | 52.6 | 40-140 | | |
| Benzo (a) anthracene | 7.28 | | 0.180 | 0.540 | ug/L | 10.00 | ND | 72.8 | 33-143 | | |
| Benzo (a) pyrene | 6.51 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 65.1 | 17-163 | | |
| Benzo (b) fluoranthene | 8.74 | | 0.260 | 0.780 | ug/L | 10.00 | ND | 87.4 | 24-159 | | |
| Benzo (g,h,i) perylene | 5.28 | | 0.210 | 0.630 | ug/L | 10.00 | ND | 52.8 | 0-219 | | |
| Benzo (k) fluoranthene | 7.86 | | 0.480 | 1.44 | ug/L | 10.00 | ND | 78.6 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 8.17 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 81.7 | 33-184 | | |
| Bis(2-chloroethyl)ether | 7.82 | | 0.820 | 2.46 | ug/L | 10.00 | ND | 78.2 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 7.17 | | 0.970 | 2.91 | ug/L | 10.00 | ND | 71.7 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 7.82 | | 1.32 | 3.96 | ug/L | 10.00 | ND | 78.2 | 8-158 | | |
| Butyl benzyl phthalate | 7.47 | | 0.190 | 0.570 | ug/L | 10.00 | ND | 74.7 | 0-152 | | |
| Chrysene | 8.64 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 86.4 | 17-168 | | |
| Dibenz (a,h) anthracene | 5.98 | | 0.160 | 0.580 | ug/L | 10.00 | ND | 59.8 | 0-227 | | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601541-MS1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Dibenzofuran | 8.24 | | 0.480 | 1.44 | ug/L | 10.00 | ND | 82.4 | 43-136 | | |
| Diethyl phthalate | 7.77 | | 0.200 | 0.600 | ug/L | 10.00 | ND | 77.7 | 0-114 | | |
| Dimethyl phthalate | 6.46 | | 0.290 | 0.870 | ug/L | 10.00 | ND | 64.6 | 0-112 | | |
| Di-n-butyl phthalate | 9.12 | | 0.240 | 0.720 | ug/L | 10.00 | ND | 91.2 | 1-118 | | |
| Di-n-octyl phthalate | 8.46 | | 0.170 | 0.510 | ug/L | 10.00 | ND | 84.6 | 4-146 | | |
| Fluoranthene | 10.1 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 101 | 26-137 | | |
| Fluorene | 8.44 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 84.4 | 59-121 | | |
| Hexachlorobenzene | 8.38 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 83.8 | 0-152 | | |
| Hexachlorobutadiene | 6.56 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 65.6 | 24-116 | | |
| Hexachlorocyclopentadiene | 3.26 | J-2, J-3, | 0.690 | 2.07 | ug/L | 10.00 | ND | 32.6 | 40-140 | | |
| Hexachloroethane | 5.58 | | 0.810 | 2.43 | ug/L | 10.00 | ND | 55.8 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 4.96 | | 0.150 | 0.450 | ug/L | 10.00 | ND | 49.6 | 0-171 | | |
| Isophorone | 7.86 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 78.6 | 21-196 | | |
| m,p Cresol | 7.82 | | 0.329 | 0.987 | ug/L | 10.00 | ND | 78.2 | 53-110 | | |
| Naphthalene | 7.19 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 71.9 | 21-133 | | |
| Nitrobenzene | 6.96 | | 0.770 | 2.31 | ug/L | 10.00 | ND | 69.6 | 35-180 | | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601541-MS1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| N-Nitrosodimethylamine | 6.00 | | 1.11 | 3.33 | ug/L | 10.00 | ND | 60.0 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 7.78 | | 1.10 | 3.30 | ug/L | 10.00 | ND | 77.8 | 0-230 | | |
| N-Nitrosodiphenylamine | 9.59 | | 0.380 | 1.14 | ug/L | 10.00 | ND | 95.9 | 40-140 | | |
| Pentachlorophenol | 9.76 | | 0.320 | 0.960 | ug/L | 10.00 | ND | 97.6 | 14-176 | | |
| Phenanthrene | 8.01 | | 0.450 | 1.35 | ug/L | 10.00 | ND | 80.1 | 54-120 | | |
| Phenol | 4.61 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 46.1 | 5-112 | | |
| Pyrene | 8.10 | | 0.220 | 0.660 | ug/L | 10.00 | ND | 81.0 | 52-115 | | |
| Pyridine | 4.94 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 49.4 | 40-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *39.6* | | | | ug/L | *50.00* | | *79.2* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *18.7* | | | | ug/L | *25.00* | | *74.9* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *29.3* | | | | ug/L | *50.00* | | *58.6* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *18.3* | | | | ug/L | *25.00* | | *73.1* | *50-150* | | |
| *Surrogate: Phenol-d6* | *22.4* | | | | ug/L | *50.00* | | *44.8* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *16.4* | | | | ug/L | *25.00* | | *65.7* | *50-150* | | |
| **Matrix Spike Dup (1601541-MSD1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601541-MSD1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 8.83 | | 1.27 | 3.81 | ug/L | 10.00 | ND | 88.3 | 44-142 | 21.9 | 20 |
| 1,2-Dichlorobenzene | 7.42 | | 1.02 | 3.06 | ug/L | 10.00 | ND | 74.2 | 32-129 | 17.9 | 20 |
| 1,2-Diphenylhydrazine as Azobenzene | 12.3 | | 0.660 | 1.98 | ug/L | 10.00 | ND | 123 | 40-140 | 42.0 | 20 |
| 1,3-Dichlorobenzene | 7.46 | | 1.24 | 3.72 | ug/L | 10.00 | ND | 74.6 | 0-172 | 13.4 | 20 |
| 1,4-Dichlorobenzene | 7.12 | | 1.18 | 3.54 | ug/L | 10.00 | ND | 71.2 | 20-124 | 13.3 | 20 |
| 2,4,5-Trichlorophenol | 12.7 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 127 | 46-131 | 46.0 | 30 |
| 2,4,6-Trichlorophenol | 15.2 | | 0.560 | 1.68 | ug/L | 10.00 | ND | 152 | 37-144 | 47.8 | 20 |
| 2,4-Dichlorophenol | 14.5 | | 0.630 | 1.89 | ug/L | 10.00 | ND | 145 | 39-135 | 40.6 | 20 |
| 2,4-Dimethylphenol | 11.5 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 115 | 32-119 | 40.1 | 20 |
| 2,4-Dinitrophenol | U | | 0.160 | 0.480 | ug/L | 10.00 | ND | | 0-191 | | 20 |
| 2,4-Dinitrotoluene | 10.8 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 108 | 39-139 | 45.2 | 20 |
| 2,6-Dichlorophenol | 14.2 | | 0.237 | 0.712 | ug/L | 10.00 | ND | 142 | 35-145 | 43.8 | 30 |
| 2,6-Dinitrotoluene | 13.5 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 135 | 50-158 | 46.6 | 20 |
| 2-Chloronaphthalene | 11.2 | | 0.550 | 1.65 | ug/L | 10.00 | ND | 112 | 60-118 | 36.5 | 20 |
| 2-Chlorophenol | 12.7 | | 0.890 | 2.67 | ug/L | 10.00 | ND | 127 | 23-134 | 39.6 | 20 |
| 2-Methylnaphthalene | 10.3 | | 0.0240 | 0.0720 | ug/L | 10.00 | ND | 103 | 36-128 | 35.1 | 30 |

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Tom Helton For Phoebe Brown, Central Lab Manager

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West Palm Beach, FL 33407
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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601541-MSD1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 2-Methylphenol | 11.8 | | 0.820 | 2.46 | ug/L | 10.00 | ND | 118 | 52-113 | 38.5 | 30 |
| 2-Nitrophenol | 12.2 | | 0.880 | 2.64 | ug/L | 10.00 | ND | 122 | 29-182 | 44.4 | 20 |
| 3,3'-Dichlorobenzidine | 10.9 | | 0.310 | 0.930 | ug/L | 10.00 | ND | 109 | 0-262 | 20.3 | 20 |
| 4,6-Dinitro-2-methylphenol | 3.91 | | 0.270 | 0.810 | ug/L | 10.00 | ND | 39.1 | 0-181 | 69.5 | 20 |
| 4-Bromophenyl phenyl ether | 13.3 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 133 | 53-127 | 40.2 | 20 |
| 4-Chloro-3-methylphenol | 14.2 | | 0.930 | 2.79 | ug/L | 10.00 | ND | 142 | 22-147 | 43.5 | 20 |
| 4-Chlorophenyl phenyl ether | 12.2 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 122 | 25-158 | 39.4 | 20 |
| 4-Nitrophenol | 6.13 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 61.3 | 0-132 | 88.4 | 20 |
| Acenaphthene | 10.8 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 108 | 47-145 | 35.8 | 20 |
| Acenaphthylene | 12.1 | | 0.640 | 1.92 | ug/L | 10.00 | ND | 121 | 33-145 | 41.1 | 20 |
| Aniline | 7.88 | | 0.890 | 2.67 | ug/L | 10.00 | ND | 78.8 | 40-147 | 7.45 | 30 |
| Anthracene | 14.4 | | 0.500 | 1.50 | ug/L | 10.00 | ND | 144 | 27-133 | 42.6 | 20 |
| Benzidine | 5.26 | | 0.260 | 0.780 | ug/L | 10.00 | ND | 52.6 | 40-140 | 0.0380 | 20 |
| Benzo (a) anthracene | 10.4 | | 0.180 | 0.540 | ug/L | 10.00 | ND | 104 | 33-143 | 35.7 | 20 |
| Benzo (a) pyrene | 9.66 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 96.6 | 17-163 | 39.0 | 20 |
| Benzo (b) fluoranthene | 13.4 | | 0.260 | 0.780 | ug/L | 10.00 | ND | 134 | 24-159 | 41.8 | 20 |

Serial #: 02052016150147

FPL Central Lab

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601541-MSD1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Benzo (g,h,i) perylene | 7.95 | | 0.210 | 0.630 | ug/L | 10.00 | ND | 79.5 | 0-219 | 40.4 | 20 |
| Benzo (k) fluoranthene | 12.5 | | 0.480 | 1.44 | ug/L | 10.00 | ND | 125 | 11-162 | 45.4 | 20 |
| Bis(2-chloroethoxy)methane | 12.4 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 124 | 33-184 | 40.8 | 20 |
| Bis(2-chloroethyl)ether | 11.6 | | 0.820 | 2.46 | ug/L | 10.00 | ND | 116 | 12-158 | 39.1 | 20 |
| Bis(2-chloroisopropyl)ether | 10.3 | | 0.970 | 2.91 | ug/L | 10.00 | ND | 103 | 36-166 | 35.4 | 20 |
| Bis(2-ethylhexyl)phthalate | 11.4 | | 1.32 | 3.96 | ug/L | 10.00 | ND | 114 | 8-158 | 37.0 | 20 |
| Butyl benzyl phthalate | 8.21 | | 0.190 | 0.570 | ug/L | 10.00 | ND | 82.1 | 0-152 | 9.38 | 20 |
| Chrysene | 12.3 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 123 | 17-168 | 34.6 | 20 |
| Dibenz (a,h) anthracene | 8.38 | | 0.160 | 0.580 | ug/L | 10.00 | ND | 83.8 | 0-227 | 33.3 | 20 |
| Dibenzofuran | 12.6 | | 0.480 | 1.44 | ug/L | 10.00 | ND | 126 | 43-136 | 41.6 | 30 |
| Diethyl phthalate | 10.8 | | 0.200 | 0.600 | ug/L | 10.00 | ND | 108 | 0-114 | 32.2 | 20 |
| Dimethyl phthalate | 6.32 | | 0.290 | 0.870 | ug/L | 10.00 | ND | 63.2 | 0-112 | 2.18 | 20 |
| Di-n-butyl phthalate | 12.9 | | 0.240 | 0.720 | ug/L | 10.00 | ND | 129 | 1-118 | 34.0 | 20 |
| Di-n-octyl phthalate | 13.2 | | 0.170 | 0.510 | ug/L | 10.00 | ND | 132 | 4-146 | 43.8 | 20 |
| Fluoranthene | 15.3 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 153 | 26-137 | 41.1 | 20 |
| Fluorene | 12.8 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 128 | 59-121 | 41.2 | 20 |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601541-MSD1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Hexachlorobenzene | 13.0 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 130 | 0-152 | 43.5 | 20 |
| Hexachlorobutadiene | 7.13 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 71.3 | 24-116 | 8.31 | 20 |
| Hexachlorocyclopentadiene | 3.22 | J-2, J-3, | 0.690 | 2.07 | ug/L | 10.00 | ND | 32.2 | 40-140 | 1.30 | 20 |
| Hexachloroethane | 6.05 | | 0.810 | 2.43 | ug/L | 10.00 | ND | 60.5 | 40-113 | 8.05 | 20 |
| Indeno (1,2,3-cd) pyrene | 7.17 | | 0.150 | 0.450 | ug/L | 10.00 | ND | 71.7 | 0-171 | 36.5 | 20 |
| Isophorone | 11.6 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 116 | 21-196 | 38.3 | 20 |
| m,p Cresol | 11.6 | | 0.329 | 0.987 | ug/L | 10.00 | ND | 116 | 53-110 | 38.7 | 30 |
| Naphthalene | 9.89 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 98.9 | 21-133 | 31.6 | 20 |
| Nitrobenzene | 10.6 | | 0.770 | 2.31 | ug/L | 10.00 | ND | 106 | 35-180 | 41.8 | 20 |
| N-Nitrosodimethylamine | 8.90 | | 1.11 | 3.33 | ug/L | 10.00 | ND | 89.0 | 40-140 | 39.0 | 20 |
| N-Nitrosodi-n-propylamine | 12.6 | | 1.10 | 3.30 | ug/L | 10.00 | ND | 126 | 0-230 | 47.1 | 20 |
| N-Nitrosodiphenylamine | 15.2 | | 0.380 | 1.14 | ug/L | 10.00 | ND | 152 | 40-140 | 45.5 | 20 |
| Pentachlorophenol | 13.8 | | 0.320 | 0.960 | ug/L | 10.00 | ND | 138 | 14-176 | 34.0 | 20 |
| Phenanthrene | 12.2 | | 0.450 | 1.35 | ug/L | 10.00 | ND | 122 | 54-120 | 41.4 | 20 |
| Phenol | 6.19 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 61.9 | 5-112 | 29.3 | 20 |
| Pyrene | 11.8 | | 0.220 | 0.660 | ug/L | 10.00 | ND | 118 | 52-115 | 36.7 | 20 |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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PSL - FPL St. Lucie Power Plant
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NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601541 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601541-MSD1)** | **Source: 16A0527-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Pyridine | 7.66 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 76.6 | 40-110 | 43.2 | 30 |
| *Surrogate: 2,4,6-Tribromophenol* | *63.2* | | | | ug/L | *50.00* | | *126* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *27.0* | | | | ug/L | *25.00* | | *108* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *42.4* | | | | ug/L | *50.00* | | *84.7* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *27.2* | | | | ug/L | *25.00* | | *109* | *50-150* | | |
| *Surrogate: Phenol-d6* | *31.8* | | | | ug/L | *50.00* | | *63.7* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *22.7* | | | | ug/L | *25.00* | | *90.8* | *50-150* | | |

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Tom Helton For Phoebe Brown, Central Lab Manager

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Blank (1601495-BLK1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | U | | 0.0840 | 0.237 | ug/L | | | | - | | |
| 1,1,1-Trichloroethane | U | | 0.0380 | 0.113 | ug/L | | | | - | | |
| 1,1,2,2-Tetrachloroethane | U | | 0.0690 | 0.207 | ug/L | | | | - | | |
| 1,1,2-Trichloroethane | U | | 0.0750 | 0.226 | ug/L | | | | - | | |
| 1,1-Dichloroethane | U | | 0.204 | 0.612 | ug/L | | | | - | | |
| 1,1-Dichloroethene | U | | 0.0590 | 0.176 | ug/L | | | | - | | |
| 1,1-Dichloropropene | U | | 0.120 | 0.359 | ug/L | | | | - | | |
| 1,2,3-Trichlorobenzene | U | | 0.250 | 0.751 | ug/L | | | | - | | |
| 1,2,3-Trichloropropane | U | | 0.122 | 0.366 | ug/L | | | | - | | |
| 1,2,4-Trichlorobenzene | U | | 0.248 | 0.745 | ug/L | | | | - | | |
| 1,2,4-Trimethylbenzene | U | | 0.211 | 0.633 | ug/L | | | | - | | |
| 1,2-Dibromo-3-chloropropane | U | | 0.236 | 0.708 | ug/L | | | | - | | |
| 1,2-Dibromoethane (EDB) | U | | 0.0710 | 0.213 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | U | | 0.193 | 0.580 | ug/L | | | | - | | |
| 1,2-Dichloroethane | U | | 0.0360 | 0.109 | ug/L | | | | - | | |
| 1,2-Dichloropropane | U | | 0.0450 | 0.136 | ug/L | | | | - | | |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Blank (1601495-BLK1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| 1,3,5-Trimethylbenzene | U | | 0.135 | 0.405 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | U | | 0.195 | 0.585 | ug/L | | | | - | | |
| 1,3-Dichloropropane | U | | 0.0730 | 0.220 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | U | | 0.257 | 0.770 | ug/L | | | | - | | |
| 2,2-Dichloropropane | U | | 0.401 | 1.20 | ug/L | | | | - | | |
| 2-Butanone (Methyl Ethyl Ketone) | U | | 0.299 | 0.898 | ug/L | | | | - | | |
| 2-Chloroethylvinyl ether | U | | 0.745 | 2.24 | ug/L | | | | - | | |
| 2-Chlorotoluene | U | | 0.129 | 0.388 | ug/L | | | | - | | |
| 2-Hexanone | U | | 0.445 | 1.34 | ug/L | | | | - | | |
| 4-Chlorotoluene | U | | 0.140 | 0.420 | ug/L | | | | - | | |
| 4-Methyl-2-pentanone | U | | 0.135 | 0.405 | ug/L | | | | - | | |
| Acetone | U | | 0.277 | 0.832 | ug/L | | | | - | | |
| Acrolein | U | | 0.303 | 0.909 | ug/L | | | | - | | |
| Acrylonitrile | U | | 0.160 | 0.479 | ug/L | | | | - | | |
| Benzene | U | | 0.0300 | 0.0900 | ug/L | | | | - | | |
| Bromobenzene | U | | 0.113 | 0.340 | ug/L | | | | - | | |

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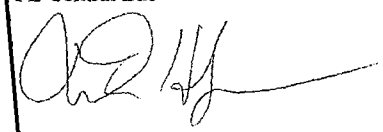
FPL Central Lab



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NELAC Certification #: E56078

**Reported:**
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## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Blank (1601495-BLK1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Bromochloromethane | U | | 0.0570 | 0.172 | ug/L | | | | - | | |
| Bromodichloromethane | U | | 0.0860 | 0.258 | ug/L | | | | - | | |
| Bromoform | U | | 0.138 | 0.414 | ug/L | | | | - | | |
| Bromomethane | U | | 0.132 | 0.397 | ug/L | | | | - | | |
| Carbon Tetrachloride | U | | 0.0520 | 0.156 | ug/L | | | | - | | |
| Chlorobenzene | U | | 0.0790 | 0.237 | ug/L | | | | - | | |
| Chloroethane | U | | 0.308 | 0.924 | ug/L | | | | - | | |
| Chloroform | U | | 0.0770 | 0.232 | ug/L | | | | - | | |
| Chloromethane | U | | 0.0480 | 0.144 | ug/L | | | | - | | |
| cis-1,2-Dichloroethene | U | | 0.213 | 0.639 | ug/L | | | | - | | |
| cis-1,3-Dichloropropene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Dibromochloromethane | U | | 0.0660 | 0.199 | ug/L | | | | - | | |
| Dibromomethane | U | | 0.0570 | 0.171 | ug/L | | | | - | | |
| Dichlorodifluoromethane | U | | 0.0940 | 0.283 | ug/L | | | | - | | |
| Ethyl Benzene | U | | 0.0840 | 0.252 | ug/L | | | | - | | |
| Hexachlorobutadiene | U | | 0.141 | 0.424 | ug/L | | | | - | | |

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## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Blank (1601495-BLK1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Isopropylbenzene | U | | 0.116 | 0.348 | ug/L | | | | - | | |
| m,p-Xylene | U | | 0.168 | 0.505 | ug/L | | | | - | | |
| Methylene Chloride | U | | 0.751 | 2.25 | ug/L | | | | - | | |
| Methyl-tert-butyl ether | U | | 0.0860 | 0.257 | ug/L | | | | - | | |
| Naphthalene | U | | 0.579 | 1.74 | ug/L | | | | - | | |
| n-Butyl Benzene | U | | 0.266 | 0.798 | ug/L | | | | - | | |
| n-Propylbenzene | U | | 0.109 | 0.328 | ug/L | | | | - | | |
| o-Xylene | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| p-Isopropyltoluene | U | | 0.197 | 0.592 | ug/L | | | | - | | |
| sec-Butyl Benzene | U | | 0.177 | 0.531 | ug/L | | | | - | | |
| Styrene | U | | 0.0960 | 0.287 | ug/L | | | | - | | |
| tert-Butylbenzene | U | | 0.193 | 0.578 | ug/L | | | | - | | |
| Tetrachloroethene | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| Toluene | U | | 0.0350 | 0.104 | ug/L | | | | - | | |
| trans-1,2-Dichloroethene | U | | 0.107 | 0.320 | ug/L | | | | - | | |
| trans-1,3-Dichloropropene | U | | 0.250 | 0.751 | ug/L | | | | - | | |

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## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Blank (1601495-BLK1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Trichloroethene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Trichlorofluoromethane | U | | 0.0700 | 0.211 | ug/L | | | | - | | |
| Vinyl chloride | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.21* | | | | ug/L | *5.000* | | *64.2* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *4.06* | | | | ug/L | *5.000* | | *81.2* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *4.18* | | | | ug/L | *5.000* | | *83.6* | *46-125* | | |
| **LCS (1601495-BS1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 19.4 | | 0.0840 | 0.237 | ug/L | 20.00 | | 97.2 | 70-130 | | |
| 1,1,1-Trichloroethane | 17.7 | | 0.0380 | 0.113 | ug/L | 20.00 | | 88.4 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 17.8 | | 0.0690 | 0.207 | ug/L | 20.00 | | 88.8 | 46-157 | | |
| 1,1,2-Trichloroethane | 20.1 | | 0.0750 | 0.226 | ug/L | 20.00 | | 101 | 52-150 | | |
| 1,1-Dichloroethane | 21.6 | | 0.204 | 0.612 | ug/L | 20.00 | | 108 | 59-155 | | |
| 1,1-Dichloroethene | 22.5 | | 0.0590 | 0.176 | ug/L | 20.00 | | 113 | 0-234 | | |
| 1,1-Dichloropropene | 20.9 | | 0.120 | 0.359 | ug/L | 20.00 | | 105 | 70-130 | | |
| 1,2,3-Trichlorobenzene | 20.3 | | 0.250 | 0.751 | ug/L | 20.00 | | 102 | 70-130 | | |

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NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **LCS (1601495-BS1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| 1,2,3-Trichloropropane | 19.8 | | 0.122 | 0.366 | ug/L | 20.00 | | 99.2 | 70-130 | | |
| 1,2,4-Trichlorobenzene | 18.9 | | 0.248 | 0.745 | ug/L | 20.00 | | 94.6 | 70-130 | | |
| 1,2,4-Trimethylbenzene | 19.5 | | 0.211 | 0.633 | ug/L | 20.00 | | 97.6 | 70-130 | | |
| 1,2-Dibromo-3-chloropropane | 15.5 | | 0.236 | 0.708 | ug/L | 20.00 | | 77.4 | 70-130 | | |
| 1,2-Dibromoethane (EDB) | 18.4 | | 0.0710 | 0.213 | ug/L | 20.00 | | 92.2 | 70-130 | | |
| 1,2-Dichlorobenzene | 20.7 | | 0.193 | 0.580 | ug/L | 20.00 | | 103 | 18-190 | | |
| 1,2-Dichloroethane | 19.8 | | 0.0360 | 0.109 | ug/L | 20.00 | | 99.2 | 49-155 | | |
| 1,2-Dichloropropane | 17.7 | | 0.0450 | 0.136 | ug/L | 20.00 | | 88.7 | 0-210 | | |
| 1,3,5-Trimethylbenzene | 20.3 | | 0.135 | 0.405 | ug/L | 20.00 | | 101 | 70-130 | | |
| 1,3-Dichlorobenzene | 21.8 | | 0.195 | 0.585 | ug/L | 20.00 | | 109 | 59-156 | | |
| 1,3-Dichloropropane | 17.9 | | 0.0730 | 0.220 | ug/L | 20.00 | | 89.3 | 70-130 | | |
| 1,4-Dichlorobenzene | 21.3 | | 0.257 | 0.770 | ug/L | 20.00 | | 107 | 18-190 | | |
| 2,2-Dichloropropane | 26.5 | J-2, | 0.401 | 1.20 | ug/L | 20.00 | | 133 | 70-130 | | |
| 2-Butanone (Methyl Ethyl Ketone) | 11.4 | J-2, | 0.299 | 0.898 | ug/L | 20.00 | | 57.1 | 70-130 | | |
| 2-Chloroethylvinyl ether | 13.5 | | 0.745 | 2.24 | ug/L | 20.00 | | 67.4 | 0-305 | | |
| 2-Chlorotoluene | 20.9 | | 0.129 | 0.388 | ug/L | 20.00 | | 104 | 70-130 | | |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **LCS (1601495-BS1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| 2-Hexanone | 13.4 | J-2, | 0.445 | 1.34 | ug/L | 20.00 | | 67.2 | 70-130 | | |
| 4-Chlorotoluene | 20.4 | | 0.140 | 0.420 | ug/L | 20.00 | | 102 | 70-130 | | |
| 4-Methyl-2-pentanone | 15.7 | | 0.135 | 0.405 | ug/L | 20.00 | | 78.4 | 70-130 | | |
| Acetone | 99.6 | | 0.277 | 0.832 | ug/L | 100.0 | | 99.6 | 70-130 | | |
| Acrolein | 122 | | 0.303 | 0.909 | ug/L | 100.0 | | 122 | 70-130 | | |
| Acrylonitrile | 20.1 | | 0.160 | 0.479 | ug/L | 20.00 | | 101 | 70-130 | | |
| Benzene | 20.4 | | 0.0300 | 0.0900 | ug/L | 20.00 | | 102 | 37-151 | | |
| Bromobenzene | 19.0 | | 0.113 | 0.340 | ug/L | 20.00 | | 95.0 | 70-130 | | |
| Bromochloromethane | 18.6 | | 0.0570 | 0.172 | ug/L | 20.00 | | 92.8 | 70-130 | | |
| Bromodichloromethane | 18.6 | | 0.0860 | 0.258 | ug/L | 20.00 | | 93.2 | 35-155 | | |
| Bromoform | 18.0 | | 0.138 | 0.414 | ug/L | 20.00 | | 90.1 | 45-169 | | |
| Bromomethane | 24.8 | | 0.132 | 0.397 | ug/L | 20.00 | | 124 | 0-242 | | |
| Carbon Tetrachloride | 17.6 | | 0.0520 | 0.156 | ug/L | 20.00 | | 88.2 | 70-140 | | |
| Chlorobenzene | 20.5 | | 0.0790 | 0.237 | ug/L | 20.00 | | 102 | 37-160 | | |
| Chloroethane | 30.1 | | 0.308 | 0.924 | ug/L | 20.00 | | 150 | 14-230 | | |
| Chloroform | 20.0 | | 0.0770 | 0.232 | ug/L | 20.00 | | 100 | 51-138 | | |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **LCS (1601495-BS1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| Chloromethane | 19.0 | | 0.0480 | 0.144 | ug/L | 20.00 | | 95.2 | 0-273 | | |
| cis-1,2-Dichloroethene | 21.2 | | 0.213 | 0.639 | ug/L | 20.00 | | 106 | 70-130 | | |
| cis-1,3-Dichloropropene | 17.2 | | 0.0500 | 0.151 | ug/L | 20.00 | | 86.1 | 0-227 | | |
| Dibromochloromethane | 18.9 | | 0.0660 | 0.199 | ug/L | 20.00 | | 94.4 | 53-149 | | |
| Dibromomethane | 22.1 | | 0.0570 | 0.171 | ug/L | 20.00 | | 110 | 70-130 | | |
| Dichlorodifluoromethane | 23.4 | | 0.0940 | 0.283 | ug/L | 20.00 | | 117 | 70-130 | | |
| Ethyl Benzene | 20.4 | | 0.0840 | 0.252 | ug/L | 20.00 | | 102 | 37-162 | | |
| Hexachlorobutadiene | 22.2 | | 0.141 | 0.424 | ug/L | 20.00 | | 111 | 70-130 | | |
| Isopropylbenzene | 19.7 | | 0.116 | 0.348 | ug/L | 20.00 | | 98.6 | 70-130 | | |
| m,p-Xylene | 41.6 | | 0.168 | 0.505 | ug/L | 40.00 | | 104 | 70-130 | | |
| Methylene Chloride | 20.2 | | 0.751 | 2.25 | ug/L | 20.00 | | 101 | 0-221 | | |
| Methyl-tert-butyl ether | 22.3 | | 0.0860 | 0.257 | ug/L | 20.00 | | 111 | 70-130 | | |
| Naphthalene | 16.6 | | 0.579 | 1.74 | ug/L | 20.00 | | 83.2 | 70-130 | | |
| n-Butyl Benzene | 18.4 | | 0.266 | 0.798 | ug/L | 20.00 | | 91.8 | 70-130 | | |
| n-Propylbenzene | 20.4 | | 0.109 | 0.328 | ug/L | 20.00 | | 102 | 70-130 | | |
| o-Xylene | 19.0 | | 0.0840 | 0.253 | ug/L | 20.00 | | 94.9 | 70-130 | | |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **LCS (1601495-BS1)** | | | Prepared & Analyzed: 01/20/2016 | | | | | | | | |
| p-Isopropyltoluene | 19.2 | | 0.197 | 0.592 | ug/L | 20.00 | | 96.2 | 70-130 | | |
| sec-Butyl Benzene | 20.3 | | 0.177 | 0.531 | ug/L | 20.00 | | 102 | 70-130 | | |
| Styrene | 22.5 | | 0.0960 | 0.287 | ug/L | 20.00 | | 112 | 70-130 | | |
| tert-Butylbenzene | 20.4 | | 0.193 | 0.578 | ug/L | 20.00 | | 102 | 70-130 | | |
| Tetrachloroethene | 23.1 | | 0.0840 | 0.253 | ug/L | 20.00 | | 115 | 64-148 | | |
| Toluene | 20.2 | | 0.0350 | 0.104 | ug/L | 20.00 | | 101 | 47-150 | | |
| trans-1,2-Dichloroethene | 21.8 | | 0.107 | 0.320 | ug/L | 20.00 | | 109 | 54-156 | | |
| trans-1,3-Dichloropropene | 15.3 | | 0.250 | 0.751 | ug/L | 20.00 | | 76.6 | 17-183 | | |
| Trichloroethene | 20.0 | | 0.0500 | 0.151 | ug/L | 20.00 | | 100 | 71-157 | | |
| Trichlorofluoromethane | 26.3 | | 0.0700 | 0.211 | ug/L | 20.00 | | 132 | 17-181 | | |
| Vinyl chloride | 19.8 | | 0.0840 | 0.253 | ug/L | 20.00 | | 99.0 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.98* | *J-1,* | | | ug/L | *5.000* | | *140* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *10.0* | *J-1,* | | | ug/L | *5.000* | | *201* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.62* | *J-1,* | | | ug/L | *5.000* | | *132* | *46-125* | | |
| **Matrix Spike (1601495-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601495-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 17.6 | | 0.0840 | 0.237 | ug/L | 20.00 | ND | 88.0 | 70-130 | | |
| 1,1,1-Trichloroethane | 14.4 | | 0.0380 | 0.113 | ug/L | 20.00 | ND | 72.2 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 15.5 | | 0.0690 | 0.207 | ug/L | 20.00 | ND | 77.4 | 46-157 | | |
| 1,1,2-Trichloroethane | 18.5 | | 0.0750 | 0.226 | ug/L | 20.00 | ND | 92.4 | 52-150 | | |
| 1,1-Dichloroethane | 19.7 | | 0.204 | 0.612 | ug/L | 20.00 | ND | 98.3 | 59-155 | | |
| 1,1-Dichloroethene | 19.9 | | 0.0590 | 0.176 | ug/L | 20.00 | ND | 99.4 | 0-234 | | |
| 1,1-Dichloropropene | 18.2 | | 0.120 | 0.359 | ug/L | 20.00 | ND | 91.1 | 70-130 | | |
| 1,2,3-Trichlorobenzene | 12.9 | | 0.250 | 0.751 | ug/L | 20.00 | ND | 64.4 | 70-130 | | |
| 1,2,3-Trichloropropane | 17.7 | | 0.122 | 0.366 | ug/L | 20.00 | ND | 88.3 | 70-130 | | |
| 1,2,4-Trichlorobenzene | 12.9 | | 0.248 | 0.745 | ug/L | 20.00 | ND | 64.6 | 70-130 | | |
| 1,2,4-Trimethylbenzene | 15.8 | | 0.211 | 0.633 | ug/L | 20.00 | ND | 79.0 | 70-130 | | |
| 1,2-Dibromo-3-chloropropane | 12.4 | | 0.236 | 0.708 | ug/L | 20.00 | ND | 61.9 | 70-130 | | |
| 1,2-Dibromoethane (EDB) | 16.8 | | 0.0710 | 0.213 | ug/L | 20.00 | ND | 84.0 | 70-130 | | |
| 1,2-Dichlorobenzene | 16.7 | | 0.193 | 0.580 | ug/L | 20.00 | ND | 83.4 | 18-190 | | |
| 1,2-Dichloroethane | 20.3 | | 0.0360 | 0.109 | ug/L | 20.00 | ND | 102 | 49-155 | | |
| 1,2-Dichloropropane | 15.4 | | 0.0450 | 0.136 | ug/L | 20.00 | ND | 76.8 | 0-210 | | |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601495-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| 1,3,5-Trimethylbenzene | 16.4 | | 0.135 | 0.405 | ug/L | 20.00 | ND | 81.8 | 70-130 | | |
| 1,3-Dichlorobenzene | 17.8 | | 0.195 | 0.585 | ug/L | 20.00 | ND | 89.0 | 59-156 | | |
| 1,3-Dichloropropane | 16.6 | | 0.0730 | 0.220 | ug/L | 20.00 | ND | 82.8 | 70-130 | | |
| 1,4-Dichlorobenzene | 17.3 | | 0.257 | 0.770 | ug/L | 20.00 | ND | 86.3 | 18-190 | | |
| 2,2-Dichloropropane | 16.3 | J-2, | 0.401 | 1.20 | ug/L | 20.00 | ND | 81.6 | 70-130 | | |
| 2-Butanone (Methyl Ethyl Ketone) | 17.3 | J-2, | 0.299 | 0.898 | ug/L | 20.00 | ND | 86.5 | 70-130 | | |
| 2-Chloroethylvinyl ether | U | | 0.745 | 2.24 | ug/L | 20.00 | ND | | 0-305 | | |
| 2-Chlorotoluene | 17.1 | | 0.129 | 0.388 | ug/L | 20.00 | ND | 85.3 | 70-130 | | |
| 2-Hexanone | 12.1 | J-2, | 0.445 | 1.34 | ug/L | 20.00 | ND | 60.4 | 70-130 | | |
| 4-Chlorotoluene | 16.7 | | 0.140 | 0.420 | ug/L | 20.00 | ND | 83.6 | 70-130 | | |
| 4-Methyl-2-pentanone | 14.1 | | 0.135 | 0.405 | ug/L | 20.00 | ND | 70.4 | 70-130 | | |
| Acetone | 95.5 | | 0.277 | 0.832 | ug/L | 100.0 | ND | 95.5 | 70-130 | | |
| Acrolein | 118 | | 0.303 | 0.909 | ug/L | 100.0 | ND | 118 | 70-130 | | |
| Acrylonitrile | 18.9 | | 0.160 | 0.479 | ug/L | 20.00 | ND | 94.4 | 70-130 | | |
| Benzene | 18.7 | | 0.0300 | 0.0900 | ug/L | 20.00 | ND | 93.6 | 37-151 | | |
| Bromobenzene | 16.8 | | 0.113 | 0.340 | ug/L | 20.00 | ND | 83.8 | 70-130 | | |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601495-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Bromochloromethane | 17.2 | | 0.0570 | 0.172 | ug/L | 20.00 | ND | 85.8 | 70-130 | | |
| Bromodichloromethane | 18.0 | | 0.0860 | 0.258 | ug/L | 20.00 | ND | 89.8 | 35-155 | | |
| Bromoform | 16.3 | | 0.138 | 0.414 | ug/L | 20.00 | ND | 81.5 | 45-169 | | |
| Bromomethane | 25.0 | | 0.132 | 0.397 | ug/L | 20.00 | ND | 125 | 0-242 | | |
| Carbon Tetrachloride | 13.7 | | 0.0520 | 0.156 | ug/L | 20.00 | ND | 68.6 | 70-140 | | |
| Chlorobenzene | 18.0 | | 0.0790 | 0.237 | ug/L | 20.00 | ND | 90.2 | 37-160 | | |
| Chloroethane | 26.2 | | 0.308 | 0.924 | ug/L | 20.00 | ND | 131 | 14-230 | | |
| Chloroform | 17.7 | | 0.0770 | 0.232 | ug/L | 20.00 | ND | 88.6 | 51-138 | | |
| Chloromethane | 19.3 | | 0.0480 | 0.144 | ug/L | 20.00 | ND | 96.4 | 0-273 | | |
| cis-1,2-Dichloroethene | 19.2 | | 0.213 | 0.639 | ug/L | 20.00 | ND | 95.8 | 70-130 | | |
| cis-1,3-Dichloropropene | 11.7 | | 0.0500 | 0.151 | ug/L | 20.00 | ND | 58.4 | 0-227 | | |
| Dibromochloromethane | 17.3 | | 0.0660 | 0.199 | ug/L | 20.00 | ND | 86.7 | 53-149 | | |
| Dibromomethane | 18.6 | | 0.0570 | 0.171 | ug/L | 20.00 | ND | 93.1 | 70-130 | | |
| Dichlorodifluoromethane | 20.2 | | 0.0940 | 0.283 | ug/L | 20.00 | ND | 101 | 70-130 | | |
| Ethyl Benzene | 17.2 | | 0.0840 | 0.252 | ug/L | 20.00 | ND | 85.8 | 37-162 | | |
| Hexachlorobutadiene | 15.1 | | 0.141 | 0.424 | ug/L | 20.00 | ND | 75.6 | 70-130 | | |

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FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601495-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Isopropylbenzene | 15.7 | | 0.116 | 0.348 | ug/L | 20.00 | ND | 78.4 | 70-130 | | |
| m,p-Xylene | 35.0 | | 0.168 | 0.505 | ug/L | 40.00 | ND | 87.4 | 70-130 | | |
| Methylene Chloride | 17.4 | | 0.751 | 2.25 | ug/L | 20.00 | ND | 87.0 | 0-221 | | |
| Methyl-tert-butyl ether | 20.5 | | 0.0860 | 0.257 | ug/L | 20.00 | ND | 102 | 70-130 | | |
| Naphthalene | 9.46 | | 0.579 | 1.74 | ug/L | 20.00 | ND | 47.3 | 70-130 | | |
| n-Butyl Benzene | 13.5 | | 0.266 | 0.798 | ug/L | 20.00 | ND | 67.4 | 70-130 | | |
| n-Propylbenzene | 16.3 | | 0.109 | 0.328 | ug/L | 20.00 | ND | 81.5 | 70-130 | | |
| o-Xylene | 16.3 | | 0.0840 | 0.253 | ug/L | 20.00 | ND | 81.6 | 70-130 | | |
| p-Isopropyltoluene | 14.8 | | 0.197 | 0.592 | ug/L | 20.00 | ND | 74.2 | 70-130 | | |
| sec-Butyl Benzene | 16.1 | | 0.177 | 0.531 | ug/L | 20.00 | ND | 80.4 | 70-130 | | |
| Styrene | 19.1 | | 0.0960 | 0.287 | ug/L | 20.00 | ND | 95.6 | 70-130 | | |
| tert-Butylbenzene | 16.3 | | 0.193 | 0.578 | ug/L | 20.00 | ND | 81.7 | 70-130 | | |
| Tetrachloroethene | 18.7 | | 0.0840 | 0.253 | ug/L | 20.00 | ND | 93.6 | 64-148 | | |
| Toluene | 17.5 | | 0.0350 | 0.104 | ug/L | 20.00 | ND | 87.7 | 47-150 | | |
| trans-1,2-Dichloroethene | 19.4 | | 0.107 | 0.320 | ug/L | 20.00 | ND | 97.2 | 54-156 | | |
| trans-1,3-Dichloropropene | 13.3 | | 0.250 | 0.751 | ug/L | 20.00 | ND | 66.7 | 17-183 | | |

Serial #: 02052016150147

FPL Central Lab

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601495-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Trichloroethene | 16.6 | | 0.0500 | 0.151 | ug/L | 20.00 | ND | 83.2 | 71-157 | | |
| Trichlorofluoromethane | 24.0 | | 0.0700 | 0.211 | ug/L | 20.00 | ND | 120 | 17-181 | | |
| Vinyl chloride | 20.2 | | 0.0840 | 0.253 | ug/L | 20.00 | ND | 101 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.49* | *J-1,* | | | ug/L | *5.000* | | *130* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *8.96* | *J-1,* | | | ug/L | *5.000* | | *179* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.58* | *J-1,* | | | ug/L | *5.000* | | *132* | *46-125* | | |
| **Matrix Spike Dup (1601495-MSD1)** | **Source: 16A0377-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 19.0 | | 0.0840 | 0.237 | ug/L | 20.00 | ND | 95.0 | 70-130 | 7.76 | 30 |
| 1,1,1-Trichloroethane | 16.1 | | 0.0380 | 0.113 | ug/L | 20.00 | ND | 80.3 | 52-162 | 10.7 | 30 |
| 1,1,2,2-Tetrachloroethane | 17.4 | | 0.0690 | 0.207 | ug/L | 20.00 | ND | 86.8 | 46-157 | 11.4 | 30 |
| 1,1,2-Trichloroethane | 19.7 | | 0.0750 | 0.226 | ug/L | 20.00 | ND | 98.6 | 52-150 | 6.50 | 30 |
| 1,1-Dichloroethane | 20.3 | | 0.204 | 0.612 | ug/L | 20.00 | ND | 101 | 59-155 | 3.06 | 30 |
| 1,1-Dichloroethene | 20.3 | | 0.0590 | 0.176 | ug/L | 20.00 | ND | 101 | 0-234 | 1.94 | 30 |
| 1,1-Dichloropropene | 17.2 | | 0.120 | 0.359 | ug/L | 20.00 | ND | 86.0 | 70-130 | 5.82 | 30 |
| 1,2,3-Trichlorobenzene | 19.4 | | 0.250 | 0.751 | ug/L | 20.00 | ND | 97.2 | 70-130 | 40.6 | 30 |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601495-MSD1)** | **Source: 16A0377-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 1,2,3-Trichloropropane | 20.0 | | 0.122 | 0.366 | ug/L | 20.00 | ND | 99.9 | 70-130 | 12.3 | 30 |
| 1,2,4-Trichlorobenzene | 17.6 | | 0.248 | 0.745 | ug/L | 20.00 | ND | 88.2 | 70-130 | 30.8 | 30 |
| 1,2,4-Trimethylbenzene | 17.0 | | 0.211 | 0.633 | ug/L | 20.00 | ND | 85.2 | 70-130 | 7.43 | 30 |
| 1,2-Dibromo-3-chloropropane | 15.6 | | 0.236 | 0.708 | ug/L | 20.00 | ND | 78.0 | 70-130 | 23.0 | 30 |
| 1,2-Dibromoethane (EDB) | 18.9 | | 0.0710 | 0.213 | ug/L | 20.00 | ND | 94.5 | 70-130 | 11.7 | 30 |
| 1,2-Dichlorobenzene | 18.6 | | 0.193 | 0.580 | ug/L | 20.00 | ND | 93.0 | 18-190 | 10.9 | 30 |
| 1,2-Dichloroethane | 20.1 | | 0.0360 | 0.109 | ug/L | 20.00 | ND | 100 | 49-155 | 1.09 | 30 |
| 1,2-Dichloropropane | 16.9 | | 0.0450 | 0.136 | ug/L | 20.00 | ND | 84.5 | 0-210 | 9.61 | 30 |
| 1,3,5-Trimethylbenzene | 17.6 | | 0.135 | 0.405 | ug/L | 20.00 | ND | 87.8 | 70-130 | 6.96 | 30 |
| 1,3-Dichlorobenzene | 19.5 | | 0.195 | 0.585 | ug/L | 20.00 | ND | 97.6 | 59-156 | 9.11 | 30 |
| 1,3-Dichloropropane | 18.1 | | 0.0730 | 0.220 | ug/L | 20.00 | ND | 90.4 | 70-130 | 8.78 | 30 |
| 1,4-Dichlorobenzene | 19.0 | | 0.257 | 0.770 | ug/L | 20.00 | ND | 95.2 | 18-190 | 9.75 | 30 |
| 2,2-Dichloropropane | 16.7 | J-2, | 0.401 | 1.20 | ug/L | 20.00 | ND | 83.7 | 70-130 | 2.48 | 30 |
| 2-Butanone (Methyl Ethyl Ketone) | 17.0 | J-2, | 0.299 | 0.898 | ug/L | 20.00 | ND | 85.2 | 70-130 | 1.46 | 30 |
| 2-Chloroethylvinyl ether | U | | 0.745 | 2.24 | ug/L | 20.00 | ND | | 0-305 | | 30 |
| 2-Chlorotoluene | 18.3 | | 0.129 | 0.388 | ug/L | 20.00 | ND | 91.6 | 70-130 | 7.18 | 30 |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601495-MSD1)** | **Source: 16A0377-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| 2-Hexanone | 14.4 | J-2, | 0.445 | 1.34 | ug/L | 20.00 | ND | 72.0 | 70-130 | 17.6 | 30 |
| 4-Chlorotoluene | 17.8 | | 0.140 | 0.420 | ug/L | 20.00 | ND | 89.1 | 70-130 | 6.43 | 30 |
| 4-Methyl-2-pentanone | 16.0 | | 0.135 | 0.405 | ug/L | 20.00 | ND | 80.1 | 70-130 | 13.0 | 30 |
| Acetone | 103 | | 0.277 | 0.832 | ug/L | 100.0 | ND | 103 | 70-130 | 7.52 | 30 |
| Acrolein | 127 | | 0.303 | 0.909 | ug/L | 100.0 | ND | 127 | 70-130 | 7.04 | 30 |
| Acrylonitrile | 20.5 | | 0.160 | 0.479 | ug/L | 20.00 | ND | 102 | 70-130 | 8.09 | 30 |
| Benzene | 19.3 | | 0.0300 | 0.0900 | ug/L | 20.00 | ND | 96.3 | 37-151 | 2.90 | 30 |
| Bromobenzene | 18.1 | | 0.113 | 0.340 | ug/L | 20.00 | ND | 90.6 | 70-130 | 7.86 | 30 |
| Bromochloromethane | 18.3 | | 0.0570 | 0.172 | ug/L | 20.00 | ND | 91.5 | 70-130 | 6.37 | 30 |
| Bromodichloromethane | 19.0 | | 0.0860 | 0.258 | ug/L | 20.00 | ND | 95.1 | 35-155 | 5.68 | 30 |
| Bromoform | 18.2 | | 0.138 | 0.414 | ug/L | 20.00 | ND | 90.8 | 45-169 | 10.7 | 30 |
| Bromomethane | 25.9 | | 0.132 | 0.397 | ug/L | 20.00 | ND | 130 | 0-242 | 3.77 | 30 |
| Carbon Tetrachloride | 15.2 | | 0.0520 | 0.156 | ug/L | 20.00 | ND | 76.0 | 70-140 | 10.2 | 30 |
| Chlorobenzene | 19.1 | | 0.0790 | 0.237 | ug/L | 20.00 | ND | 95.6 | 37-160 | 5.92 | 30 |
| Chloroethane | 24.2 | | 0.308 | 0.924 | ug/L | 20.00 | ND | 121 | 14-230 | 7.82 | 30 |
| Chloroform | 19.6 | | 0.0770 | 0.232 | ug/L | 20.00 | ND | 98.0 | 51-138 | 9.97 | 30 |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601495-MSD1)** | **Source: 16A0377-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chloromethane | 19.5 | | 0.0480 | 0.144 | ug/L | 20.00 | ND | 97.7 | 0-273 | 1.29 | 30 |
| cis-1,2-Dichloroethene | 20.2 | | 0.213 | 0.639 | ug/L | 20.00 | ND | 101 | 70-130 | 5.44 | 30 |
| cis-1,3-Dichloropropene | 12.4 | | 0.0500 | 0.151 | ug/L | 20.00 | ND | 61.8 | 0-227 | 5.66 | 30 |
| Dibromochloromethane | 19.1 | | 0.0660 | 0.199 | ug/L | 20.00 | ND | 95.6 | 53-149 | 9.76 | 30 |
| Dibromomethane | 22.3 | | 0.0570 | 0.171 | ug/L | 20.00 | ND | 112 | 70-130 | 18.0 | 30 |
| Dichlorodifluoromethane | 17.2 | | 0.0940 | 0.283 | ug/L | 20.00 | ND | 86.2 | 70-130 | 15.9 | 30 |
| Ethyl Benzene | 17.8 | | 0.0840 | 0.252 | ug/L | 20.00 | ND | 89.0 | 37-162 | 3.78 | 30 |
| Hexachlorobutadiene | 18.2 | | 0.141 | 0.424 | ug/L | 20.00 | ND | 91.0 | 70-130 | 18.4 | 30 |
| Isopropylbenzene | 16.2 | | 0.116 | 0.348 | ug/L | 20.00 | ND | 81.2 | 70-130 | 3.63 | 30 |
| m,p-Xylene | 36.5 | | 0.168 | 0.505 | ug/L | 40.00 | ND | 91.2 | 70-130 | 4.17 | 30 |
| Methylene Chloride | 18.3 | | 0.751 | 2.25 | ug/L | 20.00 | ND | 91.4 | 0-221 | 4.88 | 30 |
| Methyl-tert-butyl ether | 22.7 | | 0.0860 | 0.257 | ug/L | 20.00 | ND | 114 | 70-130 | 10.4 | 30 |
| Naphthalene | 16.3 | | 0.579 | 1.74 | ug/L | 20.00 | ND | 81.6 | 70-130 | 53.3 | 30 |
| n-Butyl Benzene | 14.7 | | 0.266 | 0.798 | ug/L | 20.00 | ND | 73.7 | 70-130 | 9.00 | 30 |
| n-Propylbenzene | 17.0 | | 0.109 | 0.328 | ug/L | 20.00 | ND | 84.9 | 70-130 | 4.09 | 30 |
| o-Xylene | 16.8 | | 0.0840 | 0.253 | ug/L | 20.00 | ND | 84.2 | 70-130 | 3.02 | 30 |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601495 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601495-MSD1)** | **Source: 16A0377-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| p-Isopropyltoluene | 15.9 | | 0.197 | 0.592 | ug/L | 20.00 | ND | 79.4 | 70-130 | 6.71 | 30 |
| sec-Butyl Benzene | 16.8 | | 0.177 | 0.531 | ug/L | 20.00 | ND | 83.8 | 70-130 | 4.20 | 30 |
| Styrene | 20.0 | | 0.0960 | 0.287 | ug/L | 20.00 | ND | 100 | 70-130 | 4.75 | 30 |
| tert-Butylbenzene | 17.0 | | 0.193 | 0.578 | ug/L | 20.00 | ND | 84.8 | 70-130 | 3.72 | 30 |
| Tetrachloroethene | 18.8 | | 0.0840 | 0.253 | ug/L | 20.00 | ND | 94.2 | 64-148 | 0.639 | 30 |
| Toluene | 18.6 | | 0.0350 | 0.104 | ug/L | 20.00 | ND | 93.2 | 47-150 | 6.03 | 30 |
| trans-1,2-Dichloroethene | 19.5 | | 0.107 | 0.320 | ug/L | 20.00 | ND | 97.4 | 54-156 | 0.103 | 30 |
| trans-1,3-Dichloropropene | 14.7 | | 0.250 | 0.751 | ug/L | 20.00 | ND | 73.3 | 17-183 | 9.43 | 30 |
| Trichloroethene | 18.4 | | 0.0500 | 0.151 | ug/L | 20.00 | ND | 92.0 | 71-157 | 9.93 | 30 |
| Trichlorofluoromethane | 21.6 | | 0.0700 | 0.211 | ug/L | 20.00 | ND | 108 | 17-181 | 10.3 | 30 |
| Vinyl chloride | 19.2 | | 0.0840 | 0.253 | ug/L | 20.00 | ND | 96.0 | 0-251 | 5.18 | 30 |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.87* | *J-1,* | | | ug/L | *5.000* | | *137* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *9.68* | *J-1,* | | | ug/L | *5.000* | | *194* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.63* | *J-1,* | | | ug/L | *5.000* | | *133* | *46-125* | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

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**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601524 - SM5540C** | | | | | | | | | | | |
| **Blank (1601524-BLK1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | U | | 0.0603 | 0.181 | mg/L | | | | - | | |
| **LCS (1601524-BS1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.473 | | 0.0603 | 0.181 | mg/L | 0.5000 | | 94.6 | 90-110 | | |
| **Duplicate (1601524-DUP1)** | | **Source: 16A0377-01** | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | U | | 0.0603 | 0.181 | mg/L | | ND | | - | | 20 |
| **Matrix Spike (1601524-MS1)** | | **Source: 16A0377-01** | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.486 | | 0.0603 | 0.181 | mg/L | 0.5000 | ND | 97.2 | 90-110 | | |
| **Matrix Spike Dup (1601524-MSD1)** | | **Source: 16A0377-01** | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.492 | | 0.0603 | 0.181 | mg/L | 0.5000 | ND | 98.4 | 90-110 | 1.23 | 20 |
| **Batch 1601526 - SM 2120B** | | | | | | | | | | | |
| **Blank (1601526-BLK1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Color | 0/5.31 | | 1.00 | 3.00 | Pt-Co | | | | - | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

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NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601526 - SM 2120B** | | | | | | | | | | | |
| **LCS (1601526-BS1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Color | 20/1.58 | | 1.00 | 3.00 | Pt-Co | 20.00 | | 100 | 90-110 | | |
| **Duplicate (1601526-DUP1)** | | **Source: 16A0510-01** | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Color | 0/8.93 | | 1.00 | 3.00 | Pt-Co | | 0/8.72 | | - | | 20 |
| **Batch 1601546 - EPA 335.4** | | | | | | | | | | | |
| **Blank (1601546-BLK1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Cyanide (total) | U | | 0.00230 | 0.00690 | mg/L | | | | - | | |
| **LCS (1601546-BS1)** | | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Cyanide (total) | 0.197 | | 0.00230 | 0.00690 | mg/L | 0.2000 | | 98.5 | 90-110 | | |
| **Duplicate (1601546-DUP1)** | | **Source: 16A0311-01** | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Cyanide (total) | 0.0173 | | 0.00230 | 0.00690 | mg/L | | 0.0183 | | - | 5.62 | 20 |
| **Matrix Spike (1601546-MS1)** | | **Source: 16A0311-01** | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Cyanide (total) | 0.177 | J-3, | 0.00230 | 0.00690 | mg/L | 0.2000 | 0.0183 | 79.4 | 90-110 | | |

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NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601546 - EPA 335.4** | | | | | | | | | | | |
| **Matrix Spike (1601546-MS2)** | **Source: 16A0513-01** | | Prepared & Analyzed: 01/21/2016 | | | | | | | | |
| Cyanide (total) | 0.190 | | 0.00230 | 0.00690 | mg/L | 0.2000 | ND | 95.0 | 90-110 | | |
| **Batch 1601556 - TOC SM 5310C** | | | | | | | | | | | |
| **Blank (1601556-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | U | | 0.168 | 0.504 | mg/L | | | | - | | |
| **LCS (1601556-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | 4.71 | | 0.168 | 0.504 | mg/L | 5.000 | | 94.2 | 80-120 | | |
| **Duplicate (1601556-DUP1)** | **Source: 16A0510-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | U | | 0.168 | 0.504 | mg/L | | ND | | - | | 20 |
| **Matrix Spike (1601556-MS1)** | **Source: 16A0510-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | 5.57 | | 0.168 | 0.504 | mg/L | 5.000 | ND | 111 | 80-120 | | |
| **Matrix Spike Dup (1601556-MSD1)** | **Source: 16A0510-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | 5.57 | | 0.168 | 0.504 | mg/L | 5.000 | ND | 111 | 80-120 | 0.00 | 20 |

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Automated Wet chemistry - Quality Control

**Analyzed at: Florida-Spectrum TNI #: E87671**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 42954 - EPA 420.1** | | | | | | | | | | | |
| **Blank (42954-BLK1)** | | | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | U | | 0.0340 | 0.102 | mg/L | | | | - | | |
| **LCS (42954-BS1)** | | | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | 1.00 | | 0.0340 | 0.102 | mg/L | 1 | | 100 | 70-130 | | |
| **Matrix Spike (42954-MS1)** | | **Source: 16A0595-01** | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | 1.00 | | 0.0340 | 0.102 | mg/L | 1 | <0.034 | 100 | 70-130 | | |
| **Matrix Spike Dup (42954-MSD1)** | | **Source: 16A0595-01** | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | 1.01 | | 0.0340 | 0.102 | mg/L | 1 | <0.034 | 101 | 70-130 | 1 | 30 |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Metals - Quality Control

**Analyzed at: Jupiter Environmental Labs TNI # E86546**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch MHG1813 - EPA 1631E** | | | | | | | | | | | |
| **Blank (MHG1813-BLK1)** | | | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | U | | 0.00025 | 0.001 | ug/L | | | | - | | |
| **LCS (MHG1813-BS1)** | | | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | 0.0122 | | 0.00025 | 0.001 | ug/L | 0.01 | | 122 | 77-123 | | |
| **Matrix Spike (MHG1813-MS1)** | | **Source: 16A0377-01** | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | 0.00721 | | 0.00025 | 0.001 | ug/L | 0.005 | 0.0011 | 122 | 71-125 | | |
| **Matrix Spike Dup (MHG1813-MSD1)** | | **Source: 16A0377-01** | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | 0.00697 | | 0.00025 | 0.001 | ug/L | 0.005 | 0.0011 | 117 | 71-125 | 3.39 | 24 |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**LIST OF BOTTLES RECEIVED**

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **16A0377-01 D001 Point of Discharge** | | |
| | A | 500mL Clear Glass - Unpres |
| | B | Amber Unpres - 1000mL |
| | C | Amber Unpres - 1000mL |
| | D | Plastic 250 mL - HN03 |
| | E | Poly H2SO4 - 250mL |
| | F | Poly HNO3 - 250 mL |
| | G | Poly HNO3 - 500mL |
| | H | Poly Unpres - 1000mL |
| | I | Poly Unpres - 500mL |
| | J | VOA Vial - H2SO4 |
| | K | VOA Vial - H2SO4 |
| **16A0377-02 POD Grab - 1** | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

| | |
|---|---|
| A | 40 mL Voa Vial - HCl |
| B | 125mL Amber H3PO4+CuSO4 |
| C | 40mL Clear NaOH |
| D | Amber H2SO4 - 1000mL |
| E | Poly NaOH - 250mL |

**16A0377-03 POD Grab - 2**

| | |
|---|---|
| A | 40 mL Voa Vial - HCl |
| B | 40mL Amber H3PO4+CuSO4 |
| C | 40mL Clear NaOH |
| D | Amber H2SO4 - 1000mL |

**16A0377-04 POD Grab - 3**

| | |
|---|---|
| A | 40 mL Voa Vial - HCl |
| B | 40mL Amber H3PO4+CuSO4 |
| C | 40mL Clear NaOH |
| D | Amber H2SO4 - 1000mL |

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

**16A0377-05 POD Grab - 4**

| | |
|---|---|
| A | 40 mL Voa Vial - HCl |
| B | 40mL Amber H3PO4+CuSO4 |
| C | 40mL Clear NaOH |
| D | Amber H2SO4 - 1000mL |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

## Notes and Definitions

| | |
|---|---|
| J8 | Duplicate RPD failed to meet QC limits. Batch is accepted based on LCS/MS within acceptable limits. |
| J-3 | The matrix spike recovery exceeded method acceptance limits indicating matrix interference. |
| J-2 | The laboratory control sample recovery exceeded method acceptance limits. |
| J2 | The MS/MSD failed to meet the established quality control criteria for either precision or accuracy due to high levels of target analytes;. However the Laboratory Control Spike is within QA/QC limits. |
| J-1 | Surrogate recovery limits have been exceeded. |
| J1 | The Matrix Spike and/or Matrix spike duplicate was outside control limits due to potential matrix interference. Batch is accepted on BKS/BSD recoveries within control limits. |
| DL1 | Sample was diluted due to high levels of non-target analyte interference. |
| D-1 | Dilution needed due to matrix interference or foamy matrix |
| A | Value reported is the arithmetic mean (average) of two or more determinations. This code shall be used if the reported value is the average of results for two or more discrete and separate samples. These samples shall have been processed and analyzed inde |
| J-3 | [Undefined] |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |

Serial #: 02052016150147

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0377

**FPL Central Laboratory**
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**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/05/2016 15:01

Attn: Chrissi-lee Williams

| | |
|---|---|
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 02052016150147

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

**CHAIN OF CUSTODY / BOTTLE ORDER**

16A0377

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - D001 POD Permit Renewal Pro | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | To be Reported from Grab | | | 40 mL Voa Vial - HCl | 0 | EPA 624 |
| 01 | D001 Point of Discharge | Water | Composite | To be Reported from Grabs | | | 40mL Amber H3PO4+CuSO4 | 0 | SUB Phenols |
| 01 | D001 Point of Discharge | Water | Composite | To be Reported from Grabs | | | 40mL Clear NaOH | 0 | SUB Cyanide |
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | 500mL Clear Glass - Unpres | 1 | SUB Low Level Mercury |
| 01 | D001 Point of Discharge | Water | Composite | To be Reported from Grabs | | | Amber H2SO4 - 1000mL | 0 | Wet Chem - Oil and Grease |
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | Amber Unpres - 1000mL | 2 | EPA 625 |

**Lot Number of Preservative Used:** F5E0613-HNO3 **Amount Used:** 0.3 mL **Lot Number of Preservative Used:** F802118-H2SO4 **Amount Used:** 1.0 mL

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

Bottles used F5J2601, F5G2203, F5H0504

Rcvd in ICE in Green Cooler @ 4.1°C
Rcvd in ICE in Blue Cooler @ 3.6°C

X _____ 1/20/16 - 1023
Relinquished By Date/Time

_____
Relinquished By Date/Time

1/20/16 1023
Received By Date/Time

_____
Received By Date/Time

Document Control #: 453 revision 0

CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Pro
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | Plastic 250 mL - HN03 | 1 | ME - Antimony by 200.7<br>ME - Boron by EPA 200.7<br>ME - Molybdenum by EPA 200.7<br>ME - Tin by EPA 200.7<br>ME - Titanium by EPA 200.7 |
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | Poly H2SO4 - 250mL | 1 | Wet Chem - Ammonia _Distilled by EPA 350.1<br>Wet Chem - COD<br>Wet Chem - TKN by EPA 351.2<br>Wet Chem - Total Nitrogen<br>Wet Chem - Total Organic Nitrogen<br>Wet Chem - Total Phosphorus by SM4500-P F |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** 1 **Lot Number of Preservative Used:** _____ **Amount Used:** _____

See page

Relinquished By _____ Date/Time _____ Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____ Received By _____ Date/Time _____

Page 87 of 98

Document Control #: 453 revision 0

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Pro
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | Poly HNO3 - 250 mL | 1 | ME - Arsenic by 200.7<br>ME - Beryllium by 200.7<br>ME - Cadmium by 200.7<br>ME - Chromium by 200.7<br>ME - Copper Total 200.7<br>ME - Iron by 200.7<br>ME - Lead by 200.7<br>ME - Magnesium by 200.7<br>ME - Nickel by 200.7<br>ME - Selenium by 200.7<br>ME - Silver by 200.7<br>ME - Thallium by EPA 200.7<br>ME - Zinc by 200.7 |
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | Poly HNO3 - 500mL | 1 | SUB - EPA 900 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

See page 4

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

Document Control #: 453 revision 0

## CHAIN OF CUSTODY / BOTTLE ORDER

16A0377

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Pro
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | Poly Unpres - 1000mL | 1 | SUB - Color by SM2120B<br>SUB - MBAS by SM5540C<br>SUB CBOD |
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | Poly Unpres - 500mL | 1 | Wet Chem - Bromide<br>Wet Chem - Conductivity<br>Wet Chem - Fluoride<br>Wet Chem - Nitrate<br>Wet Chem - Nitrite<br>Wet Chem - Sulfate<br>Wet Chem - TSS |
| 01 | D001 Point of Discharge | Water | Composite | 1/20/16 | 0805 | JP | VOA Vial - H2SO4 | 2 | SUB - TOC |
| 02 | POD Grab - 1 | Water | Grab | 1/19/16 | 0900 | JP | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 02 | POD Grab - 1 | Water | Grab | 1/19/16 | 0900 | JP | 125 ~~40~~mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Pro
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 02 | POD Grab - 1 | Water | Grab | 1/19/16 | 0900 | JP | 40mL Clear NaOH | 1 | SUB Cyanide |
| 02 | POD Grab - 1 | Water | Grab | 1/19/16 | 0900 | JP | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 02 | POD Grab - 1 | Water | Grab | 1/19/16 | 0900 | JP | Poly Na2S2O3 - 125mL | 1 | SUB - Fecal Coliform by SM9222D |
| 03 | POD Grab - 2 | Water | Grab | 1/19/16 | 1500 | JP | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 03 | POD Grab - 2 | Water | Grab | 1/19/16 | 1500 | JP | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 03 | POD Grab - 2 | Water | Grab | 1/19/16 | 1500 | JP | 40mL Clear NaOH | 1 | SUB Cyanide |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____



See Page 1

**linquished By** **Date/Time** **Relinquished By** **Date/Time**

**ceived By** **Date/Time** **Received By** **Date/Time**

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

Client: PSL - FPL St. Lucie Power Plant
Project: PSL - D001 POD Permit Renewal Pro

Project Manager: Chrissi-lee Williams
Project Number: PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 03 | POD Grab - 2 | Water | Grab | 1/19/16 | 1500 | JP | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 04 | POD Grab - 3 | Water | Grab | 1/19/16 | 2100 | DT | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 04 | POD Grab - 3 | Water | Grab | 1/19/16 | 2100 | DT | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 04 | POD Grab - 3 | Water | Grab | 1/19/16 | 2100 | DT | 40mL Clear NaOH | 1 | SUB Cyanide |
| 04 | POD Grab - 3 | Water | Grab | 1/19/16 | 2100 | DT | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 05 | POD Grab - 4 | Water | Grab | 1/20/16 | 0300 | DT | 40 mL Voa Vial - HCl | 1 | EPA 624 |

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

See page 1

Relinquished By _____ Date/Time _____ Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____ Received By _____ Date/Time _____

CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

Client: PSL - FPL St. Lucie Power Plant
Project: PSL - D001 POD Permit Renewal Pro

Project Manager: Chrissi-lee Williams
Project Number: PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 05 | POD Grab - 4 | Water | Grab | 1/20/16 | 0300 | DT | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 05 | POD Grab - 4 | Water | Grab | 1/20/16 | 0300 | DT | 40mL Clear NaOH | 1 | SUB Cyanide |
| 05 | POD Grab - 4 | Water | Grab | 1/20/16 | 0300 | DT | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 06 | Intake | Water | Composite | | | | 40 mL Voa Vial - HCl | 0 | EPA 624 |
| 06 | Intake | Water | Composite | | | | 40mL Amber H3PO4+CuSO4 | 0 | SUB Phenols |
| 06 | Intake | Water | Composite | | | | 40mL Clear NaOH | 0 | SUB Cyanide |

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

See page 7

Relinquished By _____ Date/Time _____ Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____ Received By _____ Date/Time _____

# FPL Central Lab
## List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative | |
|---|---|---|---|---|
| DOOI-C | P | 500 | ICE | ✓ I |
| | | 250 | $H_2SO_4$ | ✓ E |
| | | 250 | $HNO_3$ | ✓ D |
| | | 250 | $HNO_3$ | ✓ F |
| | | 500 | $HNO_3$ | ✓ G |
| | | 1L | ICE | H |
| | G | 500 | ICE | ✓ A |
| | | 1L | | ✓ B |
| | | 1L | | ✓ C |
| | | 40mL | $H_2SO_4$ | ✓ J |
| | | | | ✓ K |
| POD Grab-1 | P | 250 | $NaOH$ | ✓ E |
| | G | 1L | $H_2SO_4$ | ✓ D |
| | G | 125 Amber | $H_3PO_4 + CuSO_4$ | ✓ B |
| | G | 40mL Clear | HCl | ✓ A |
| | | 40mL Amber | $NaOH$ | ✓ C |
| POD Grab-2 | G | 1L | $H_2SO_4$ | ✓ D |
| -3 | | 40mL Amber | $H_3PO_4 + CuSO_4$ | ✓ B |
| -4 | | 40mL Amber | $NaOH$ | ✓ C |
| | | 40mL Clear | HCl | ✓ A |

Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 01/20/16 1023
Chain of Custody ID: 1640377
Initials: TM

Central Laboratory

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | (Yes) | No | N/A | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | (N/A) | |
| #3. Shipping container in good condition? | (Yes) | No | None | |
| #4. Chain of Custody (COC) present? | (Yes) | No | | |
| #5. COC signed when relinquished? | (Yes) | No | | |
| #6. Samples received in ice? 3.6°C / 4.1°C<br>If NO? Temp = ___ °C<br>Temp = > 6°C? Management/customer notified? | (Yes)<br><br>Yes | No<br><br>No | N/A<br><br>Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | (Yes) | No | | |
| #8. Container label(s) legible and intact? | (Yes) | No | | |
| #9. Any missing/extra samples? | Yes | (No) | | |
| #10. COC signed when received? | (Yes) | No | | |
| #11. Sample analysis instructions complete on COC? | (Yes) | No | | |
| #12. Sample matrix/properties agree with COC? | (Yes) | No | | |
| #13. Samples in proper container/bottle? | (Yes) | No | | |
| #14. Sample container(s) intact? | (Yes) | No | | |
| #15. Samples have proper chemical preservation?<br>If NO? a. Chemical preservation added: ___<br>Lot#: ___ Amount added: ___<br>Date: ___ Time: ___ Initials: ___<br>b. pH after 24 hours: ___<br>Date: ___ Time: ___ Initials: ___ | (Yes) | No | N/A | pH= $HNO_3$ < 2<br>$H_2SO_4$ < 2 |
| #16. Sufficient sample amount for indicated test(s)? | (Yes) | No | | |
| #17. All samples received within sufficient hold time (HT)? | (Yes) | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration?<br>Date: 1/20/16 Time: 1030 Initials: TM | (Yes) | No | N/A | |
| #19. Subcontract of sample(s)? | (Yes) | No | | |
| #20. VOC samples have zero headspace?<br>If NO? Bubble size (mm):<br>Sample ID: ___ a. ___ b. ___ c. ___ d. ___<br>___ a. ___ b. ___ c. ___ d. ___<br>___ a. ___ b. ___ c. ___ d. ___<br>___ a. ___ b. ___ c. ___ d. ___<br>___ a. ___ b. ___ c. ___ d. ___<br>___ a. ___ b. ___ c. ___ d. ___ | (Yes) | No | N/A | |
| #21. Trip blank received where volatiles requested? | Yes | (No) | N/A | |

Nonconformance Documentation

Customer: ___ Contacted by: ___ Date/Time: ___

Regarding: ___

Corrective Action: ___

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

Document Control # 468 Revision 0 07/25/14

**Surface Water Sampling Log**

Site: FPL - Port St Lucie
Project No: FE2724

| Date | Time | Sample Name | pH std units | Specific Conductivity ~~µS/cm~~ mS/cm | Temperature °C | Total Residual Chlorine mg/L $Cl_2$ | ORP mV |
|---|---|---|---|---|---|---|---|
| 12/14/15 | 1030 | I-008 EPI-SE | 7.23 | 3.258 | 26.54 | 0.03 | 200.8 |
| 12/21/15 | 0900 | Intake | 7.36 | 53.39 | 23.24 | 0.24 | 60.0 |
| 12/21/15 | 1100 | SGB 1A | 9.69 | 0.513 | 24.81 | 0.11 | -114.3 |
| 1/19/16 | 0900 | POD | 7.22 | 55.55 | 28.96 | 0.23 | 221.9 |
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will be resampled

J:\adminshar/rem-forms/sw_samp

**Geosyntec Consultants**
**Water Quality Instrument Calibration Form**

Project/Site: FPL  Project #: FE2724  Field Personnel: Julianne Payne (JP)

Water Quality Meter - Model/Serial #: YSI 556 / 12F102264  Turbidimeter - Model/Serial # Hach 2100Q/12120C022138

| Dissolved Oxygen | DEP SOP FT 1500 | Date | Time | Temp (°C) | Saturation (mg/L)[1] | Reading (mg/L) | Reading (%) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Acceptance Criteria: +/-0.3mg/L | | |
| (CAL) ICV CCV | | 1/19/16 | 0805 | 19.3 | 9.220 | 9.22 | 100.0 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 0.1 - 10 NTU Std 10 NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 10% | |
| CAL (ICV) CCV | 1/19/16 | 10.3 | (P) F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| Specific Conductance | DEP SOP FT 1200 | Date | Time | Standard (mS/cm) | Standard Lot # | Standard Exp. Date | Reading (mS/cm) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Acceptance Criteria: +/- 5% | | |
| (CAL) ICV CCV | | 1/19/16 | 0810 | 1413 | 115560 | 3/26/16 | 1413 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 11 - 40 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 8% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| pH | DEP SOP FT 1100 | Date | Time | Standard (SU) | Standard Lot # | Standard Exp. Date | Reading (SU) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Acceptance Criteria: +/-0.2 SU | | |
| (CAL) ICV CCV | | 1/19/16 | 0815 | 7.00 | 1502868 | Jan 2017 | 7.00 | (P) F |
| (CAL) ICV CCV | | 1 | 0818 | 10.00 | 2801389 | Aug 2016 | 10.00 | (P) F |
| (CAL) ICV CCV | | ↓ | 0821 | 4.00 | 2502557 | Jan 2017 | 3.99 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 41 - 100 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 6.5% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| ORP | SOP N/A | Date | Time | Std. mV @ Temp °C | Standard Lot # | Standard Exp. Date | Reading (mV) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Geosyntec Acceptance Criteria: +/- 5% | | |
| (CAL) ICV CCV | | 1/19/16 | 0825 | 240.0 | 8309 | 9/30/19 | 240.0 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| >100 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 5% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

Specific Conductance Probe Cleaned? Yes (No)  Disolved Oxygen membrane Changed? Yes (No)

1. See Table FS 2200-2 on the back of this form

CAL - Initial Calibration
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification

Comments:

Allow adequate time for the dissolved oxygen sensor to equilibrate during air calibration
Calibrate specific conductance using at least two standards that bracket the range of expected sample readings (unless readings < 0.1 mS/cm then one standard of 0.1 mS/cm is acceptable)
Calibrate pH using at least two standards (typ. pH 4 and 7) that bracket the range of expected sample readings; always start with pH 7; add a third calibration point if needed (i.e. pH > 7)
If parameter fails to calibrate within SOP acceptance criteria then append sample results with a "J" qualifier

Geosyntec consultants

## Geosyntec Consultants
## Water Quality Instrument Calibration Form

Project/Site: FPL  Project #: FE2724  Field Personnel: Julianne Payne (JP)

Water Quality Meter - Model/Serial #: YSI 556 - 10J101248  Turbidimeter - Model/Serial # N/A

| Dissolved Oxygen | DEP SOP FT 1500 | Date | Time | Temp (°C) | Saturation (mg/L)[1] | Reading (mg/L) | Reading (%) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Acceptance Criteria: +/-0.3mg/L | | |
| (CAL) ICV CCV | | 12/21/15 | 0750 | 23.2 | 8.546 | 8.54 (JP) | 99.9 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 0.1 - 10 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 10% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| Specific Conductance | DEP SOP FT 1200 | Date | Time | Standard (mS/cm) | Standard Lot # | Standard Exp. Date | Reading (mS/cm) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Acceptance Criteria: +/- 5% | |
| (CAL) ICV CCV | | 12/21/15 | 0754 | 1.413 | 11813 | 8/24/16 | 1.413 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 11 - 40 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 8% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| pH | DEP SOP FT 1100 | Date | Time | Standard (SU) | Standard Lot # | Standard Exp. Date | Reading (SU) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Acceptance Criteria: +/-0.2 SU | |
| (CAL) ICV CCV | | 12/21/15 | 0756 | 7.00 | 2506 | 5/31/16 | 7.00 | (P) F |
| (CAL) ICV CCV | | ↓ | 0800 | 4.00 | 1505043 | May-16 | 4.00 | (P) F |
| (CAL) ICV CCV | | ↓ | 0805 | 10.00 | 1501789 | July-16 | 10.00 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 41 - 100 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 6.5% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| ORP | SOP N/A | Date | Time | Std. mV @ Temp °C | Standard Lot # | Standard Exp. Date | Reading (mV) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Geosyntec Acceptance Criteria: +/- 5% | | |
| (CAL) ICV CCV | | 12/21/15 | 0810 | 240.0 | 6138 | 5/18 | 246.0 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| >100 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 5% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

Specific Conductance Probe Cleaned? Yes (No)  Disolved Oxygen membrane Changed? Yes (No)

1. See Table FS 2200-2 on the back of this form

CAL - Initial Calibration
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification

Comments: _____

Allow adequate time for the dissolved oxygen sensor to equilibrate during air calibration
Calibrate specific conductance using at least two standards that bracket the range of expected sample readings (unless readings < 0.1 mS/cm then one standard of 0.1 mS/cm is acceptable)
Calibrate pH using at least two standards (typ. pH 4 and 7) that bracket the range of expected sample readings; always start with pH 7; add a third calibration point if needed (i.e. pH > 7)
If parameter fails to calibrate within SOP acceptance criteria then append sample results with a "J" qualifier

Geosyntec consultants

**Geosyntec Consultants**
**Water Quality Instrument Calibration Form**

Project/Site: FPL Project #: FE2724 Field Personnel: Julianne Payne (JP)

Water Quality Meter - Model/Serial #: YSI 556 – 10101748 Turbidimeter - Model/Serial # N/A

| Dissolved Oxygen | DEP SOP FT 1500 | Date | Time | Temp (°C) | Saturation (mg/L)[1] | Reading (mg/L) | Reading (%) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Acceptance Criteria: +/-0.3mg/L | | |
| (CAL) ICV CCV | | 12/14/15 | 0835 | 24.1 | 8.403 | 8.40 | 99.9 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 0.1 - 10 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 10% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| Specific Conductance | DEP SOP FT 1200 | Date | Time | Standard (mS/cm) | Standard Lot# | Standard Exp. Date | Reading (mS/cm) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Acceptance Criteria: +/- 5% | | |
| (CAL) ICV CCV | | 12/14/15 | 0840 8/24/16 JP | 1.413 | 11813 | 8/24/16 | 1.413 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 11 - 40 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 8% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| pH | DEP SOP FT 1100 | Date | Time | Standard (SU) | Standard Lot# | Standard Exp. Date | Reading (SU) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Acceptance Criteria: +/-0.2 SU | | |
| (CAL) ICV CCV | | 12/14/15 JP | 0842 | 7.00 | 2506 | 5/31/16 | 7.00 | (P) F |
| (CAL) ICV CCV | | | 0845 | 4.00 | 1505143 | May '17 | 4.00 | (P) F |
| (CAL) ICV CCV | | | 0848 | 10.00 | 2501789 | July 16 | 10.00 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| 41 - 100 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 6.5% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

| ORP | SOP N/A | Date | Time | Std. mV @ Temp °C | Standard Lot# | Standard Exp. Date | Reading (mV) | Pass or Fail |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Geosyntec Acceptance Criteria: +/- 5% | | |
| (CAL) ICV CCV | | 12/14/15 | 0850 | 240.0 | 6038 | 5/18 | 240.0 | (P) F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |
| CAL ICV CCV | | | | | | | | P F |

| >100 NTU Std ___NTU | Date | Reading (NTU) | Pass or Fail |
|---|---|---|---|
| | | Acceptance Criteria: +/- 5% | |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |
| CAL ICV CCV | | | P F |

Specific Conductance Probe Cleaned? Yes (No) Disolved Oxygen membrane Changed? Yes (No)

1. See Table FS 2200-2 on the back of this form

CAL - Initial Calibration
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification

Comments:

Allow adequate time for the dissolved oxygen sensor to equilibrate during air calibration
Calibrate specific conductance using at least two standards that bracket the range of expected sample readings (unless readings < 0.1 mS/cm then one standard of 0.1 mS/cm is acceptable)
Calibrate pH using at least two standards (typ. pH 4 and 7) that bracket the range of expected sample readings; always start with pH 7; add a third calibration point if needed (i.e. pH > 7)
If parameter fails to calibrate within SOP acceptance criteria then append sample results with a "J" qualifier

Geosyntec consultants

**Prepared for:**

**Florida Power & Light**
**St. Lucie Nuclear Plant**
**6501 South Ocean Drive**
**Jensen Beach, FL 34957**

**Prepared by:**
Hydrosphere Research

**Test Location:**
11842 Research Circle
Alachua, FL 32615

**Contact Information:**
Craig Watts, Lab Director
Tel: (386) 462-7889
cwatts@hydrosphere.net
www.hydrosphere.net

**Test Number:**
FPL-SL 15072

**Permit Number:**
FL0002208

**Initiated:**
August 25, 2015

**Test Type:**
Routine 7-day Chronic Definitive Bioassays

*Hydrosphere Research is a NELAC/P Certified Lab (E82295)*

# Report of Routine Bioassays Performed for

# Florida Power and Light - St. Lucie Nuclear Plant

## Abstract

To comply with the routine whole effluent biomonitoring requirements of the National Pollutant Discharge Elimination System (NPDES) permit FL0002208, composite samples were collected at the Florida Power and Light St. Lucie Nuclear Plant, St. Lucie County, Florida. Using these samples, Hydrosphere Research conducted a series of 7-day chronic definitive bioassay tests.

## Introduction

To comply with the routine whole effluent biomonitoring requirements of NPDES permit FL0002208, composite samples were collected from Outfall D001 at the Florida Power and Light St. Lucie Nuclear Plant, St. Lucie County, Florida.

The samples were collected on August 24, 26 and 28, 2015. Hydrosphere Research received these samples in good condition. The Chain of Custody forms are located in Appendix A.

Using these samples, Hydrosphere Research conducted a series of 7-day chronic definitive bioassay tests with the mysid shrimp (*Mysidopsis bahia)* and the inland silverside *(Menidia beryllina).*

## Materials and Methods

Using these samples, the following series of bioassay tests described in Table 1 were conducted.

**Table 1. Test Methods**

| Test Type | Species | Dilution Series (%) | Test Method |
|---|---|---|---|
| 7-day chronic static renewal definitive | *M. bahia* | 0, 6.25, 12.5, 25, 50, 100 | EPA-821-R-02-014, Method 1007.0 |
| 7-day chronic static renewal definitive | *M. beryllina* | 0, 6.25, 12.5, 25, 50, 100 | EPA-821-R-02-014, Method 1006.0 |

The bioassay tests were initiated on August 25, 2015.

The bioassay tests were performed at Hydrosphere Research, 11842 Research Circle, Alachua, FL 32615; telephone number (386) 462-7889. This laboratory is NELAC/P certified by the State of Florida Department of Health and Rehabilitation Services (E82295).

*M. bahia* test organisms were cultured in-house, and *M. beryllina* test organisms were commercially obtained.

## Results

The raw data and bench sheets are included in Appendix B; the results are summarized in the following table and figures:

**Table 2. Chronic Test Results**

| Percent Effluent | *M. bahia* | | *M. beryllina* | |
|---|---|---|---|---|
| | Final Survival (%) | Average Growth (mg/fish) | Final Survival (%) | Average Growth (mg/fish) |
| Control | 100 | 0.442 | 92.5 | 1.095 |
| 6.25 | 100 | 0.396 | 90 | 1.030 |
| 12.5 | 100 | 0.426 | 95 | 1.194 |
| 25 | 100 | 0.430 | 97.5 | 1.223 |
| 50 | 100 | 0.402 | 87.5 | 1.089 |
| 100 | 97.5 | 0.420 | 92.5 | 1.123 |
| $IC_{25}$ | >100% | | >100% | |

**Figure 1. *M. bahia* Growth**

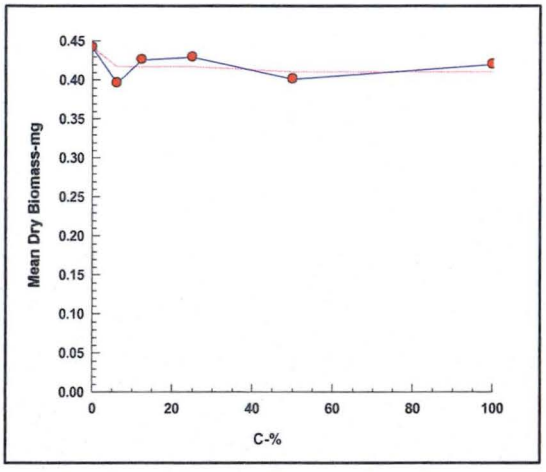
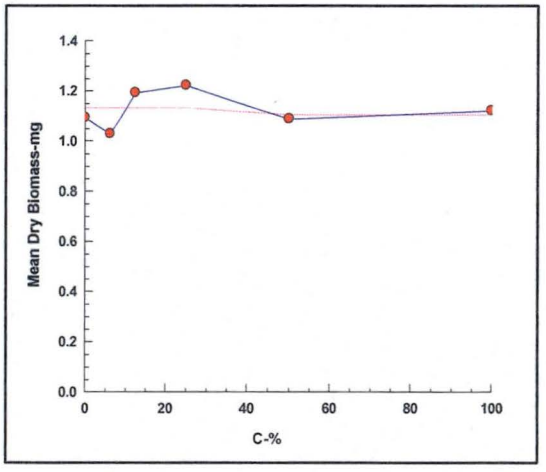



**Figure 2. *M. beryllina* Growth**




All statistical calculations were made using CETIS® (Tidepool Scientific Software, McKinleyville, CA).

The bioassay tests were initiated within 36 hours of the first sample's collection time and were acceptable tests based on control survival and test conditions.

The Standard Reference Toxicant tests, located in Appendix C, indicate that both of the test species were of normal sensitivity for this laboratory.

## Discussion

The samples provided did not exhibit chronic toxicity to either test species; both tests had an $IC_{25}$ >100% effluent.

During these tests dissolved oxygen, temperature and pH remained within the limits established in the test methods. The results of the standard reference toxicant tests, provided in Appendix C, indicate that the organisms were of normal sensitivity for this laboratory.

No unusual observations or deviations from standard test protocol were noted. The test results only relate to the samples described in this report and meet all requirements of NELAC.

## References

U.S. Environmental Protection Agency. *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*. Third Edition. EPA-821-R-02-014. October 2002.

*Handbook of Analytical Quality Control in Water and Wastewater Laboratories*. EPA-600/4-79-019. March 1979.

Chemical and physical parameters reported herein were determined by methods described in *Methods for Chemical Analysis of Water and Waste*. EPA 600/4-79-020. March 1983.

## NPDES Forms

The following four pages present the NPDES forms which include Table 3. NPDES Whole Effluent Toxicity Testing Report Form, Table 4. Summary of Test Conditions, Table 5. Acute Test Results, and Table 6. Chronic Test Results.

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## Table 3. NPDES Whole Effluent Toxicity Testing Report Form

| All blanks on this form are to be filled in. Blanks that are not used should be filled in with "N/A" or a line drawn through the blank. Please print. | | |
|---|---|---|
| Attachments: Please attach the following items to this report form and indicate with an "x" in box. | | |
| 1. | All Chain-of-Custody Forms | X |
| 2. | All Reference Toxicant Data for each Organism used in Test and Current Control Charts for each Organism | X |
| 3. | All Raw Data (Bench Sheets) Pertaining to the Tests (i.e., all physical, chemical, and biological measurements) | X |
| 4. | All Result Calculations | X |
| 5. | Discharge Monitoring Reports (DMR) when Applicable | NA |

| | | | |
|---|---|---|---|
| Facility/industry/client name: | St. Lucie Nuclear Plant | | |
| Permit number: | FL0002208 | County: | St. Lucie |

| | | | |
|---|---|---|---|
| Consultant company name: | Hydrosphere Research | Telephone: | (386) 462-7889 |
| Dates test(s) conducted--Begin: | 08/25/15 | End: | 09/01/15 |
| Persons conducting test(s) (print names): | D. Ivey, K. Flower | | |

| | | | |
|---|---|---|---|
| Authorized signature: | Craig Watts | Date: | 09/04/15 |

| | | | |
|---|---|---|---|
| Laboratory report #/project #: | FPL-SL 15072 | Sampler (print name): | H. Cosgrove |

| | | | | | |
|---|---|---|---|---|---|
| DMR monitoring period end date on which this test is reported (filled out by the Permittee--mm/dd/yy): | | | | | |
| Routine test: | X | Additional test: | NA | Failed routine test date: | NA |

| Samples | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | Date & Time Collected | Lab Sample # | Grab | 24-Hour Composite | Arrival Temperature (°C) | Initial Residual Chlorine | Lab Dechlorination | |
| | | | | | | | Y/N | Chemical Used |
| 1. | 08/24/15-0700 | 15072A | NA | X | 0.5 | <0.04 | N | NA |
| 2. | 08/26/15-0700 | 15072B | NA | X | 0.8 | <0.04 | N | NA |
| 3. | 08/28/15-0600 | 15072C | NA | X | 0.5 | 0.05 | N | NA |
| 4. | NA | NA | NA | NA | NA | NA | NA | NA |
| 5. | NA | NA | NA | NA | NA | NA | NA | NA |
| 6. | NA | NA | NA | NA | NA | NA | NA | NA |
| 7. | NA | NA | NA | NA | NA | NA | NA | NA |
| 8. | NA | NA | NA | NA | NA | NA | NA | NA |
| 9. | NA | NA | NA | NA | NA | NA | NA | NA |
| 10. | NA | NA | NA | NA | NA | NA | NA | NA |

| | Wet Ice | Blue Ice | Other (describe) | Samples Aerated | |
|---|---|---|---|---|---|
| | | | | Yes (describe) | No |
| Refrigerant used for sample transportation: | X | NA | NA | NA | X |

| | Bus | Hand | Common Carrier | Samples Filtered | |
|---|---|---|---|---|---|
| | | | | Yes (describe) | No |
| Samples delivered by: | NA | X | NA | NA | X |

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## Table 4. Summary of Test Conditions

| Type of Test[a] | Test Concentrations[b] (% Effluent) | Test Species Used[c] | Age of Test Organism | Amount & Type of Food | How Often Fed | Test Chamber Volume | Volume of Effluent Used | Type of Chamber | # of Organisms/ Chamber | # of Replicates | Temp. Range (°C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F | 0, 6.25, 12.5, 25, 50, 100 | MS | 7 days | 0.05 ml Artemia | 2x/ day | 500 mL | 200 mL | Plastic Cup | 5 | 8 | 26.0 ± 1.0 |
| F | 0, 6.25, 12.5, 25, 50, 100 | SS | 10 days | 1 ml Artemia | 2x/ day | 1 L | 500 mL | Plastic Cup | 10 | 4 | 25.0 ± 1.0 |

| G. "Other" type of test: | NA | Temperature readings: | Single | Multiple | Continuous |
|---|---|---|---|---|---|
| | | | NA | X | NA |

| Description of control water: | Moderately Hard Reconstituted | Photoperiod during test: | 16 hours light / 8 hours dark |
|---|---|---|---|

| Reference Toxicant Data[d] | | | | | |
|---|---|---|---|---|---|
| Name of Toxicant | Dates of Test | | Species[c] | In-House or Commercially Obtained | $LC_{50}/IC_{25}$ |
| | Begin | End | | | |
| $Cu^{2+}$ | 08/04/15 | 08/11/15 | MS | In-House | $IC_{25}$ = 125.60 µg/L |
| $Cu^{2+}$ | 08/04/15 | 08/11/15 | SS | Commercially Obtained | $IC_{25}$ = 127.00 µg/L |

[a]Please fill the "Type of Test" box with the appropriate letter:

A. 48-Hr/Non-Renewal/Single Concentration (Screen)
B. 48-Hr/Non-Renewal/Multi-Concentration (Definitive)
C. 96-Hr/Renewed Every 48 Hrs/Single Concentration (Screen)
D. 96-Hr/Renewed Every 48 Hrs/Multi-Concentration (Definitive)
E. 7-Day Chronic/Single Concentration (Screen)/Renewed Daily
F. 7-Day Chronic/Multi-Concentration (Definitive)/Renewed Daily
G. Other (described in the "G" box)

[b]List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

[c]Write appropriate letters for the following species in this column:

CD - *Ceriodaphnia dubia*
FM - *Pimephales promelas* (fathead minnow)
SS - *Menidia beryllina* (inland silverside)
MS - *Americanmysis bahia* (formerly *Mysidopsis bahia*, mysid shrimp)
CL - *Cyprinella leedsi* (bannerfin shiner)
Other - Please describe: _____

[d]Attach all reference toxicant raw data & control charts for each organism/reference toxicant used for the test.

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## Table 5. Acute Test Results

| Test Species | Test Concentrations[b] (% Effluent) | Grab Sample[c] | Composite Sample[c] | % Mortality[d] (48 Hours) | % Mortality[d] (96 Hours) | $LC_{50}$[e] |
|---|---|---|---|---|---|---|
| Control[a] | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |
| Control[a] | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | NA | NA | NA |

[a]List % Control Mortality in appropriate column (48 or 96 hr) for organisms (use abbreviations shown on footnote "c" of Table 4) that you list under the word "Control." Control mortality must not exceed 10% for a valid acute test.

[b]List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

[c]Record number that corresponds with the number of the sample in the "Date & Time Collected" column in sample section.

[d]List % Mortality for each organism and control if you are conducting a single concentration (Screen) test.

[e]If multi-concentration (Definitive) tests are conducted on grab or composite samples, record the calculated $LC_{50}$ in this column for each sample. Enter "N/A" in all % Mortality columns and $LC_{50}$ box at bottom of this table.

| Species | $LC_{50}$[f] |
|---|---|
| NA | NA |
| NA | NA |

[f]If a single concentration (screen) test is conducted and >50% mortality occurs in any one of the four grab or composite samples, record <100% in this column. If <50% mortality occurs in all four grabs or composites, record >100% in this column. Draw a line through the $LC_{50}$ column in the above table.

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## Table 6. Chronic Test Results

| Test Species[a] | Test Concentrations[b] (% Effluent) | $IC_{25}$ | |
|---|---|---|---|
| | | Growth[c] | Reproduction[c] |
| MS | 0, 6.25, 12.5, 25, 50, 100 | >100% | NA |
| SS | 0, 6.25, 12.5, 25, 50, 100 | >100% | NA |
| NA | NA | NA | NA |
| NA | NA | NA | NA |

[a]Use abbreviations shown on footnote "c" of Table 4.

[b]List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

[c]For single concentration tests (Screen), if there is a significant difference (P = 0.05) between survival, growth, reproduction, or fecundity in 100% or IWC, and control, record <100% in proper column. If there is not a significant difference between survival, growth, reproduction, or fecundity in 100% or IWC, and control, record >100% in proper column.

| | |
|---|---|
| CD Survival in Control (>80%) | NA |
| Average Number of Young per Female in CD Control (min 15 young/surviving female) | NA |

| | |
|---|---|
| FM Survival in Control (>80%) | NA |
| Average FM Dry Weight in Control (min ADW 0.25 mg/FM in surviving controls) | NA |

| | |
|---|---|
| MS Survival in Control (>80%) | 100% |
| Average MS Dry Weight in Control (min ADW 0.20 mg/MS in surviving controls) | 0.442 |

| | |
|---|---|
| SS Survival in Control (>80%) | 92.5% |
| Average SS Dry Weight in Control (min immediate ADW 0.50 mg/SS in surviving controls) | 1.095 |

## Appendix A. Chain of Custody

Hydrosphere research

# CHAIN OF CUSTODY

Please complete **ALL** fields other than the gray areas (which will be completed by Hydrosphere)

| **Client Name** | **Client Shipping Address** |
|---|---|
| FP&L<br>St. Lucie Nuclear Plant | St. Lucie Nuclear Plant 6501 South Ocean Drive Jensen Beach, FL 34957 |

| **Sample Kit Information** | **Prepared and Shipped by** | **Sample Kit Received By** |
|---|---|---|
| Cooler 3 of 4<br>Container Type: 1/2 gal bottle<br>Number of Containers: 8<br>Method of Shipment: FedEx Ground | CC<br>**Date** 08/11/15 | Howard Cosgrove (Print Name) _____ (Signature)<br>Date 8/24 Time _____<br>Condition of Seal Upon Receipt (Check One)<br>○ Intact ○ Other (describe) _____ |

| **Ship Samples Priority Overnight To:** | **Refrigerant Used For Shipping** | **Composite Sample Information** |
|---|---|---|
| Hydrosphere Research<br>11842 Research Circle<br>Alachua, FL 32615<br>(386) 462-7889<br>**Be Sure to Mark for Saturday Delivery if Appropriate** | ◉ Wet Ice<br>○ Other (describe) _____<br>*Samples must arrive at the lab ≤ 6.0 °C (never frozen). Pack cooler completely with ice before shipping.* | Samples/Hour 4 Volume/Sample 1.75 gal<br>Total Hours 24 Total Volume 5 gals<br>Initiated Date 8/23/15 Time 07:00<br>Ended Date 8/24/15 Time 07:00<br>Chilled During Collection ◉ Yes ○ No |
| **Sampling Location** D001<br>**Permit Number** FL0002208<br>**County Samples Collected In** St. Lucie | **Samples Shipped Via**<br>○ FedEx ○ Greyhound ◉ Client<br>○ UPS ○ Other (describe) _____ | |

| Outfall Number or Client Description | Date | Time (24 Hour Format) | Sample Type: Comp. | Sample Type: Grab | # of Containers | Sampled By: Print Name | Sampled By: Signature | For Lab Use: Temp (°C) | For Lab Use: Lab Sample ID |
|---|---|---|---|---|---|---|---|---|---|
| D001 | 8/24/15 | 0700 | X | | | HOWARD COSGROVE | | 0.5 | 15072-A |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Additional Comments** (if needed)

| **Relinquished By** (Print Clearly & Sign) | Date | Time | **Shipped via** | | |
|---|---|---|---|---|---|
| Howard Cosgrove | 8/24/15 | 819 | Kimberly Peterson | (CLIENT) | |
| **Received By** (Print Clearly & Sign) | Date | Time | **Relinquished By** (Print Clearly & Sign) | Date | Time |
| Kimberly Peterson | 8/24/15 | 819 | Kimberly Peterson | 8/24/15 | 1620 |
| **Received By Lab** (Print Clearly & Sign) | Date | Time | **Shipper's Tracking Number** | | |
| PETER NEVER | 8/24/15 | 1620 | NONE | | |

**See Provisions on back**

Hydrosphere research

# CHAIN OF CUSTODY

Please complete ALL fields other than the gray areas
(which will be completed by Hydrosphere)

| Client Name | Client Shipping Address |
|---|---|
| FP&L<br>St. Lucie Nuclear Plant | St. Lucie Nuclear Plant 6501 South Ocean Drive Jensen Beach, FL 34957 |

**Sample Kit Information**
Cooler 4 of 4
Container Type: 1/2 gal bottle
Number of Containers: 8
Method of Shipment: FedEx Ground

**Prepared and Shipped by**
CC

**Date**
08/10/15

**Sample Kit Received By**
Howard Cosgrove (Print Name) _____ (Signature)
Date 8/26/15 Time 0600
Condition of Seal Upon Receipt (Check One)
(●) Intact ( ) Other (describe) _____

**Ship Samples Priority Overnight To:**
Hydrosphere Research
11842 Research Circle
Alachua, FL 32615
(386) 462-7889
**Be Sure to Mark for Saturday Delivery if Appropriate**

**Sampling Location** D001

**Permit Number** FL0002208

**County Samples Collected In** St. Lucie

**Refrigerant Used For Shipping**
(●) Wet Ice
( ) Other (describe) _____
*Samples must arrive at the lab ≤ 6.0 °C (never frozen). Pack cooler completely with ice before shipping.*

**Samples Shipped Via**
( ) FedEx ( ) Greyhound (●) Client
( ) UPS ( ) Other (describe) _____

**Composite Sample Information**
Samples/Hour 4 Volume/Sample 195ml
Total Hours 24 Total Volume 5.9 liters
Initiated Date 8/25/15 Time 0700
Ended Date 8/26/15 Time 0700
Chilled During Collection (●) Yes ( ) No

| Outfall Number or Client Description | Date | Time (24 Hour Format) | Sample Type: Comp. | Sample Type: Grab | # of Containers | Sampled By: Print Name | Sampled By: Signature | For Lab Use: Temp (°C) | For Lab Use: Lab Sample ID |
|---|---|---|---|---|---|---|---|---|---|
| D001 | 8/26/15 | 0700 | ✓ | | 10 | Howard Cosgrove | | 0.8 | 15072B |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Additional Comments** (if needed)

| Relinquished By (Print Clearly & Sign) | Date | Time | Shipped via | |
|---|---|---|---|---|
| | 8/26/15 | 733 | Ken Pelt | 8-26-15 0733 |
| **Received By** (Print Clearly & Sign) | Date | Time | **Relinquished By** (Print Clearly & Sign) KF 8/26/15 | Date / Time |
| **Received By Lab** (Print Clearly & Sign) Kaitlyn Flower | Date 8/26/15 | Time 12:30 | **Shipper's Tracking Number** | |

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Hydrosphere research

# CHAIN OF CUSTODY

Please complete ALL fields other than the gray areas (which will be completed by Hydrosphere)

| | |
|---|---|
| **Client Name**<br>FP&L<br>St. Lucie Nuclear Plant | **Client Shipping Address**<br>St. Lucie Nuclear Plant 6501 South Ocean Drive Jensen Beach, FL 34957 |
| **Sample Kit Information**<br>Cooler 2 of 4<br>Container Type: 1/2 gal bottle<br>Number of Containers: 8<br>Method of Shipment: FedEx Ground | **Prepared and Shipped by**<br>CC<br>**Date**<br>08/11/15 |
| | **Sample Kit Received By**<br>Howard Cosgrove (Print Name) _____ (Signature)<br>Date 8/27/15 Time 2030<br>Condition of Seal Upon Receipt (Check One)<br>(X) Intact ( ) Other (describe) _____ |
| **Ship Samples Priority Overnight To:**<br>Hydrosphere Research<br>11842 Research Circle<br>Alachua, FL 32615<br>(386) 462-7889<br>**Be Sure to Mark for Saturday Delivery if Appropriate** | **Refrigerant Used For Shipping**<br>(X) Wet Ice<br>( ) Other (describe) _____<br>*Samples must arrive at the lab ≤ 6.0 °C (never frozen). Pack cooler completely with ice before shipping.* |
| **Composite Sample Information**<br>Samples/Hour 4 Volume/Sample 1 gal<br>Total Hours 24 Total Volume 7 gal<br>Initiated Date 8/27/15 Time 0600<br>Ended Date 8/28/15 Time 0600<br>Chilled During Collection ( ) Yes (X) No | |
| **Sampling Location**<br>D001 | **Samples Shipped Via**<br>( ) FedEx ( ) Greyhound (X) Client<br>( ) UPS ( ) Other (describe) _____ |
| **Permit Number**<br>FL0002208 | |
| **County Samples Collected In**<br>St. Lucie | |

| Outfall Number or Client Description | Date | Time (24 Hour Format) | Sample Type: Comp. | Sample Type: Grab | # of Containers | Sampled By: Print Name | Sampled By: Signature | For Lab Use: Temp (°C) | For Lab Use: Lab Sample ID |
|---|---|---|---|---|---|---|---|---|---|
| D001 | 8/28/15 | 0600 | X | | 14 | Howard Cosgrove<br>Thomas Bertolini | | 0.5 | 15072 C |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Additional Comments** (if needed) One gallon Grab @ 2030 8/27/15 One Grab Sample @ 8/28/15 0600

| | | | |
|---|---|---|---|
| **Relinquished By** (Print Clearly & Sign)<br>Thomas Bertolini | **Date** 8/28/15 | **Time** 7:30 | **Shipped via**<br>Carrier |
| **Received By** (Print Clearly & Sign)<br>Jerome Wilson | **Date** 8/28/15 | **Time** 7:30 | **Relinquished By** (Print Clearly & Sign)<br>Jerome Wilson |
| **Received By Lab** (Print Clearly & Sign)<br>Danielle Ivey | **Date** 8.28.15 | **Time** 12:20 | **Shipper's Tracking Number**<br>N/A |

| **Date** | **Time** |
|---|---|
| 8-28-15 | 12:20pm |

**See Provisions on back**

Hydrosphere research

# CHAIN OF CUSTODY

Please complete **ALL** fields other than the gray areas (which will be completed by Hydrosphere)

| **Client Name** | **Client Shipping Address** |
|---|---|
| FP&L<br>St. Lucie Nuclear Plant | St. Lucie Nuclear Plant 6501 South Ocean Drive Jensen Beach, FL 34957 |

| **Sample Kit Information** | **Prepared and Shipped by** | **Sample Kit Received By** |
|---|---|---|
| Cooler 1 of 4<br>Container Type: 1/2 gal bottle<br>Number of Containers: 8<br>Method of Shipment: FedEx Ground | CC<br>**Date** 08/11/15 | Thomas Bertolini Thomas Bertolini<br>Print Name Signature<br>Date 8/28/15 Time 05:30<br>Condition of Seal Upon Receipt (Check One)<br>☒ Intact ○ Other (describe) |

| **Ship Samples Priority Overnight To:** | **Refrigerant Used For Shipping** | **Composite Sample Information** |
|---|---|---|
| Hydrosphere Research<br>11842 Research Circle<br>Alachua, FL 32615<br>(386) 462-7889<br>**Be Sure to Mark for Saturday Delivery if Appropriate** | ○ Wet Ice<br>○ Other (describe)<br>*Samples must arrive at the lab ≤ 6.0 °C (never frozen). Pack cooler completely with ice before shipping.* | Samples/Hour ____ Volume/Sample ____<br>Total Hours ____ Total Volume ____<br>Initiated Date ____ Time ____<br>Ended Date ____ Time ____<br>Chilled During Collection ○ Yes ○ No (See PSL) |
| **Sampling Location** DCO 1<br>**Permit Number** FL 000 2208<br>**County Samples Collected In** St Lucie | **Samples Shipped Via**<br>○ FedEx ○ Greyhound ○ Client<br>○ UPS ○ Other (describe) | |

| Outfall Number or Client Description | Date | Time (24 Hour Format) | Sample Type: Comp. | Sample Type: Grab | # of Containers | Sampled By: Print Name | Sampled By: Signature | For Lab Use: Temp (°C) | For Lab Use: Lab Sample ID |
|---|---|---|---|---|---|---|---|---|---|
| DOO 1 | 8/28/15 | 0600 | X | | | Howard Coy Love<br>Thomas Bertolini | Thomas Bertolini | 0.5 | 15072C |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Additional Comments** (if needed) one gallon grab at 20:30 8/27/15 one gallon grab at 0600 8/28/15

| | | | | |
|---|---|---|---|---|
| **Relinquished By** (Print Clearly & Sign) Thomas Bertolini Thomas Bertolini | Date 8/28/15 | Time 7:30 | **Shipped via** Carrier | |
| **Received By** (Print Clearly & Sign) Jerome Wilson | Date 8/28/15 | Time 7:30 | **Relinquished By** (Print Clearly & Sign) Jerome Wilson | Date 8-28-15 Time 12:20 |
| **Received By Lab** (Print Clearly & Sign) Danielle Jweg | Date 8.28.15 | Time 12:20 | **Shipper's Tracking Number** N/A | |

**See Provisions on back**

## Appendix B. Raw Data Sheets & Statistical Results

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)**
Survival, Growth & Fecundity

Client: FPL - St. Lucie Power Plant
Code: FPL-SL Job #: 15072
Species: *Mysidopsis bahia* Code: MS
ID #: 7710 Age: 7-days old

Test Vessel: 500-mL plastic
Test Volume: 200-mL per rep

Initiation Date: 8.25.15 Termination Date: 9/1/15
Sample Description: Discharge

| Sample Description | % Effluent | REP | Live Counts T 0 | W 1 | R 2 | F 3 | Sa 4 | Su 5 | M 6 | T 7 | Biomass (original number, final dry weight basis. Valid Control ≥ 0.20-mg/surviving shrimp) Pan | Tare Weight (0.00001-gms) | Total Weight (0.00001-gms) | Net Weight (0.00001-gms) | Wt. /Shrimp (0.001-mgs) | Fecundity Females: Eggs | Females: No Eggs | Males | Immature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 1 | 0.01756 | 0.01934 | 0.00178 | 0.356 | | | | |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 | 0.01543 | 0.01760 | 0.00217 | 0.434 | | | | |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 3 | 0.01634 | 0.01881 | 0.00247 | 0.494 | | | | |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 0.01443 | 0.01646 | 0.00203 | 0.406 | | | | |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 0.01375 | 0.01635 | 0.00260 | 0.520 | | | | |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 0.01733 | 0.01974 | 0.00241 | 0.482 | | | | |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7 | 0.01460 | 0.01711 | 0.00251 | 0.502 | | | | |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 8 | 0.01463 | 0.01636 | 0.00173 | 0.346 | | | | |
| Effluent | 6.25 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 9 | 0.01542 | 0.01740 | 0.00198 | 0.396 | | | | |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 10 | 0.01471 | 0.01600 | 0.00129 | 0.258 | | | | |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 11 | 0.01397 | 0.01590 | 0.00193 | 0.386 | | | | |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 12 | 0.01592 | 0.01818 | 0.00226 | 0.452 | | | | |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 13 | 0.01412 | 0.01596 | 0.00184 | 0.368 | | | | |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 14 | 0.01454 | 0.01685 | 0.00231 | 0.462 | | | | |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 15 | 0.01423 | 0.01607 | 0.00184 | 0.368 | | | | |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 16 | 0.01645 | 0.01886 | 0.00241 | 0.482 | | | | |
| | 12.5 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 17 | 0.01592 | 0.01840 | 0.00248 | 0.496 | | | | |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 18 | 0.01642 | 0.01827 | 0.00185 | 0.370 | | | | |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 19 | 0.01620 | 0.01816 | 0.00196 | 0.392 | | | | |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 20 | 0.01835 | 0.02016 | 0.00181 | 0.362 | | | | |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 21 | 0.01480 | 0.01716 | 0.00236 | 0.472 | | | | |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 22 | 0.01713 | 0.01964 | 0.00251 | 0.502 | | | | |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 23 | 0.01333 | 0.01527 | 0.00194 | 0.388 | | | | |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 24 | 0.01371 | 0.01586 | 0.00215 | 0.430 | | | | |
| Initials: | | | DI | KF | KF | KF | KF | DI | KF | KF | Date Final Dry Weights: 9/2/15 Initials: CC | | | | | Initials: | | | |
| Time: | | | 1845 | 17:25 | 16:20 | 14:20 | 12:30 | 1430 | 1350 | 1430 | | | | | | | | | |

Randomization Template #: 1

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Feeding Type: | Artemia (150-nauplii/shrimp/day) | | | | | | | |
| Amount: | 1-drop of a concentrated slurry / 2x / day. | | | | | | | |
| Morning: | X | 0930 | 9:45 | 9:30 | 9:30 | 0950 | 9:30 | 910 |
| Evening: | ~~1845~~ 1400 | 1845 | 17:00 | 16.30 | 14:30 | 1500 | 1614 | X |
| Other: | | | | | | | | |

Notes & Comments

Photoperiod is 16-hours light and 8-hours dark, Illumination is ambient (50 to 100 ftcd)

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)**
Survival, Growth & Fecundity KF 9/1/15

Client: FPL - St. Lucie Power Plant
Code: FPL-SL Job #: 15072
Species: *Mysidopsis bahia* Code: MS
ID #: 7710 Age: 7-days old

Test Vessel: 500-mL plastic
Test Volume: 200-mL per rep

Initiation Date: 8.25.15 Termination Date: 9/2/15

Sample Description: Discharge

| Sample Description | % Effluent | Rep | Live Counts T 0 | W 1 | R 2 | F 3 | Sa 4 | Su 5 | M 6 | T 7 | Biomass (mgs x number, final dry weight basis. %Ash Control is ≥0.20-mg/surviving shrimp) Pan # | Tare Weight (0.00001-gms) | Total Weight (0.00001-gms) | Net Weight (0.00001-gms) | Wt. /Shrimp (0.001-mgs) | Fecundity Females: Eggs | Females: No Eggs | Males | Immature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Effluent | 25 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 25 | 0.01613 | 0.01844 | 0.00231 | 0.462 | | | | |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 26 | 0.01903 | 0.02116 | 0.00213 | 0.426 | | | | |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 27 | 0.01391 | 0.01590 | 0.00199 | 0.398 | | | | |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 28 | 0.01629 | 0.01777 | 0.00148 | 0.296 | | | | |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 29 | 0.01653 | 0.01853 | 0.00200 | 0.400 | | | | |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 30 | 0.01578 | 0.01800 | 0.00222 | 0.444 | | | | |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 31 | 0.01466 | 0.01699 | 0.00233 | 0.466 | | | | |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 32 | 0.01611 | 0.01884 | 0.00273 | 0.546 | | | | |
| | 50 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 33 | 0.01376 | 0.01616 | 0.00240 | 0.480 | | | | |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 34 | 0.01556 | 0.01785 | 0.00229 | 0.458 | | | | |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 35 | 0.01582 | 0.01793 | 0.00211 | 0.422 | | | | |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 36 | 0.01704 | 0.01840 | 0.00136 | 0.272 | | | | |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 37 | 0.01302 | 0.01484 | 0.00182 | 0.364 | | | | |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 38 | 0.01577 | 0.01786 | 0.00209 | 0.418 | | | | |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 39 | 0.01704 | 0.01880 | 0.00176 | 0.352 | | | | |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 40 | 0.01555 | 0.01778 | 0.00223 | 0.446 | | | | |
| | 100 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 41 | 0.01766 | 0.01952 | 0.00186 | 0.372 | | | | |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 42 | 0.01443 | 0.01612 | 0.00169 | 0.338 | | | | |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 43 | 0.01704 | 0.01889 | 0.00185 | 0.370 | | | | |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 44 | 0.01646 | 0.01869 | 0.00223 | 0.446 | | | | |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 45 | 0.01608 | 0.01836 | 0.00228 | 0.456 | | | | |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 46 | 0.01552 | 0.01751 | 0.00199 | 0.398 | | | | |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 47 | 0.01466 | 0.01696 | 0.00230 | 0.460 | | | | |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 48 | 0.01793 | 0.02055 | ~~0.00757~~ 0.00262 ① | 0.524 | | | | |
| Initials: | | | KF | KF | KF | KF | KF | JJ | KF | KF | Date Final Dry Weights: | 9/2/15 | Initials: | CC | | Initials: | | | |
| Time: | | | 1945 | 1800 | 16:20 | 14:20 | 12:30 | 1445 | 1400 | 1500 | | | | | | | | | |

Notes & Comments

① Correction: 0.00262 cc 09-02-15

Randomization Template #: 1

| | Artemia (150-nauplii/shrimp/day) 1-drop of a concentrated slurry / 2x / day | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Feeding Type: | | | | | | | | |
| Amount: | | | | | | | | |
| Morning: | X | 0950 | 9:45 | 9:30 | 9:30 | 0950 | 9:30 | 915 |
| Evening: | 1900 | 1845 | 1750 | 16:30 | 1730 | 1625 | 1600 | X |
| Other: | | | | | | | | |

Photoperiod is 16-hours light and 8-hours dark; Illumination is ambient (50 to 100 fcd)

# CETIS Analytical Report

Report Date: 02 Sep-15 16:27 (p 1 of 1)
Test Code: FPL-SL 15072MSC | 07-7502-2738

**Mysidopsis 7-d Survival, Growth and Fecundity Test** — **Hydrosphere Research**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 09-7494-3426 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.8.6 |
| **Analyzed:** | 02 Sep-15 16:27 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |
| **Batch ID:** | 16-1485-3959 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 25 Aug-15 18:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Synthetic Saltwater |
| **Ending Date:** | 01 Sep-15 14:30 | **Species:** | Mysidopsis bahia | **Brine:** | Tropic Marin |
| **Duration:** | 6d 20h | **Source:** | In-House Culture | **Age:** | |
| **Sample ID:** | 05-3626-9966 | **Code:** | FPL-SL 15072 | **Client:** | Florida Power and Light - St. Lucie |
| **Sample Date:** | 24 Aug-15 07:00 | **Material:** | Final Effluent | **Project:** | WET Compliance Test |
| **Receive Date:** | 24 Aug-15 16:20 | **Source:** | FPL-SL (FL 0002208) | | |
| **Sample Age:** | 36h | **Station:** | D-001 | | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Linear | Linear | 1312582 | 200 | Yes | Two-Point Interpolation |

**Point Estimates**

| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL |
|---|---|---|---|---|---|---|
| IC25 | >100 | N/A | N/A | <1 | NA | NA |

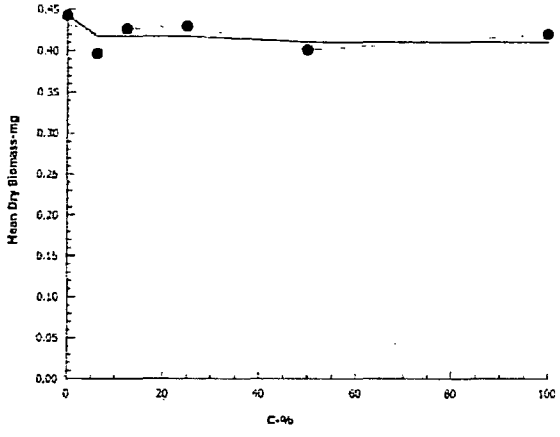
**Mean Dry Biomass-mg Summary** — Calculated Variate

| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect |
|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 8 | 0.4425 | 0.346 | 0.52 | 0.02389 | 0.06757 | 15.27% | 0.0% |
| 6.25 | | 8 | 0.3965 | 0.258 | 0.482 | 0.02521 | 0.07131 | 17.99% | 10.4% |
| 12.5 | | 8 | 0.4265 | 0.362 | 0.502 | 0.02011 | 0.05687 | 13.33% | 3.62% |
| 25 | | 8 | 0.4298 | 0.296 | 0.546 | 0.02531 | 0.07158 | 16.66% | 2.88% |
| 50 | | 8 | 0.4015 | 0.272 | 0.48 | 0.02415 | 0.0683 | 17.01% | 9.27% |
| 100 | | 8 | 0.4205 | 0.338 | 0.524 | 0.02171 | 0.06141 | 14.6% | 4.97% |

**Mean Dry Biomass-mg Detail**

| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 0.356 | 0.434 | 0.494 | 0.406 | 0.52 | 0.482 | 0.502 | 0.346 |
| 6.25 | | 0.396 | 0.258 | 0.386 | 0.452 | 0.368 | 0.462 | 0.368 | 0.482 |
| 12.5 | | 0.496 | 0.37 | 0.392 | 0.362 | 0.472 | 0.502 | 0.388 | 0.43 |
| 25 | | 0.462 | 0.426 | 0.398 | 0.296 | 0.4 | 0.444 | 0.466 | 0.546 |
| 50 | | 0.48 | 0.458 | 0.422 | 0.272 | 0.364 | 0.418 | 0.352 | 0.446 |
| 100 | | 0.372 | 0.338 | 0.37 | 0.446 | 0.456 | 0.398 | 0.46 | 0.524 |

**Graphics**




cwj 9/2/15

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)**

Water Quality I

**Client:** FPL - St. Lucie Power Plant

**Code:** FPL-SL **Job #:** 15072

**Species:** *Mysidopsis bahia*

**ID #:** 15072 D1 8.25 / 7760

**Initiation Date:** 8.25.15 **Termination Date:** 9/1/15

**Sample Description:** Discharge

**pH** (acceptable range for a valid test is 6 to 9)

| Sample Description | % Effluent | new 0 | old | new 1 | old | new 2 | old | new 3 | old | new 4 | old | new 5 | old | new 6 | old 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | 8.0 | 7.9 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 7.9 |
| Effluent | 6.25 | 8.0 | 7.9 | 8.1 | 8.0 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 8.0 | 8.2 | 8.0 |
| | 12.5 | 8.0 | 7.9 | 8.1 | 8.0 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.2 | 8.0 |
| | 25 | 8.0 | 7.9 | 8.1 | 8.0 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.2 | 8.0 |
| | 50 | 8.0 | 7.9 | 8.0 | 8.0 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.2 | 7.9 |
| | 100 | 8.0 | 7.9 | 8.0 | 7.9 | 8.0 | 8.0 | 8.1 | 7.9 | 8.0 | 7.9 | 8.1 | 7.9 | 8.1 | 7.9 |
| Meter ID: | | 11 | 15 | 11 | 15 | 15 | 15 | 8 | 15 | 15 | 11 | 11 | 15 | 15 | 15 |

**Dissolved Oxygen (mg/L)** (acceptable minimum for a valid test is 4.0 mg/L)

| Sample Description | % Effluent | new 0 | old | new 1 | old | new 2 | old | new 3 | old | new 4 | old | new 5 | old | new 6 | old 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | 6.3 | 6.1 | 6.6 | 6.3 | 6.3 | 5.9 | 6.3 | 6.0 | 6.8 | 5.4 | 6.4 | 5.7 | 6.1 | 5.5 |
| Effluent | 6.25 | 6.3 | 6.0 | 6.7 | 6.1 | 6.3 | 5.4 | 6.5 | 5.6 | 6.7 | 5.3 | 6.4 | 5.5 | 6.0 | 5.9 |
| | 12.5 | 6.4 | 5.7 | 6.7 | 6.0 | 6.5 | 5.4 | 6.5 | 5.5 | 6.7 | 5.5 | 6.7 | 5.8 | 6.7 | 5.6 |
| | 25 | 6.4 | 5.7 | 6.7 | 6.2 | 6.4 | 6.1 | 6.5 | 5.8 | 6.5 | 5.4 | 6.7 | 5.3 | 6.5 | 5.6 |
| | 50 | 6.3 | 5.8 | 6.9 | 6.0 | 6.4 | 5.8 | 6.5 | 5.5 | 6.5 | 5.5 | 6.7 | 5.5 | 6.6 | 5.5 |
| | 100 | 6.3 | 6.1 | 7.0 | 6.0 | 6.4 | 5.8 | 6.6 | 5.6 | 6.4 | 5.4 | 6.8 | 5.4 | 6.4 | 5.5 |
| Meter ID: | | 8 | 10 | 8 | 10 | 10 | 10 | 7 | 10 | 10 | 8 | 8 | 10 | 10 | 10 |

| Day: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| Control ID: | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| Dilution ID: | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| Effluent ID: | A | A | B | B | C | C | C | |
| Initials: | DJ | KF DJ | KF | KF DJ | KF | KF DJ | KF KF | KF |
| Time: | 1510 | 1715 1620 | 1546 | 1140 1445 | 1050 1200 | 1015 1425 | 1145 1510 | 1430 |

**Notes & Comments**

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)**

Water Quality II

**Client:** FPL - St. Lucie Power Plant

**Code:** FPL-SL **Job #:** 15072

**Species:** *Mysidopsis bahia*

**ID #:** 7790

**Initiation Date:** 8.25.15 **Termination Date:** 9/1/15

**Sample Description:** Discharge

| Sample Description | % Effluent | Salinity (‰) new 0 | old 1 | new 1 | old 2 | new 2 | old 3 | new 3 | old 4 | new 4 | old 5 | new 5 | old 6 | new 6 | old 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | 34 | 35 | 34 | 35 | 34 | 36 | 34 | 36 | 34 | 36 | 34 | 36 | 34 | 36 |
| Effluent | 6.25 | 34 | 35 | 34 | 35 | 34 | 36 | 34 | 36 | 34 | 34 | 34 | 36 | 34 | 36 |
| | 12.5 | 34 | 35 | 34 | 35 | 34 | 36 | 34 | 36 | 34 | 34 | 34 | 36 | 34 | 36 |
| | 25 | 34 | 35 | 34 | 35 | 34 | 36 | 34 | 36 | 34 | 34 | 34 | 36 | 34 | 36 |
| | 50 | 34 | 35 | 34 | 36 | 34 | 36 | 34 | 36 | 34 | 36 | 34 | 36 | 34 | 36 |
| | 100 | 0+8.25 3 3/4 | 35 | 34 | 35 | 34 | 36 | 34 | 36 | 34 | 36 | 34 | 36 | 34 | 36 |
| | Meter ID: | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |

| Temperature (°C) (acceptable range for a valid test is 26±1°C) Measured at the end of each 24-h exposure period 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| | 25.9 | 25 ③ | 25.7 | 25.7 | 26.1 | 25.5 | 25.6 |
| | 25.9 | 26.0 | 25.7 | 25.7 | 26.1 | 25.5 | 25.6 |
| | 25.9 | 26.0 | 25.7 | 25.7 | 26.1 | 25.5 | 25.6 |
| | 25.9 | 26.0 | 25.7 | 25.7 | 26.1 | 25.5 | 25.6 |
| | 25.9 | 26.0 | 25.7 | 25.7 | 26.1 | 25.5 | 25.6 |
| | 25.9 | 26.0 | 25.7 | 25.7 | 26.1 | 25.5 | 25.6 |
| | 57 | 57 | 57 | 57 | 57 | 57 | 57 |

| Day: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| Control ID: | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| Dilution ID: | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| Effluent ID: | A | A | B | B | C | C | C | |
| Initials: | DI | DI | KF | DI | KF | DI | KF | KF |
| Time: | 1510 | 1130 | 1140 | 1050 | 1015 | 1110 | 1030 | 1430 |

**Notes & Comments**

① 28 ② meter I.D. 28 KF 8/26/15

③ Temp. 26 KF 8/27/15

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1006.0)**
Survival & Growth

| | | | |
|---|---|---|---|
| Client: | FPL - St. Lucie Power Plant | Control Water: | SSW |
| Code: | FPL-SL | Job #: 15072 | ID #: see "water quality" |
| Species: | *Menidia beryllina* | Code: SS | Test Vessel: 1-L Plastic Cup |
| ID #: 7788 | | Age: 10days | Test Volume: 500-mL / rep. |

Initiation Date: 8.25.15 Termination Date: 9.4.15

Sample Description: Discharge

| Sample Description | % Effluent | Rep | Live Counts T 0 | W 1 | R 2 | F 3 | Sa 4 | Su 5 | M 6 | T 7 | Pan # | Tare Weight (0.00001-gms) | Total Weight (0.00001-gms) | Net Weight (0.00001-gms) | Wt. / Fish (0.001-mgs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | A | 10 | 10 | 10 | 10 | 9[1] | 9 | 9 | 9 | 73 | 1.15111 | 1.16139 | 0.01028 | 1.028 |
| | | B | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 74 | 1.16650 | 1.17771 | 0.01121 | 1.121 |
| | | C | 10 | 10 | 9[1] | 9 | 9 | 9 | 9 | 9 | 75 | 1.16070 | 1.17056 | 0.00986 | 0.986 |
| | | D | 10 | 9[1] | 9 | 9 | 9 | 9 | 9 | 9 | 76 | 1.17443 | 1.18687 | 0.01244 | 1.244 |
| Effluent | 6.25 | A | 10 | 10 | 10 | ~~9~~[1] | ~~10~~ 9 | 8[1] | 8 | 8 | 77 | 1.15226 | 1.16144 | ~~0.01214~~ | ~~1.214~~ ③ |
| | | B | 10 | 10 | 10 | ~~10~~[2] | 9 | 9 | 9 | 9 | 78 | 1.16268 | 1.17232 | 0.00964 | 0.964 |
| | | C | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 79 | 1.17129 | 1.18180 | 0.01051 | 1.051 |
| | | D | 10 | 10 | 10 | 10 | 10 | 10 | 9[1] | 9 | 80 | 1.16372 | 1.17559 | 0.01187 | 1.187 |
| | 12.5 | A | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 81 | 1.16490 | 1.17628 | 0.01138 | 1.138 |
| | | B | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 82 | 1.14567 | 1.15843 | 0.01276 | 1.276 |
| | | C | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 83 | 1.16583 | 1.17953 | 0.01370 | 1.370 |
| | | D | 10 | 10 | 9[1] | 9 | 9 | 9 | 9 | 8[1] | 84 | 1.17583 | 1.18575 | 0.00992 | 0.992 |
| | 25 | A | 10 | 10 | 10 | 10 | 9[1] | 9 | 9 | 9 | 85 | 1.17505 | 1.18534 | 0.01029 | 1.029 |
| | | B | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 86 | 1.16705 | 1.17973 | 0.01268 | 1.268 |
| | | C | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 87 | 1.16854 | 1.18229 | 0.01375 | 1.375 |
| | | D | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 88 | 1.16895 | 1.18116 | 0.01221 | 1.221 |
| | 50 | A | 10 | 9[1] | 9 | ~~10~~ 9 | 9 | 8[1] | 7[1] | 7 | 89 | 1.15635 | 1.16611 | 0.00976 | 0.976 |
| | | B | 10 | 10 | 10 | 10[2] | 10 | 9[1] | 9 | 9 | 90 | 1.16250 | 1.17308 | 0.01058 | 1.058 |
| | | C | 10 | 10 | 9[1] | 9 | 9 | 9 | 9 | 9 | 91 | 1.14706 | 1.15900 | 0.01194 | 1.194 |
| | | D | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 92 | 1.14270 | 1.15398 | 0.01128 | 1.128 |
| | 100 | A | 10 | 10 | 10 | 9[1] | 9 | 8[1] | 8 | 8 | 93 | 1.15513 | 1.16431 | 0.00918 | 0.918 |
| | | B | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 94 | 1.16118 | 1.17274 | 0.01156 | 1.156 |
| | | C | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 95 | 1.16130 | 1.17318 | 0.01188 | 1.188 |
| | | D | 10 | 9[1] | 9 | 9 | 9 | 9 | 9 | 9 | 96 | 1.16486 | 1.17716 | 0.01230 | 1.230 |
| Initials: | | | DI | KF | KF | KF | KF | DI | KF | DI | Date Final Dry Weights: | | 9/2/15 | Initials: | CC |
| Time: | | | 1735 | 13:50 | 1520 | 1320 | 1125 | 1530 | 1315 | 1335 | | | | | |

9[1]

Notes & Comments
① Fish count: ~~10~~ KF 8/28/15
② Fish count: 9[1] KF 8/28/15
③ correction 0.00918, 0.918 cwf 9/2/15

Photoperiod is 16-hours light and 8-hours dark, illumination is ambient (50 to 100 ftcd)

| Randomization Template # | Feeding Type: | Artemia |
|---|---|---|
| 1 | Amount: | 1-mL[2], twice daily |
| | Morning: | X 0930 9:45 9:30 9:50 0950 9:30 |
| | Noon (if needed): | X X X |
| | Evening: | 1900 1845 1700 16:30 1453 1600 X1600 |

① see Artemia SOP for feeding preparation, section 5.3.B.7.b

# CETIS Analytical Report

Report Date: 03 Sep-15 09:47 (p 1 of 1)
Test Code: FPL-SL 15072SSC | 03-3411-3885

**Inland Silverside 7-d Larval Survival and Growth Test** — **Hydrosphere Research**

| | | | | | |
|---|---|---|---|---|---|
| Analysis ID: | 11-2897-6957 | Endpoint: | Mean Dry Biomass-mg | CETIS Version: | CETISv1.8.6 |
| Analyzed: | 03 Sep-15 9:43 | Analysis: | Linear Interpolation (ICPIN) | Official Results: | Yes |
| Batch ID: | 15-8090-6360 | Test Type: | Growth-Survival-Fec (7d) | Analyst: | |
| Start Date: | 25 Aug-15 17:35 | Protocol: | EPA/821/R-02-014 (2002) | Diluent: | Synthetic Saltwater |
| Ending Date: | 01 Sep-15 13:35 | Species: | Menidia beryllina | Brine: | Tropic Marin |
| Duration: | 6d 20h | Source: | Aquatic Indicators, FL | Age: | |
| Sample ID: | 02-6687-5947 | Code: | FPL-SL 15072 | Client: | Florida Power and Light - St. Lucie |
| Sample Date: | 24 Aug-15 07:00 | Material: | Final Effluent | Project: | WET Compliance Test |
| Receive Date: | 24 Aug-15 16:20 | Source: | FPL-SL (FL 0002208) | | |
| Sample Age: | 35h | Station: | D-001 | | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Linear | Linear | 2005164 | 200 | Yes | Two-Point Interpolation |

**Point Estimates**

| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL |
|---|---|---|---|---|---|---|
| IC25 | >100 | N/A | N/A | <1 | NA | NA |

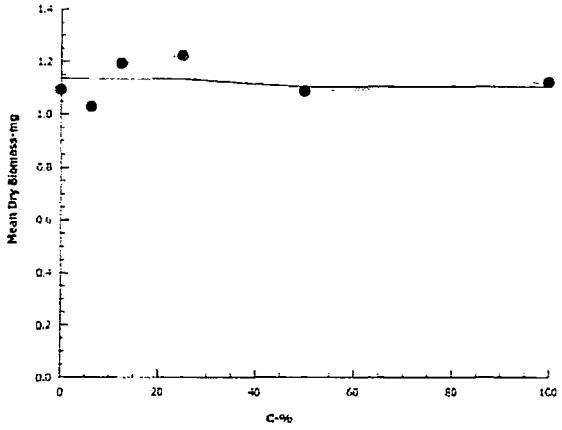
**Mean Dry Biomass-mg Summary** — Calculated Variate

| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect |
|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.095 | 0.986 | 1.244 | 0.05719 | 0.1144 | 10.45% | 0.0% |
| 6.25 | | 4 | 1.03 | 0.918 | 1.187 | 0.05915 | 0.1183 | 11.49% | 5.91% |
| 12.5 | | 4 | 1.194 | 0.992 | 1.37 | 0.08248 | 0.165 | 13.82% | -9.07% |
| 25 | | 4 | 1.223 | 1.029 | 1.375 | 0.07232 | 0.1446 | 11.82% | -11.74% |
| 50 | | 4 | 1.089 | 0.976 | 1.194 | 0.04679 | 0.09359 | 8.59% | 0.53% |
| 100 | | 4 | 1.123 | 0.918 | 1.23 | 0.06999 | 0.14 | 12.47% | -2.58% |

**Mean Dry Biomass-mg Detail**

| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 1.028 | 1.121 | 0.986 | 1.244 |
| 6.25 | | 0.918 | 0.964 | 1.051 | 1.187 |
| 12.5 | | 1.138 | 1.276 | 1.37 | 0.992 |
| 25 | | 1.029 | 1.268 | 1.375 | 1.221 |
| 50 | | 0.976 | 1.058 | 1.194 | 1.128 |
| 100 | | 0.918 | 1.156 | 1.188 | 1.23 |

**Graphics**



Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1006.0)**

Water Quality I

**Client:** FPL - St. Lucie Power Plant

**Code:** FPL-SL **Job #:** 15072

**Species:** *Menidia beryllina*

**ID #:** 7788

**Initiation Date:** 8.25.15 **Termination Date:** 9.1.15

**Sample Description:** Discharge

| Sample Description | % Effluent | pH (acceptable range for a valid test is 6 to 9) | | | | | | | | | | | | | | Dissolved Oxygen (mg/L) (acceptable minimum for a valid test is 4.0 mg/L) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old |
| | | 0 | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | 0 | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 |
| Control | 0 | E.C | 7.9 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 6.3 | 5.3 | 6.6 | 5.3 | 6.3 | 5.5 | 6.3 | 5.5 | 6.8 | 4.9 | 6.4 | 5.0 | 6.1 | 4.9 |
| Effluent | 6.25 | E.O | 7.9 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 7.9 | 8.1 | 8.0 | 8.2 | 7.9 | 6.3 | 6.4 | 6.7 | 5.4 | 6.3 | 5.3 | 6.5 | 5.1 | 6.7 | 5.0 | 6.4 | 5.4 | 6.0 | 4.7 |
| | 12.5 | E.O | 7.9 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 7.9 | 8.1 | 7.9 | 8.2 | 7.9 | 6.4 | 5.6 | 6.7 | 5.3 | 6.5 | 5.2 | 6.5 | 5.2 | 6.7 | 5.0 | 6.7 | 5.3 | 6.7 | 4.8 |
| | 25 | E.O | 7.9 | 8.1 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 7.9 | 8.1 | 7.9 | 8.2 | 7.9 | 6.4 | 6.0 | 6.7 | 5.2 | 6.4 | 5.2 | 6.5 | 5.0 | 6.5 | 5.0 | 6.7 | 5.3 | 6.5 | 4.8 |
| | 50 | 8.0 | 7.8 | 8.0 | 7.9 | 8.1 | 8.0 | 8.1 | 7.9 | 8.1 | 7.9 | 8.1 | 7.9 | 8.2 | 7.9 | 6.3 | 5.6 | 6.9 | 5.4 | 6.4 | 5.5 | 6.5 | 5.0 | 6.5 | 5.1 | 6.7 | 5.2 | 6.6 | 4.8 |
| | 100 | 8.0 | 7.8 | 8.0 | 7.8 | 8.0 | 7.9 | 8.1 | 7.9 | 8.0 | 7.8 | 8.1 | 7.9 | 8.1 | 7.8 | 6.3 | 5.7 | 7.0 | 5.4 | 6.4 | 5.4 | 6.6 | 5.3 | 6.4 | 5.1 | 6.8 | 5.2 | 6.4 | 4.8 |
| **Meter ID:** | | 6211 | 15 | 11 | 15 | 15 | 15 | 8 | 15 | 15 | 11 | 11 | 15 | 15 | 11 | 8 | 10 | 8 | 10 | 10 | 10 | 7 | 10 | 10 | 8 | 8 | 10 | 10 | 8 |

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| **Day:** | | | | | | | | |
| **Control ID:** | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| **Dilution ID:** | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| **Effluent ID:** | A | A | B | B | C | C | C | |
| **Initials:** | DL | KF DL | KF | KF DL | KF | KF DL | KF | DL |
| **Time:** | 1510 | 1400 1120 | 1450 | 1140 1345 1050 | 1115 | KF 1514 | 1111 1305 | 1030 1330 |

**Notes & Comments**

1. KF 8/26/15 D.O. 5.1

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1006.0)**

Water Quality II

**Client:** FPL - St. Lucie Power Plant

**Code:** FPL-SL **Job #:** 15072

**Species:** *Menidia beryllina*

**ID #:** 7788

**Initiation Date:** 8.25.15 **Termination Date:** 9.1.15

**Sample Description:** Discharge

| Sample Description | % Effluent | Salinity (‰) new 0 | old/new 1 | old/new 2 | old/new 3 | old/new 4 | old/new 5 | old/new 6 | old 7 |
|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | 34 | 34 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 |
| Effluent | 6.25 | 34 | 34 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 |
| | 12.5 | 34 | 34 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 |
| | 25 | 34 | 34 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 |
| | 50 | 34 | 34 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 |
| | 100 | 34 | 34 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 / 34 | 35 |
| | Meter ID: | 28 | 28 / 28 | 28 / 28 | 28 / 28 | 28 / 28 | 28 / 28 | 28 / 28 | 28 |

| Temperature (°C) (acceptable range for a valid test is 25±1°C) Measured at the end of each 24-h exposure period | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| | 25.0 | 25.2 | 25.1 | 24.9 | 24.7 | 25.2 | 25.4 | |
| | 25.0 | 25.2 | 25.1 | 25.0 | 24.7 | 25.2 | 25.4 | |
| | 25.0 | 25.2 | 25.1 | 25.1 | 24.7 | 25.2 | 25.4 | |
| | 25.0 | 25.2 | 25.1 | 25.0 | 24.7 | 25.2 | 25.4 | |
| | 25.0 | 25.2 | 25.1 | 25.0 | 24.7 | 25.2 | 25.4 | |
| | 25.0 | 25.2 | 25.1 | 25.1 | 24.7 | 25.2 | 25.4 | |
| | 57 | 57 | 57 | 57 | 57 | 57 | 57 | |

| Day: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| Control ID: | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| Dilution ID: | 3743 | 3743 | 3743 | 3743 | 3743 | 3743 | 3748 | |
| Effluent ID: | A | A | B | B | C | C | C | |
| Initials: | DJ | DJ | KF | DJ | KF | DJ | KF | DJ |
| Time: | 1510 | 1130 | 1140 | 1050 | 1015 | 1110 | 1030 | 1330 |

**Notes & Comments**

Hydrosphere research

Client: FPL - St. Lucie Power Plant

Code: FPL-SL Job: 15072

Sample Data

| # | Date M/D/Y | Day | Letter Code | Description | Dissolved Oxygen (D.O.) D.O. (mg/L) | D.O. (%) | Aeration ① (min.) | Post Aeration D.O. (mg/L) | Meter # | Initials | Total Residual Chlorine ② TRC (mg/L) | Meter # | Initials | Ammonia T-NH3 (mg/L) | pH | Meter # | Initials | Conductivity Conductivity (µmho/cm) | Meter # | Initials | Salinity Salinity (ppt) | Adjusted (ppt) | Meter # | Initials | Alkalinity/Hardness Alkalinity (mgCaCO3/L) | Hardness (mgCaCO3/L) | Initials |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8/25/15 | T | A | DOC1 | 6.3 | 93 | X | X | 8 | DI | <0.04 | 147 | DI | X | 7.91 | 11 | DI | X | X | DI | 34 | X | 28 | DI | 150 | 345 | DI |
| 2 | 8/26/15 | W | A | " | 7.1 | 102 | X | X | 8 | DI | X | X | DI | X | 8.0 | 11 | DI | X | X | DI | 35 | X | 29 | DI | X | X | DI |
| 3 | 8/27/15 | R | B | " | 6.3 | 95 | X | X | 10 | KF | <0.04 | 147 | DI | X | 8.0 | 15 | KF | X | X | KF | 34 | X | 28 | KF | 180 | 425 | DI |
| 4 | 8/28/15 | F | B | " | 6.6 | 97 | X | X | ①27 | DI | X | X | DI | X | 8.0 | 8 | DI | X | X | DI | 34 | X | 28 | DI | X | X | DI |
| 5 | 8/29/15 | SA | C | " | 6.7 | 101 | X | X | 10 | KF | 0.05 | 147 | KF | X | 8.0 | 15 | KF | X | X | KE | 34 | X | 28 | KF | 40 | 425 | KF |
| 6 | 8/30/15 | SU | C | " | 6.6 | 97 | X | X | 8 | DI | X | X | DI | X | 8.0 | 11 | DI | X | X | DI | 34 | X | 28 | DI | X | X | DI |
| 7 | 8/31/15 | M | C | " | 7.1 | 104 | X | X | 10 | KE | X | X | KF | X | 8.0 | 15 | KF | X | X | KF | 34 | X | 28 | KF | X | X | KF |
| 8 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | / / | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Notes & Comments**

① DI, 8/28/15

② no subsample for SSW 3748 cwj 9/3/15

① Aeration rate is 500-mLs/min (EPA-821-R-02-012, Section 9.1.8, page 41).

② If sample is to be dechlorintaed then use 1-mL Effluent Dechlorinator (8-g/L NaThio) per 1-L Effluent Sample per 1-ppm TRC (EPA-821-R-02-012, Section 9.1.6, pg 41)

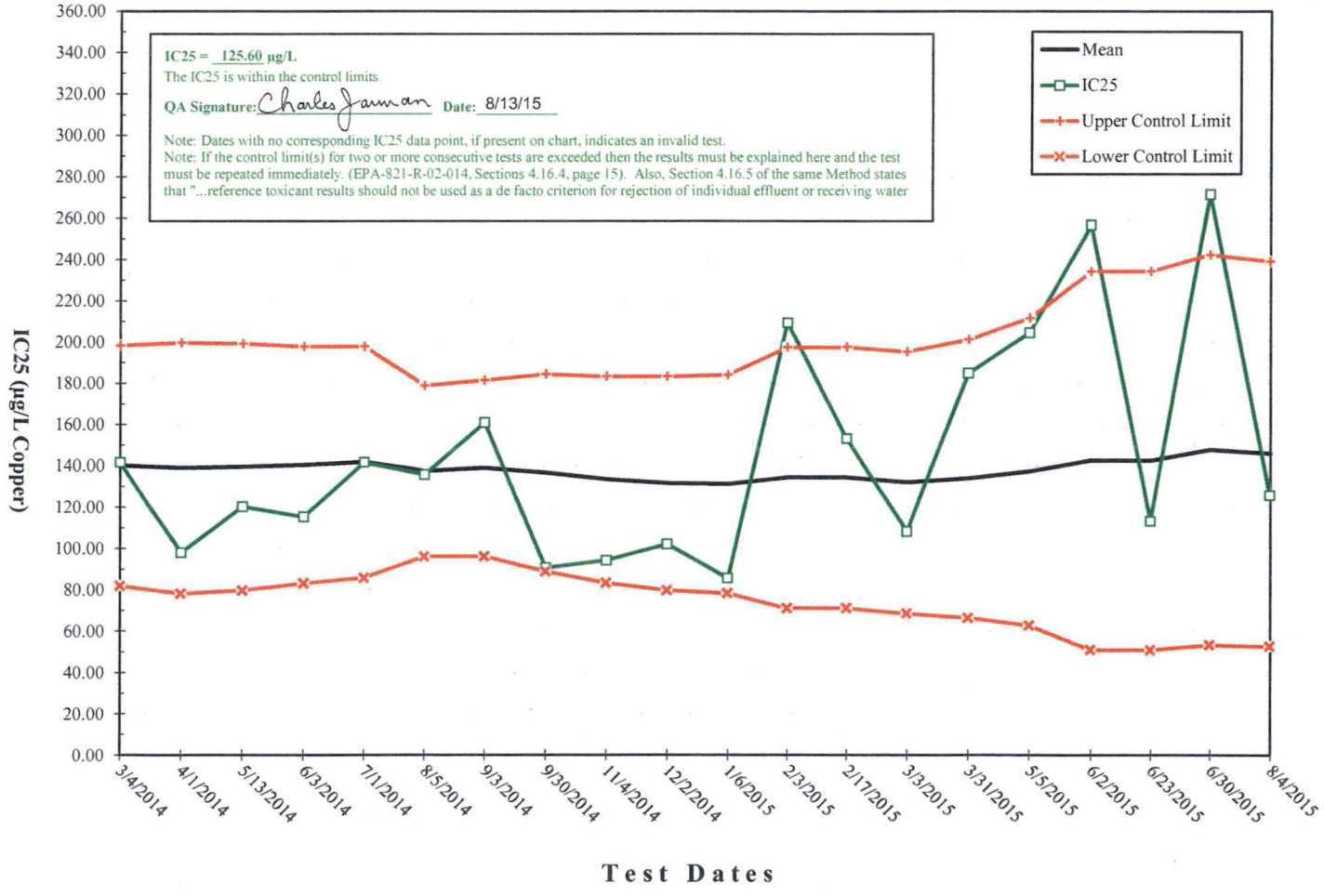
| Dilution Waters Code | ID # | Alkalinity/Hardness Alkalinity (mgCaCO3/L) | Hardness (mgCaCO3/L) | Initials |
|---|---|---|---|---|
| SSW | 3743 | 147 | X | DI |
| SSW | 3748 | NA | 9/3 | cwj |
| SSW ② | 3748 | | | |

## Appendix C. Reference Toxicant Data

Hydrosphere research

# Control Chart-I

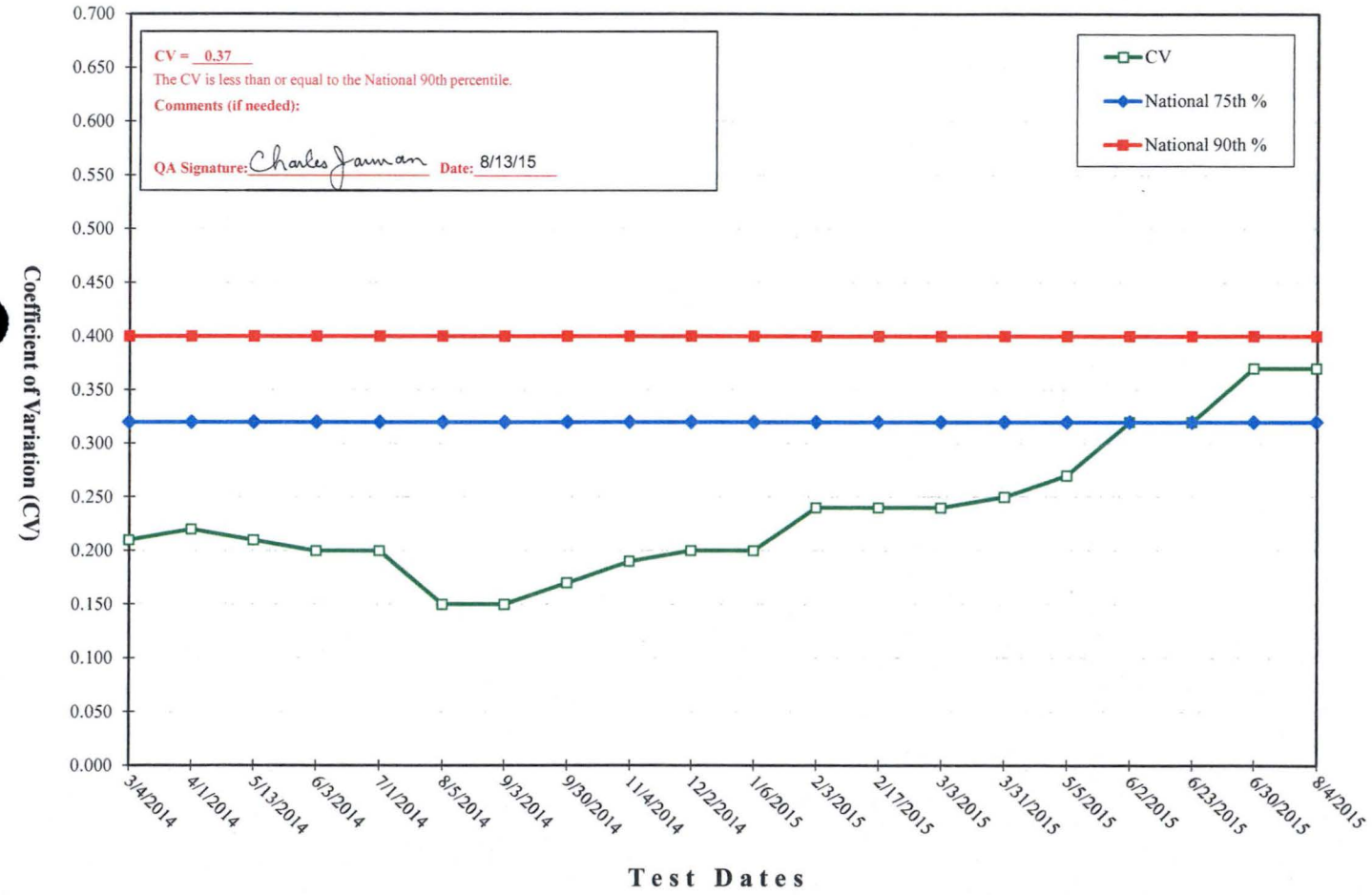
**Control Limits for Standard Reference Toxicant Tests**
**CHRONIC ··· *Mysidopsis bahia* (Hydrosphere Research)**



Hydrosphere research

# Control Chart-II

**Coefficient of Variation for Standard Reference Toxicant Tests**
**CHRONIC ··· *Mysidopsis bahia* (Hydrosphere Research)**



## REFERENCE TOXICANT LOG · Last 20

**Test:** 7-day Chronic
**Species:** *Mysidopsis bahia*
**Vendor:** Hydrosphere Research
Toxicant: Copper Sulfate (µg Cu / liter)

| N | Date | IC25 | Mean | S.D. | 2 SD | - 2 SD | + 2S.D. | CV | National 75th % | National 90th % | Lower Control Limit | Upper Control Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | 3/4/2014 | 141.80 | 140.29 | 29.09 | 58.17 | 82.12 | 198.46 | 0.21 | 0.32 | 0.40 | 82.12 | 198.46 |
| 61 | 4/1/2014 | 98.08 | 138.99 | 30.40 | 60.80 | 78.19 | 199.78 | 0.22 | 0.32 | 0.40 | 78.19 | 199.78 |
| 62 | 5/13/2014 | 120.30 | 139.55 | 29.91 | 59.83 | 79.72 | 199.38 | 0.21 | 0.32 | 0.40 | 79.72 | 199.38 |
| 63 | 6/3/2014 | 115.40 | 140.54 | 28.69 | 57.38 | 83.16 | 197.92 | 0.20 | 0.32 | 0.40 | 83.16 | 197.92 |
| 64 | 7/1/2014 | 141.80 | 141.91 | 28.02 | 56.03 | 85.88 | 197.95 | 0.20 | 0.32 | 0.40 | 85.88 | 197.95 |
| 65 | 8/5/2014 | 135.80 | 137.60 | 20.71 | 41.42 | 96.18 | 179.02 | 0.15 | 0.32 | 0.40 | 96.18 | 179.02 |
| 66 | 9/3/2014 | 161.10 | 138.96 | 21.34 | 42.68 | 96.28 | 181.63 | 0.15 | 0.32 | 0.40 | 96.28 | 181.63 |
| 67 | 9/30/2014 | 90.76 | 136.76 | 23.91 | 47.81 | 88.95 | 184.58 | 0.17 | 0.32 | 0.40 | 88.95 | 184.58 |
| 68 | 11/4/2014 | 94.28 | 133.46 | 25.02 | 50.04 | 83.42 | 183.50 | 0.19 | 0.32 | 0.40 | 83.42 | 183.50 |
| 69 | 12/2/2014 | 102.20 | 131.62 | 25.93 | 51.85 | 79.77 | 183.48 | 0.20 | 0.32 | 0.40 | 79.77 | 183.48 |
| 70 | 1/6/2015 | 85.70 | 131.30 | 26.49 | 52.98 | 78.32 | 184.27 | 0.20 | 0.32 | 0.40 | 78.32 | 184.27 |
| 71 | 2/3/2015 | 209.50 | 134.34 | 31.59 | 63.18 | 71.16 | 197.52 | 0.24 | 0.32 | 0.40 | 71.16 | 197.52 |
| 72 | 2/17/2015 | 153.30 | 134.39 | 31.62 | 63.24 | 71.15 | 197.62 | 0.24 | 0.32 | 0.40 | 71.15 | 197.62 |
| 73 | 3/3/2015 | 108.30 | 132.01 | 31.71 | 63.41 | 68.60 | 195.42 | 0.24 | 0.32 | 0.40 | 68.60 | 195.42 |
| 74 | 3/31/2015 | 185.00 | 133.89 | 33.72 | 67.43 | 66.45 | 201.32 | 0.25 | 0.32 | 0.40 | 66.45 | 201.32 |
| 75 | 5/5/2015 | 204.60 | 137.21 | 37.25 | 74.50 | 62.71 | 211.71 | 0.27 | 0.32 | 0.40 | 62.71 | 211.71 |
| 76 | 6/2/2015 | 256.80 | 142.61 | 45.85 | 91.70 | 50.90 | 234.31 | 0.32 | 0.32 | 0.40 | 50.90 | 234.31 |
| 77 | 6/23/2015 | 113.20 | 142.57 | 45.87 | 91.75 | 50.82 | 234.32 | 0.32 | 0.32 | 0.40 | 50.82 | 234.32 |
| 78 | 6/30/2015 | 271.60 | 147.75 | 54.02 | 108.04 | 39.71 | 255.80 | 0.37 | 0.32 | 0.40 | 53.19 | 242.31 |
| 79 | 8/4/2015 | 125.60 | 145.76 | 54.07 | 108.14 | 37.62 | 253.89 | 0.37 | 0.32 | 0.40 | 52.47 | 239.04 |

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)**

SRT: Survival, Growth & Fecundity

SRT for the Month of (circle one): Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Species: *Mysidopsis bahia* | Code: MS | ID #: 7761 | Age: 7-days old

Control Water: SSW | ID #: see "water quality" | Test Vessel: 500-mL plastic | Test Volume: 200-mL per rep.

Initiation Date: 8/4/15 | Termination Date: 8/11/15

Toxicant (desiccated): $Cu^{2+}$ | Stock Solution (Concentration): 0.1-gm $Cu^{2+}$ / Liter | Test Concentration (Units): gm $Cu^{2+}$ / Liter

| Sample ID | µg/L | REP | Live Counts T 0 | W 1 | R 2 | F 3 | SA 4 | SU 5 | M 6 | T 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| $Cu^{2+}$ | 31.25 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| $Cu^{2+}$ | 62.5 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Initials | | | KL | KL | KL | DI | TR | DJ | DK | DI |
| Time | | | 1700 | 1425 | 1135 | 1600 | 1430 | 1535 | 1445 | 1245 |

| Pan # | Tare Weight (0.00001-gms) | Total Weight (0.00001-gms) | Net Weight (0.00001-gms) | Wt./Shrimp (0.001-mgs) |
|---|---|---|---|---|
| 1 | 0.01284 | 0.01516 | 0.00198 | 0.396 |
| 2 | 0.01534 | 0.01432 | 0.00221 | 0.442 |
| 3 | 0.01561 | 0.01786 | ~~0.00207~~ | ~~0.414~~ ④ |
| 4 | 0.01583 | 0.01626 | 0.00202 | 0.404 |
| 5 | 0.01463 | 0.01731 | 0.00180 | 0.360 |
| 6 | 0.01584 | 0.017 ① | 0.00245 | 0.490 |
| 7 | 0.01462 | 0.01702 | 0.00240 | 0.480 |
| 8 | 0.01550 | 0.01777 | 0.00227 | 0.454 |
| 9 | 0.01575 | 0.01783 | 0.00208 | 0.416 |
| 10 | 0.01514 | 0.01717 | 0.00203 | 0.406 |
| 11 | 0.01383 | 0.01579 | 0.00196 | 0.392 |
| 12 | 0.01570 | 0.01767 | 0.00197 | 0.394 |
| 13 | 0.01495 | 0.01704 | 0.00209 | 0.418 |
| 14 | 0.01546 | 0.01780 | 0.00234 | 0.468 |
| 15 | 0.01549 | 0.01773 | ~~0.00300~~ | ~~0.600~~ ⑤ |
| 16 | 0.01473 | 0.01727 | 0.00254 | 0.508 |
| 17 | 0.01485 | 0.01677 | 0.00192 | 0.384 |
| 18 | 0.01524 | 0.01702 | 0.00178 | 0.356 |
| 19 | 0.01538 | 0.01726 | 0.00188 | 0.376 |
| 20 | 0.01554 | 0.01763 | 0.00209 | 0.418 |
| 21 | 0.01494 | 0.01708 | 0.00214 | 0.428 |
| 22 | 0.01427 | 0.01710 ② | 0.00218 | 0.436 |
| 23 | 0.01475 | 0.01675 | 0.00200 | 0.400 |
| 24 | 0.01564 | 0.01757 | 0.00193 | 0.386 |

Date Final Dry Weights: ~~8/11/15~~ ③ Initials: AM

Fecundity

| Pan # | Females: Eggs | Females: No Eggs | Males | Immature |
|---|---|---|---|---|
| | Total weight | | | |
| 1 | 0.01482 | | | |
| 2 | 0.01755 | | | |
| 3 | 0.01771 | | | |
| 4 | 0.01785 | | | |
| 5 | 0.01643 | | | |
| 6 | 0.01829 | | | |

Not needed for SRT's

Randomization Template #: 1

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Feeding Type: | Artemia (150-nauplii/shrimp/day) | | | | | | | |
| Amount: | 1-drop of a concentrated slurry / 2x / day | | | | | | | |
| Morning: | X | 830 | 0800 | 0845 | 0830 | 0900 | 930 | 900 |
| Evening: | 1705 | 1630 | 1800 | 1630 | 1740 | 1745 | 1720 | |
| Other: | | | | | | | | |

Notes & Comments

① correction. TR 8/11/15 ② Total weight = 0.21645

③ 8/12/15 CW & 8/13/15

④ 0.00210, 0.420 CW & 8/13/15

⑤ 0.00244, 0.448 CW & 8/13/15

Photoperiod is 16-hours light and 8-hours dark. Illumination is ambient (50 to 100 ftcd)

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)**

SRT: Survival, Growth & Fecundity

*SRT for the Month of (circle one):*
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Species: *Mysidopsis bahia* | Code: MS | ID #: 7761 | Age: 7-days old

Control Water: SSW | ID #: see "water quality"

Test Vessel: 500-mL plastic | Test Volume: 200-mL per rep.

Initiation Date: 8/4/15 | Termination Date: 8/11/15

Toxicant (dedicated): $Cu^{2+}$

Stock Solution (Concentration): 0.1-gm $Cu^{2+}$ / Liter

Test Concentration (Units): gm $Cu^{2+}$ / Liter

| Sample ID | µg/L | REP | Live Counts T 0 | W 1 | R 2 | F 3 | SA 4 | SU 5 | M 6 | T 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| $Cu^{2+}$ | 125 | A | 5 | 5 | 4' | 4 | 4 | 4 | 4 | 4 |
| | | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | G | 5 | 5 | 5 | 5 | 4' | 4 | 4 | 4 |
| | | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| $Cu^{2+}$ | 250 | A | 5 | 2³ | 0² | — | — | — | — | — |
| | | B | 5 | 2³ | 2 | 2 | 2 | 2 | 2 | 2 |
| | | C | 5 | 5 | 3² | 3 | 3 | 3 | 3 | 3 |
| | | D | 5 | 3² | 2' | 2 | 1' | 1 | 1 | 1 |
| | | E | 5 | 5 | 4' | 3' | 3 | 3 | 3 | 3 |
| | | F | 5 | 4' | 4' | 2² | 2 | 2 | 2 | 2 |
| | | G | 5 | 1⁴ | 1 | 1 | 1 | 1 | 1 | 1 |
| | | H | 5 | 2³ | 1' | 1 | 1 | 1 | 1 | 1 |
| $Cu^{2+}$ | 500 | A | 5 | 2³ | 2 | | 2 | 2 | 2 | 0 †1' |
| | | B | 5 | 0⁵ | — | — | — | — | — | — |
| | | C | 5 | 0⁵ | — | — | — | — | — | — |
| | | D | 5 | 1⁴ | 1 | 1 | 1 | 0¹ | — | — |
| | | E | 5 | 3² | 2' | 1' | 1 | 1 | 1 | 1 |
| | | F | 5 | 2³ | 0² | — | — | — | — | — |
| | | G | 5 | 0⁵ | — | — | — | — | — | — |
| | | H | 5 | 2³ | 1' | 1 | 0' | — | — | — |
| Initials | | | KL | KL | KL | DI | PR | DI | DK | DI |
| Time | | | 1700 | 1430 | 1140 | 1605 | 1435 | 1540 | 1445 | 1245 |

| Pan # | Tare Weight (0.00001-gms) | Total Weight (0.00001-gms) | Net Weight (0.00001-gms) | Wt. /Shrimp (0.001-mgs) |
|---|---|---|---|---|
| 25 | 0.01516 | 0.01643 | 0.00127 | 0.254 |
| 26 | 0.01432 | 0.01602 | 0.00170 | 0.340 |
| 27 | 0.01786 | 0.01990 | 0.00204 | 0.408 |
| 28 | 0.01626 | 0.01799 | 0.00173 | 0.346 |
| 29 | 0.01731 | 0.01920 | 0.00189 | 0.378 |
| 30 | 0.01728 | 0.01881 | 0.00153 | 0.306 |
| 31 | 0.01500 | 0.01607 | 0.00107 | 0.214 |
| 32 | 0.01561 | 0.01735 | 0.00174 | 0.348 |
| | | | | |
| 33 | 0.01589 | 0.01653 | 0.00064 | 0.128 |
| 34 | 0.01512 | 0.01595 | 0.00083 | 0.166 |
| 35 | 0.01623 | 0.01665 | 0.00042 | 0.084 |
| 36 | 0.01756 | 0.01875 | 0.00119 | 0.238 |
| 37 | 0.01629 | 0.01692 | 0.00063 | 0.126 |
| 38 | 0.01656 | 0.01691 | 0.00035 | 0.070 |
| 39 | 0.01487 | 0.01513 | 0.00026 | 0.052 |
| 40 | 0.01370 | 0.01395 | 0.00025 | 0.050 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 41 | 0.01553 | 0.01575 | 0.00022 | 0.044 |
| | | | | |
| | | | | |
| | | | | |

Growth (final dry weight basis)

Date Final Dry Weight: 8/12/15 | Initials: AM

Fecundity: Females (Eggs / No Eggs) | Males | Immature

Not needed for SRT's

Randomization Template #: 1

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Feeding Type: Artemia (150-nauplii/shrimp/day) | | | | | | | | |
| Amount: 1-drop of a concentrated slurry / 2x / day | | | | | | | | |
| Morning: | X | 830 | 0800 | 0845 | 0830 | 0900 | 930 | 900 |
| Evening: | 1705 | 1630 | 1800 | 1630 | 1700 | 1745 | 1720 | |
| Other: | | | | | | | | |

Notes & Comments:

① Correction DI 8.13.15

Photoperiod is 16-hours light and 8-hours dark, Illumination is ambient (50 to 100 ftcd)

# CETIS Analytical Report

Report Date: 13 Aug-15 15:48 (p 1 of 1)
Test Code: AUG15MSC | 04-2893-8827

**Mysidopsis 7-d Survival, Growth and Fecundity Test** — Hydrosphere Research

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 08-5051-1071 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.8.6 |
| **Analyzed:** | 13 Aug-15 15:48 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |
| **Batch ID:** | 02-1220-4639 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 04 Aug-15 17:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Synthetic Saltwater |
| **Ending Date:** | 11 Aug-15 12:45 | **Species:** | Mysidopsis bahia | **Brine:** | Tropic Marin |
| **Duration:** | 6d 20h | **Source:** | In-House Culture | **Age:** | |
| **Sample ID:** | 06-3871-0053 | **Code:** | AUG15MSC | **Client:** | Internal Lab |
| **Sample Date:** | 04 Aug-15 | **Material:** | Copper sulfate | **Project:** | Standard Reference Toxicant Test |
| **Receive Date:** | 04 Aug-15 | **Source:** | Reference Toxicant | | |
| **Sample Age:** | 17h | **Station:** | | | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Linear | Linear | 1485579 | 200 | Yes | Two-Point Interpolation |

**Point Estimates**

| Level | µg/L | 95% LCL | 95% UCL |
|---|---|---|---|
| IC25 | 125.6 | 98.61 | 146.7 |

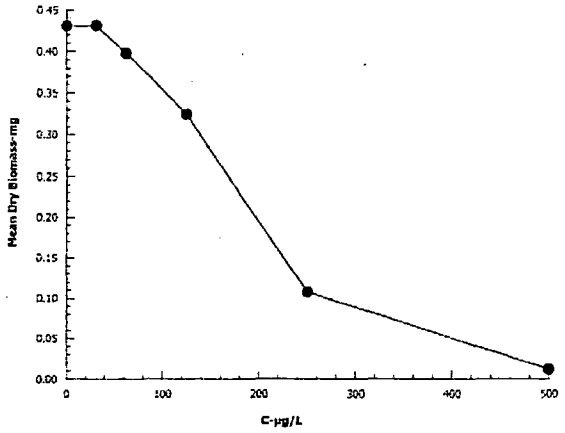
**Mean Dry Biomass-mg Summary**

| | | | | | Calculated Variate | | | | |
|---|---|---|---|---|---|---|---|---|---|
| C-µg/L | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | Dilution Water | 8 | 0.4308 | 0.36 | 0.49 | 0.01561 | 0.04415 | 10.25% | 0.0% |
| 31.25 | | 8 | 0.4313 | 0.392 | 0.508 | 0.01433 | 0.04052 | 9.4% | -0.12% |
| 62.5 | | 8 | 0.398 | 0.356 | 0.436 | 0.009761 | 0.02761 | 6.94% | 7.6% |
| 125 | | 8 | 0.3243 | 0.214 | 0.408 | 0.0226 | 0.06393 | 19.72% | 24.72% |
| 250 | | 8 | 0.108 | 0 | 0.238 | 0.02598 | 0.07349 | 68.05% | 74.93% |
| 500 | | 8 | 0.01175 | 0 | 0.05 | 0.007713 | 0.02182 | 185.7% | 97.27% |

**Mean Dry Biomass-mg Detail**

| C-µg/L | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 0.396 | 0.442 | 0.42 | 0.404 | 0.36 | 0.49 | 0.48 | 0.454 |
| 31.25 | | 0.416 | 0.406 | 0.392 | 0.394 | 0.418 | 0.468 | 0.448 | 0.508 |
| 62.5 | | 0.384 | 0.356 | 0.376 | 0.418 | 0.428 | 0.436 | 0.4 | 0.386 |
| 125 | | 0.254 | 0.34 | 0.408 | 0.346 | 0.378 | 0.306 | 0.214 | 0.348 |
| 250 | | 0 | 0.128 | 0.166 | 0.084 | 0.238 | 0.126 | 0.07 | 0.052 |
| 500 | | 0.05 | 0 | 0 | 0 | 0.044 | 0 | 0 | 0 |

**Graphics**




CWJ 8/13/15

Hydrosphere research

## Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)

SRT: Water Quality I

*SRT for the Month of (circle one):*

Jan Feb Mar Apr May Jun Jul (Aug) Sep Oct Nov Dec

**Species:** *Mysidopsis bahia*

**ID #:** 7761

**Initiation Date:** 8/4/15 **Termination Date:** 8/11/15

**Toxicant (desiccated):** $Cu^{2+}$

**Stock Solution (Concentration):** 0.1-gm $Cu^{2+}$ / Liter

**Test Concentration (Units):** gm $Cu^{2+}$ / Liter

| mLs of Stock / 1.6-Liters | µg/L | pH | | | | | | | | | | | | | | Dissolved Oxygen (mg/L) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old |
| | | 0 | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | 0 | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 |
| Control | 0 | 8.0 | 7.8 | 7.9 | 7.8 | 7.9 | 7.8 | 8.0 | 7.9 | 8.0 | 7.7 | 7.9 | 7.8 | 8.1 | 7.8 | 6.6 | 5.7 | 6.9 | 6.3 | 7.1 | 5.2 | 7.4 (8.2 D1 8.7) | 5.5 | 7.3 | 5.6 | 8.1 | 6.2 | 7.1 | 5.8 |
| 0.5 | 31.25 | 8.0 | 7.8 | 8.0 | 7.8 | 7.9 | 7.9 | 8.1 | 7.8 | 8.0 | 7.7 | 7.9 | 7.8 | 8.1 | 7.8 | 6.9 | 6.0 | 6.4 | 6.4 | 7.1 | 5.0 | 7.4 | 5.8 | 7.3 | 5.7 | 8.0 | 6.0 | 7.1 | 5.8 |
| 1 | 62.5 | 8.1 | 7.8 | 8.0 | 7.8 | 7.9 | 7.9 | 8.1 | 7.8 | 8.0 | 7.7 | 7.9 | 7.8 | 8.1 | 7.8 | 6.9 | 6.1 | 6.4 | 6.4 | 7.1 | 5.2 | 7.3 | 6.0 | 7.3 | 5.9 | 8.1 | 6.0 | 7.1 | 5.7 |
| 2 | 125 | 8.1 | 7.9 | 8.0 | 7.8 | 7.9 | 7.9 | 8.1 | 7.9 | 8.0 | 7.7 | 7.9 | 7.8 | 8.1 | 7.8 | 7.0 | 6.1 | 6.4 | 6.4 | 7.1 | 5.2 | 7.4 | 6.0 | 7.3 | 5.7 | 8.1 | 6.1 | 7.1 | 5.8 |
| 4 | 250 | 8.1 | 7.9 | 8.0 | 7.9 | 7.9 | 7.9 | 8.1 | 7.9 | 8.0 | 7.9 | 7.9 | 7.9 | 8.1 | 7.9 | 7.0 | 6.2 | 6.4 | 6.5 | 7.1 | 5.2 | 7.4 | 6.1 | 7.3 | 5.8 | 8.1 | 6.2 | 7.1 | 5.8 |
| 8 | 500 | 8.1 | 7.9 | 8.0 | 7.9 | 7.9 | 7.9 (D1 8.7) | 8.0 (D1 8.7) | 7.9 | 8.0 | 7.8 | 7.9 | | | | 7.1 | 6.2 | 6.4 | 6.5 | 7.1 | 5.2 (D1 8.7) | 7.1 (D1 8.7) | 6.1 | 7.2 | 6.2 | 8.2 | | | |
| Meter ID: | | 8 | 8 | 8 | 8 | 8 | 11 | 11 | 8 | 11 | 8 | 8 | 15 | 15 | 11 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 7 | 8 | 7 | 7 | 10 | 10 | 8 |
| Day: | | 0 | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | | | | | | | | | | | | | |
| Stock Solution ID (SLN): | | 15129 | 15129 | | 15129 | | 15129 | | 15129 | | 15129 | | 15129 | | | | | | | | | | | | | | | | |
| Dilution ID: | | 3716 | 3716 | | 3716 | | 3716 | | 3723 | | 3723 | | 3723 | | | | | | | | | | | | | | | | |
| Initials: | | KL | KL | KL | KL | KL | DJ | DJ | JK | DJ | DJ | DJ | DK | DK | DJ | | | | | | | | | | | | | | |
| Time: | | 1125 | 1400 | 950 | 1125 | 845 | 1515 | 0940 | 1415 | 1800 | 1527 | 1040 | 1630 | 1045 | 1240 | | | | | | | | | | | | | | |

**Notes & Comments** D1 8.7

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1007.0)**

SRT: Water Quality II

*SRT for the Month of (circle one):*

Jan Feb Mar Apr May Jun Jul (Aug) Sep Oct Nov Dec

**Species:** *Mysidopsis bahia*

**ID #:** 7761

**Initiation Date:** 8/4/15 **Termination Date:** 8/11/15

**Toxicant (desiccated):** $Cu^{2+}$

**Stock Solution (Concentration):** 0.1-gm $Cu^{2+}$ / Liter

**Test Concentration (Units):** gm $Cu^{2+}$ / Liter

| mLs of Stock / 1.6-Liters | µg/L | Salinity (‰) Measured in each new sample and control | | | | | | | | Temperature (°C) Measured at the end of each 24-h exposure period | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Control | 0 | 20 | 21 20 | 21 20 | 23 20 | 20 20 | 20 20 | 20 20 | 20 | 26.5 | 25.8 | 25.3 | 26.3 | 25.8 | 25.8 | 26.1 | |
| 0.5 | 31.25 | 20 | 21 20 | 21 20 | 23 20 | 20 20 | 20 20 | 20 20 | 20 | 26.5 | 25.8 | 25.3 | 26.3 | 25.8 | 25.8 | 26.1 | |
| 1 | 62.5 | 20 | 21 20 | 21 20 | 23 20 | 20 20 | 20 20 | 20 20 | 20 | 26.5 | 25.8 | 25.3 | 26.2 | 25.8 | 25.8 | 26.1 | |
| 2 | 125 | 20 | 21 20 | 21 20 | 23 20 | 20 20 | 20 20 | 20 20 | 20 | 26.5 | 25.8 | 25.3 | 26.3 | 25.8 | 25.8 | 26.1 | |
| 4 | 250 | 20 | 21 20 | 21 20 | 23 20 | 20 20 | 20 20 | 20 20 | 20 | 26.5 | 25.8 | 25.3 | 26.2 | 25.8 | 25.8 | 26.1 | |
| 8 | 500 | 20 | 21 20 | 21 20 | 23 20 DI 8 | 20 20 | | | | 26.5 | 25.8 | 25.3 DI 8/7 | 26.2 | 25.8 | | | |
| Meter ID: | | 28 | 28 28 | 28 28 | 28 28 | 28 28 | 28 28 | 28 28 | 28 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | |
| Day: | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Notes & Comments | | | | | | | |
| Stock Solution ID (SLN): | | 15129 | 15129 | 15129 | 15129 | 15129 | 15129 | 15129 | | | | | | | | | |
| Dilution ID: | | 3716 | 3716 | 3716 | 3716 | 3723 | 3723 | 3723 | | | | | | | | | |
| Initials: | | KL | KL | KL | DI | DI | DI | DK | DI | | | | | | | | |
| Time: | | 1125 | 950 | 845 | 0945 | 1000 | 1040 | 1045 | 1240 | | | | | | | | |

AQUATIC INDICATORS

# Control Chart - I

**Control Limits for Standard Reference Toxicant Tests**

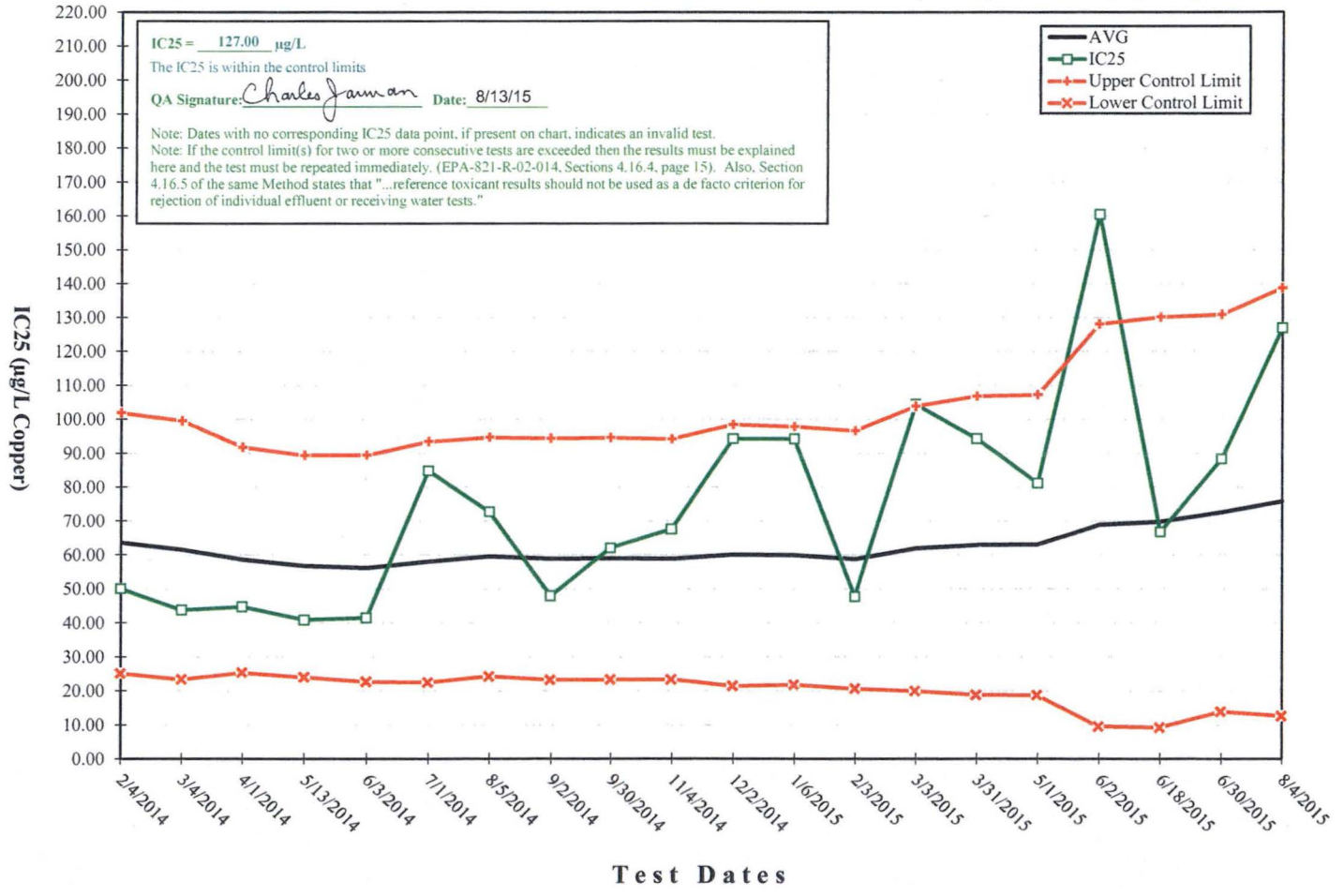
**CHRONIC ··· *Menidia beryllina* (performed by Hydrosphere Research)**

**IC25 =** 127.00 **µg/L**

The IC25 is within the control limits

**QA Signature:** Charles Jarman **Date:** 8/13/15

Note: Dates with no corresponding IC25 data point, if present on chart, indicates an invalid test.
Note: If the control limit(s) for two or more consecutive tests are exceeded then the results must be explained here and the test must be repeated immediately. (EPA-821-R-02-014, Sections 4.16.4, page 15). Also, Section 4.16.5 of the same Method states that "...reference toxicant results should not be used as a de facto criterion for rejection of individual effluent or receiving water tests."

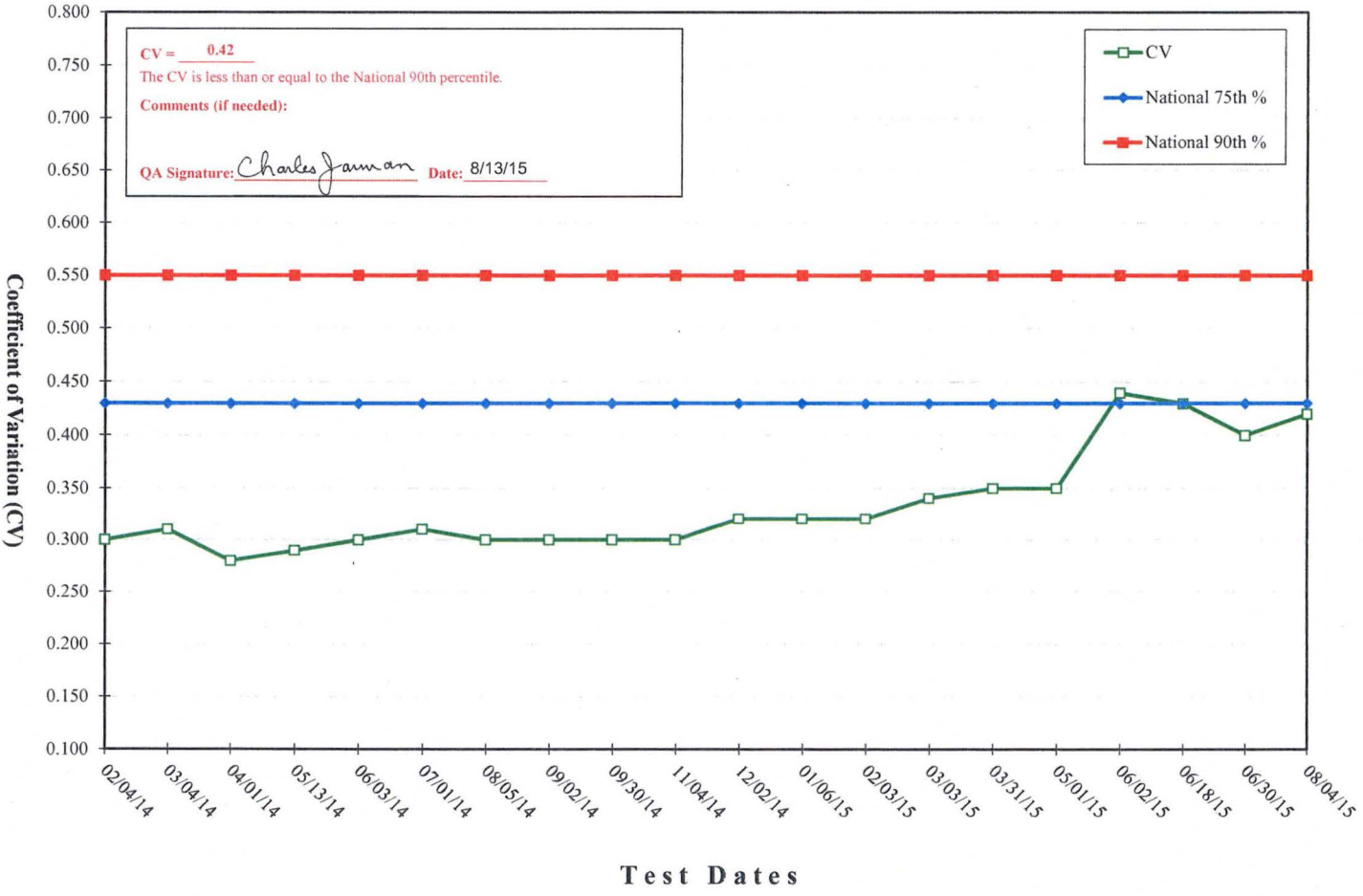


AQUATIC INDICATORS

# Control Chart - II

**Coefficient of Variation for Standard Reference Toxicant Tests**

**CHRONIC ··· *Menidia beryllina* (performed by Hydrosphere Research)**



**REFERENCE TOXICANT LOG · Last 20**

**Test:** 7-day Chronic
**Species:** *Menidia beryllina*
**Toxicant:** Copper Sulfate (µg Cu / liter)

**Aquatic Indicators**

| N | DATE | IC25 | AVG | S.D. | 2 SD | + 2 SD | - 2SD | CV | National 75th % | National 90th % | Lower Control Limit | Upper Control Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 127 | 02/04/14 | 50.12 | 63.60 | 19.19 | 38.37 | 101.97 | 25.22 | 0.30 | 0.43 | 0.55 | 25.22 | 101.97 |
| 128 | 03/04/14 | 43.86 | 61.57 | 19.02 | 38.04 | 99.62 | 23.53 | 0.31 | 0.43 | 0.55 | 23.53 | 99.62 |
| 129 | 04/01/14 | 44.81 | 58.64 | 16.58 | 33.16 | 91.80 | 25.48 | 0.28 | 0.43 | 0.55 | 25.48 | 91.80 |
| 130 | 05/13/14 | 40.98 | 56.76 | 16.33 | 32.67 | 89.43 | 24.09 | 0.29 | 0.43 | 0.55 | 24.09 | 89.43 |
| 131 | 06/03/14 | 41.51 | 56.11 | 16.68 | 33.37 | 89.48 | 22.74 | 0.30 | 0.43 | 0.55 | 22.74 | 89.48 |
| 132 | 07/01/14 | 84.86 | 58.00 | 17.71 | 35.42 | 93.43 | 22.58 | 0.31 | 0.43 | 0.55 | 22.58 | 93.43 |
| 133 | 08/05/14 | 72.73 | 59.52 | 17.60 | 35.20 | 94.72 | 24.32 | 0.30 | 0.43 | 0.55 | 24.32 | 94.72 |
| 134 | 09/02/14 | 47.93 | 58.86 | 17.78 | 35.56 | 94.42 | 23.29 | 0.30 | 0.43 | 0.55 | 23.29 | 94.42 |
| 135 | 09/30/14 | 62.07 | 58.99 | 17.80 | 35.59 | 94.58 | 23.40 | 0.30 | 0.43 | 0.55 | 23.40 | 94.58 |
| 136 | 11/04/14 | 67.65 | 58.84 | 17.70 | 35.41 | 94.25 | 23.43 | 0.30 | 0.43 | 0.55 | 23.43 | 94.25 |
| 137 | 12/02/14 | 94.31 | 60.01 | 19.25 | 38.49 | 98.50 | 21.51 | 0.32 | 0.43 | 0.55 | 21.51 | 98.50 |
| 138 | 01/06/15 | 94.20 | 59.88 | 18.99 | 37.99 | 97.86 | 21.89 | 0.32 | 0.43 | 0.55 | 21.89 | 97.86 |
| 139 | 02/03/15 | 47.72 | 58.70 | 18.98 | 37.96 | 96.66 | 20.74 | 0.32 | 0.43 | 0.55 | 20.74 | 96.66 |
| 140 | 03/03/15 | 104.50 | 61.96 | 20.97 | 41.94 | 103.90 | 20.02 | 0.34 | 0.43 | 0.55 | 20.02 | 103.90 |
| 141 | 03/31/15 | 94.33 | 62.89 | 22.00 | 43.99 | 106.88 | 18.89 | 0.35 | 0.43 | 0.55 | 18.89 | 106.88 |
| 142 | 05/01/15 | 81.19 | 63.04 | 22.12 | 44.24 | 107.28 | 18.80 | 0.35 | 0.43 | 0.55 | 18.80 | 107.28 |
| 143 | 06/02/15 | 160.60 | 68.91 | 30.55 | 61.10 | 130.01 | 7.81 | 0.44 | 0.43 | 0.55 | 9.65 | 128.17 |
| 144 | 06/18/15 | 66.76 | 69.77 | 30.22 | 60.44 | 130.20 | 9.33 | 0.43 | 0.43 | 0.55 | 9.33 | 130.20 |
| 145 | 06/30/15 | 88.34 | 72.51 | 29.23 | 58.45 | 130.96 | 14.06 | 0.40 | 0.43 | 0.55 | 14.06 | 130.96 |
| 146 | 08/04/15 | 127.00 | 75.77 | 31.51 | 63.03 | 138.80 | 12.75 | 0.42 | 0.43 | 0.55 | 12.75 | 138.80 |

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1006.0)**
SRT: Survival & Growth

SRT for the Month of (circle one): Jan Feb Mar Apr May Jun Jul (Aug) Sep Oct Nov Dec

Species: *Menidia beryllina* Code: SS
ID #: 7753 Age: 11d

Control Water: SSW
ID #: see "water quality"
Test Vessel: Plastic Cup (DM32)
Test Volume: 500-mL / rep.

Initiation Date: 8/4/15 Termination Date: 8.11.15
Toxicant (dedicated): $Cu^{2+}$
Stock Solution (Concentration): 0.1-gm $Cu^{2+}$ / Liter
Test Concentration (Units): gm $Cu^{2+}$ / Liter

0.5mg/fish

| Solution | µg/L | Rep | Live Counts T 0 | W 1 | R 2 | F 3 | SA 4 | SU 5 | M 6 | T 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0 | A | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | B | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | C | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | D | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| $Cu^{2+}$ | 31.25 | A | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | B | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | C | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | D | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| $Cu^{2+}$ | 62.5 | A | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | B | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | C | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | D | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| $Cu^{2+}$ | 125 | A | 10 | 10 | 9[1] | 9 | 7[2] | 7 | 7 | 7 |
| | | B | 10 | 10 | 9[1] | 9 | 9 | 9 | 9 | 9 |
| | | C | 10 | 10 | 10 | 9[1] | 8[1] | 8 | 8 | 8 |
| | | D | 10 | 10 | 10 | 7[3] | 7 | 7 | 7 | 7 |
| $Cu^{2+}$ | 250 | A | 10 | 5[5] | 4[1] | 3[1] | 1[2] | 0[1] | | |
| | | B | 10 | 7[3] | 4[3] | 3[1] | 1[2] | 0[1] | | |
| | | C | 10 | 5[5] | 3[2] | 2[1] | 1[1] | 1 | 1 | 1 |
| | | D | 10 | 6[4] | 6 | 5[1] | 5 | 0[5] | | |
| $Cu^{2+}$ | 500 | A | 10 | 1[9] | 0[1] | | | | | |
| | | B | 10 | 0[10] | | | | | | |
| | | C | 10 | 0[10] | | | | | | |
| | | D | 10 | 0[10] | | | | | | |
| Initials | | | KL | KL | KL | DJ | JC | DL | DK | DK |
| Time | | | 1455 | 1500 | 1155 | 1615 | 1450 | 1555 | 1630 | 1100 |

| Pan # | Tare Weight (0.00001-gms) | Total Weight (0.00001-gms) | Net Weight (0.00001-gms) | Wt. / Fish (0.001-mgs) |
|---|---|---|---|---|
| 1 | 1.14128 | 1.15916 | 0.01788 | 1.788 |
| 2 | 1.14727 | 1.16624 | 0.01897 | 1.897 |
| 3 | 1.15275 | 1.17080 | 0.01805 | 1.805 |
| 4 | 1.15622 | 1.17378 | 0.01756 | 1.756 |
| 5 | 1.17475 | 1.19750 | 0.02275 | 2.275 |
| 6 | 1.15448 | 1.17406 | 0.01958 | 1.958 |
| 7 | 1.15480 | 1.17439 | 0.01959 | 1.959 |
| 8 | 1.17525 | 1.19224 | 0.01699 | 1.699 |
| 9 | 1.16115 | 1.17908 | 0.01793 | 1.793 |
| 10 | 1.15661 | 1.17428 | 0.01767 | 1.767 |
| 11 | 1.14822 | 1.16733 | 0.01911 | 1.911 |
| 12 | 1.17198 | 1.18892 | 0.01694 | 1.694 |
| 13 | 1.14920 | 1.16215 | 0.01295 | 1.295 |
| 14 | 1.16314 | 1.17935 | 0.01621 | 1.621 |
| 15 | 1.15753 | 1.17195 | 0.01442 | 1.442 |
| 16 | 1.15389 | 1.16798 | 0.01409 | 1.409 |
| 17 | 1.16732 | 1.16894 | 0.00162 | 0.162 |

Growth (original number, final dry weight basis)

Date Final Dry Weights: 8/12/15 Initials: PR / AM

Randomization Template #: 1

| | Artemia |
|---|---|
| Feeding Type: | |
| Amount: | 1-mL², twice daily |
| Morning: | X 830 0800 0845 0830 0900 930 |
| Noon (if needed): | |
| Evening: | 1705 1630 1800 1630 1740 1745 1720 |

Notes & Comments

Photoperiod is 16-hours light and 8-hours dark, Illumination is ambient (50 to 100 ftcd)

② see Artemia SOP for feeding preparation, section 5.3.B.7.b

# CETIS Analytical Report

Report Date: 13 Aug-15 14:33 (p 1 of 1)
Test Code: AUG15SSC | 09-3838-9961

**Inland Silverside 7-d Larval Survival and Growth Test** — **Hydrosphere Research**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 19-4766-5227 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.8.6 |
| **Analyzed:** | 13 Aug-15 14:33 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |
| **Batch ID:** | 02-1349-5754 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 04 Aug-15 14:55 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Synthetic Saltwater |
| **Ending Date:** | 11 Aug-15 11:00 | **Species:** | Menidia beryllina | **Brine:** | Tropic Marin |
| **Duration:** | 6d 20h | **Source:** | Aquatic Indicators, FL | **Age:** | |
| **Sample ID:** | 15-0775-9043 | **Code:** | AUG15SSC | **Client:** | Internal Lab |
| **Sample Date:** | 04 Aug-15 | **Material:** | Copper sulfate | **Project:** | Standard Reference Toxicant Test |
| **Receive Date:** | 04 Aug-15 | **Source:** | Reference Toxicant | | |
| **Sample Age:** | 15h | **Station:** | | | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Linear | Linear | 1393150 | 200 | Yes | Two-Point Interpolation |

**Point Estimates**

| Level | µg/L | 95% LCL | 95% UCL |
|---|---|---|---|
| IC25 | 127 | 96.5 | 147.6 |

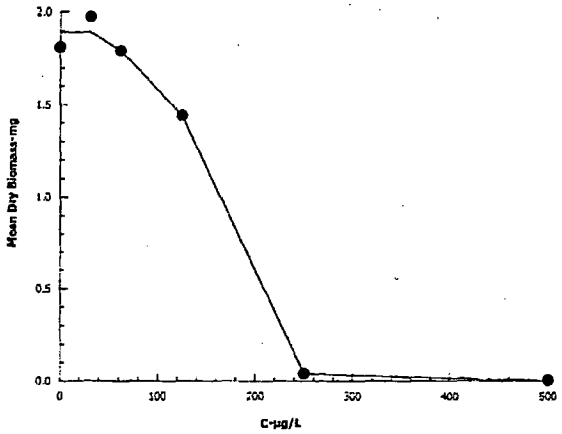
**Mean Dry Biomass-mg Summary** — Calculated Variate

| C-µg/L | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect |
|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.811 | 1.756 | 1.897 | 0.03026 | 0.06051 | 3.34% | 0.0% |
| 31.25 | | 4 | 1.973 | 1.699 | 2.275 | 0.1179 | 0.2357 | 11.95% | -8.9% |
| 62.5 | | 4 | 1.791 | 1.694 | 1.911 | 0.04508 | 0.09017 | 5.03% | 1.12% |
| 125 | | 4 | 1.442 | 1.295 | 1.621 | 0.06754 | 0.1351 | 9.37% | 20.41% |
| 250 | | 4 | 0.0405 | 0 | 0.162 | 0.0405 | 0.081 | 200.0% | 97.76% |
| 500 | | 4 | 0 | 0 | 0 | 0 | 0 | | 100.0% |

**Mean Dry Biomass-mg Detail**

| C-µg/L | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 1.788 | 1.897 | 1.805 | 1.756 |
| 31.25 | | 2.275 | 1.958 | 1.959 | 1.699 |
| 62.5 | | 1.793 | 1.767 | 1.911 | 1.694 |
| 125 | | 1.295 | 1.621 | 1.442 | 1.409 |
| 250 | | 0 | 0 | 0.162 | 0 |
| 500 | | 0 | 0 | 0 | 0 |

**Graphics**




CWF 8/13/15

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1006.0)**

SRT: Water Quality I

*SRT for the Month of (circle one):*

Jan Feb Mar Apr May Jun Jul (Aug) Sep Oct Nov Dec

**Species:** *Menidia beryllina*

**ID #:** 7753

**Initiation Date:** 8/4/15 **Termination Date:** 8.11.15

**Toxicant (desiccated):** $Cu^{2+}$

**Stock Solution (Concentration):** 0.1-gm $Cu^{2+}$ / Liter

**Test Concentration (Units):** gm $Cu^{2+}$ / Liter

| mLs of Stock / 2-Liters | µg/L | pH | | | | | | | | | | | | | | Dissolved Oxygen (mg/L) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old | new | old |
| | | 0 | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | 0 | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 |
| Control | 0 | 8.0 | 7.8 | 7.9 | 7.6 | 7.9 | 7.7 | 8.0 | 7.7 | 8.0 | 7.7 | 7.9 | 7.6 | 8.1 | 7.9 | 6.6 | 5.3 | 6.0 | 5.6 | 7.1 | 4.2 | 7.4 | 5.4 | 7.3 | 5.1 | 8.1 | 5.1 | 7.1 | 5.5 |
| 0.625 | 31.25 | 8.0 | 7.7 | 8.0 | 7.7 | 7.9 | 7.7 | 8.1 | 7.7 | 8.0 | 7.7 | 7.9 | 7.6 | 8.1 | 7.9 | 6.9 | 5.4 | 6.4 | 5.7 | 7.1 | 4.4 | 7.4 | 5.4 | 7.3 | 5.4 | 8.0 | 5.2 | 7.1 | 5.5 |
| 1.25 | 62.5 | 8.1 | 7.7 | 8.0 | 7.7 | 7.9 | 7.7 | 8.1 | 7.7 | 8.0 | 7.7 | 7.9 | 7.6 | 8.1 | 7.9 | 6.9 | 5.3 | 6.4 | 5.5 | 7.1 | 4.3 | 7.3 | 5.5 | 7.3 | 5.4 | 8.1 | 5.3 | 7.1 | 5.5 |
| 2.5 | 125 | 8.1 | 7.8 | 8.0 | 7.7 | 7.9 | 7.7 | 8.1 | 7.7 | 8.0 | 7.7 | 7.9 | 7.7 | 8.1 | 7.9 | 7.0 | 5.4 | 6.4 | 5.5 | 7.1 | 4.0 | 7.4 | 5.3 | 7.3 | 5.5 | 8.1 | 5.6 | 7.1 | 5.5 |
| 5 | 250 | 8.1 | 7.8 | 8.0 | 7.7 | 7.9 | 7.9 | 8.1 | 7.8 | 8.0 | 7.8 | 7.9 | 7.8 | 8.1 | 8.0 | 7.0 | 5.5 | 6.4 | 5.9 | 7.1 | 4.9 | 7.4 | 5.4 | 7.3 | 6.2 | 8.1 | 6.2 | 7.1 | 6.3 |
| 10 | 500 | 8.1 | 7.8 | 8.0 | 7.8 | 7.9 | | | | | | | | | | 7.1 | 5.7 | 6.4 | 6.1 | 7.1 | | | | | | | | | |
| Meter ID: | | 8 | 8 | 8 | 8 | 8 | 11 | 11 | 8 | 11 | 8 | 8 | 15 | 15 | 15 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 7 | 7 | 7 | 7 | 10 | 10 | 10 |

| Day: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| Stock Solution ID (SLN): | 13716 | 15129 | 15129 | 15129 | 15129 | 15129 | 15129 | |
| Dilution ID: | 3716 | 3716 | 3716 | 3716 | 3723 | 3723 | 3723 | |
| Initials: | KL | KL | KL | KL | KL | KL | DK | DK | |
| Time: | 1125 | 1440 | 950 | 1150 | 845 | 1625 | 1445 | 1430 | 1000 | 1550 | 1045 | 1620 | 1025 | |

**Notes & Comments**

① 15129 KL 8/4/15

Hydrosphere research

**Chronic Saltwater Method (EPA-821-R-02-014, Method 1006.0)**

SRT: Water Quality II

*SRT for the Month of (circle one):*

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

**Species:** *Mentidia beryllina*

**ID #:** 7753

**Initiation Date:** 8/4/15 **Termination Date:** 8.11.15

**Toxicant (desiccated):** $Cu^{2+}$

**Stock Solution (Concentration):** 0.1-gm $Cu^{2+}$ / Liter

**Test Concentration (Units):** gm $Cu^{2+}$ / Liter

| mLs of Stock / 2-Liters | µg/L | Salinity (‰) Measured in each new sample and control | | | | | | | | Temperature (°C) Measured at the end of each 24-h exposure period | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Control | 0 | 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 | 24.5 | 24.4 | 24.7 | 24.6 | 24.6 | 25.4 | 24.9 | |
| 0.625 | 31.25 | 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 | 24.5 | 24.4 | 24.7 | 24.6 | 24.6 | 25.4 | 24.9 | |
| 1.25 | 62.5 | 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 | 24.5 | 24.4 | 24.7 | 24.6 | 24.6 | 25.4 | 24.9 | |
| 2.5 | 125 | 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 | 24.5 | 24.4 | 24.7 | 24.6 | 24.6 | 25.4 | 24.9 | |
| 5 | 250 | 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 20 | 20 | 24.5 | 24.4 | 24.7 | 24.4 | 24.6 | 25.4 | 24.9 | |
| 10 | 500 | 20 | 20 20 | 20 20 | 20 20 | — 20 | | | | 24.5 | 24.4 | 24.7 | | | | | |
| Meter ID: | | 28 | 28 28 | 28 28 | 28 28 | 28 28 | 28 28 | 28 28 | 28 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | |
| Day: | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | |
| Stock Solution ID (SLN): | | 15129 | 15129 | 15129 | 15129 | 15129 | 15129 | 15129 | | | | | | | | | |
| Dilution ID: | | 3716 | 3716 | 3716 | 3716 | 3723 | 3723 | 3723 | | | | | | | | | |
| Initials: | | KL | KL | KL | DJ | DJ | DJ | DK | DK | | | | | | | | |
| Time: | | 1125 | 950 | 845 | 0945 | 1000 | 1040 | 1025 | 1035 | | | | | | | | |

**Notes & Comments**

# LABORATORY RESULTS – INTAKE

(FORM 2CS)

# LABORATORY RESULTS FOR WORK ORDER 15L0374

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
12/29/2015 10:42

**Client Sample ID: Intake - Grab 1**
**Client Sample ID (cont):**
**Sampled: 12/21/2015 3:00:00PM Received: 12/21/2015 4:45:00PM**
**Lab Sample #: 15L0374-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Microbiology** | | | | | | | | | | | | | |
| **Fecal Coliforms** | **1** | | | 1 | 1 | CFU/100 ml | 1 | 1512612 | 12/21/2015 18:15 | SC | 12/22/2015 18:15 | SM 9222D | |

Serial #: 12292015104253

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 15L0374

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
12/29/2015 10:42

## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512612 - SM 9222D** | | | | | | | | | | | |
| **Blank (1512612-BLK1)** | | | Prepared: 12/21/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Fecal Coliforms | ND | U | 1 | 1 | CFU/100 ml | | | | - | | |
| **Blank (1512612-BLK2)** | | | Prepared: 12/21/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Fecal Coliforms | ND | U | 1 | 1 | CFU/100 ml | | | | - | | |

Serial #: 12292015104253

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0374

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
12/29/2015 10:42

**LIST OF BOTTLES RECEIVED**

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **15L0374-01 Intake - Grab 1** | | |
| | A | Poly Na2S2O3 - 125mL |

Serial #: 12292015104253

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0374

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
12/29/2015 10:42

Attn: Chrissi-lee Williams

## Notes and Definitions

| | |
|---|---|
| U | Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit. |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 12292015104253

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

FPL

FPL Central Lab
6001A Village Blvd
West Palm Beach, FL 33407

# CHAIN-OF-CUSTODY FORM

SAMPLER:
PRINT
SIGN
TELEPHONE #

ENVIRO | NON-E



INITIAL HERE: ALL SAMPLES WERE TAKEN IN ACCORDANCE TO STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION SAMPLING REQUIREMENTS

SITE NAME/ADDRESS:
PSL - WW Permit Renewal

CONTAINERS
(DESCRIBE SOURCE USING A-Z)

(IF OTHER INDICATE BELOW)
OTHER: 1510374

ANALYSES REQUIRED/PRESERVATION

| SAMPLE NAME | DATE | TIME | *G/C | *# | *MATRIX | Fecal Coliform (126mL Plastic Na2SO3 + ICE) |
|---|---|---|---|---|---|---|
| Intake | 12/21/15 | 1500 | G | 1 | WW | X |

SAMPLERS REMARKS:

SEND LAB REPORT TO: In ICE 2.9°C

| CLEAN SAMPLE CONTAINERS RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | CLEAN SAMPLE CONTAINERS RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |
|---|---|---|---|---|---|---|---|---|---|---|
| RELINQUISHED BY: | Geosyntec | 12/21/15 | 1645 | N | Hand | RECEIVED BY: | FPL | 12/21/15 | 1645 | N |
| RELINQUISHED BY: | FPL | 12/21/15 | 1754 | N | Hand | RECEIVED BY: | | 12-21-15 | 16:17:59 | |
| RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |

LAB REMARKS:

TEMP CHECK
PH CHECK

*GRAB OR COMPOSITE *# OF CONTAINERS *MATRIX: SOIL, WATER, OTHER

# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **BNAs by EPA 625** | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | | 1.27 | 3.81 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 1,2-Dichlorobenzene | U | | | 1.02 | 3.06 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | | 0.660 | 1.98 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 1,3-Dichlorobenzene | U | | | 1.24 | 3.72 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 1,4-Dichlorobenzene | U | | | 1.18 | 3.54 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,3-Dichloroaniline | U | | | 0.510 | 1.53 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,4,5-Trichlorophenol | U | | | 0.680 | 2.04 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,4,6-Trichlorophenol | U | | | 0.560 | 1.68 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,4-Dichlorophenol | U | | | 0.630 | 1.89 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,4-Dimethylphenol | U | | | 0.490 | 1.47 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,4-Dinitrophenol | U | | | 0.160 | 0.480 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,4-Dinitrotoluene | U | | | 0.300 | 0.900 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |

Serial #: 01262016140549

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **BNAs by EPA 625** | | | | | | | | | | | | | |
| 2,6-Dichlorophenol | U | | | 0.237 | 0.712 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2,6-Dinitrotoluene | U | | | 0.520 | 1.56 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2-Chloronaphthalene | U | | | 0.550 | 1.65 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2-Chlorophenol | U | | | 0.890 | 2.67 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2-Methylnaphthalene | U | | | 0.0240 | 0.0720 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2-Methylphenol | U | | | 0.820 | 2.46 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 2-Nitrophenol | U | | | 0.880 | 2.64 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 3,3'-Dichlorobenzidine | U | | | 0.310 | 0.930 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 4,6-Dinitro-2-methylphenol | U | | | 0.270 | 0.810 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 4-Bromophenyl phenyl ether | U | | | 0.530 | 1.59 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 4-Chloro-3-methylphenol | U | | | 0.930 | 2.79 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| 4-Chlorophenyl phenyl ether | U | | | 0.580 | 1.74 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |

Serial #: 01262016140549

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **BNAs by EPA 625** | | | | | | | | | | | | | |
| 4-Nitrophenol | U | | | 0.700 | 2.10 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Acenaphthene | U | | | 0.490 | 1.47 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Acenaphthylene | U | | | 0.640 | 1.92 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Aniline | U | | | 0.890 | 2.67 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Anthracene | U | | | 0.500 | 1.50 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| a-Terpineol | U | | | 0.336 | 1.01 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Benzidine | U | | | 0.260 | 0.780 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Benzo (a) anthracene | U | | | 0.180 | 0.540 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Benzo (a) pyrene | U | | | 0.280 | 0.840 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Benzo (b) fluoranthene | U | | | 0.260 | 0.780 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Benzo (g,h,i) perylene | U | | | 0.210 | 0.630 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Benzo (k) fluoranthene | U | | | 0.480 | 1.44 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |

Serial #: 01262016140549

FPL Central Lab

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **BNAs by EPA 625** | | | | | | | | | | | | | |
| Bis(2-chloroethoxy)methane | U | | | 0.580 | 1.74 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Bis(2-chloroethyl)ether | U | | | 0.820 | 2.46 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Bis(2-chloroisopropyl)ether | U | | | 0.970 | 2.91 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Bis(2-ethylhexyl)phthalate | U | | | 1.32 | 3.96 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Butyl benzyl phthalate | U | | | 0.190 | 0.570 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Chrysene | U | | | 0.300 | 0.900 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Dibenz (a,h) anthracene | U | | | 0.160 | 0.580 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Dibenzofuran | U | | | 0.480 | 1.44 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Diethyl phthalate | U | | | 0.200 | 0.600 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Dimethyl phthalate | U | | | 0.290 | 0.870 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Di-n-butyl phthalate | U | | | 0.240 | 0.720 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Di-n-octyl phthalate | U | | | 0.170 | 0.510 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **BNAs by EPA 625** | | | | | | | | | | | | | |
| Fluoranthene | U | | | 0.280 | 0.840 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Fluorene | U | | | 0.520 | 1.56 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Hexachlorobenzene | U | | | 0.520 | 1.56 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Hexachlorobutadiene | U | | | 0.530 | 1.59 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Hexachlorocyclopentadiene | U | | | 0.690 | 2.07 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Hexachloroethane | U | | | 0.810 | 2.43 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Indeno (1,2,3-cd) pyrene | U | | | 0.150 | 0.450 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Isophorone | U | | | 0.680 | 2.04 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| m,p Cresol | U | | | 0.329 | 0.987 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Naphthalene | U | | | 0.700 | 2.10 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| n-Decane | U | | | 0.244 | 0.733 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Nitrobenzene | U | | | 0.770 | 2.31 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |

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**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **BNAs by EPA 625** | | | | | | | | | | | | | |
| N-Nitrosodimethylamine | U | | | 1.11 | 3.33 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| N-Nitrosodi-n-propylamine | U | | | 1.10 | 3.30 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| N-Nitrosodiphenylamine | U | | | 0.380 | 1.14 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| n-Octadecane | U | | | 1.59 | 4.78 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Pentachlorophenol | U | | | 0.320 | 0.960 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Phenanthrene | U | | | 0.450 | 1.35 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| **Phenol** | **6.59** | | | 0.580 | 1.74 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Pyrene | U | | | 0.220 | 0.660 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| Pyridine | U | | | 0.530 | 1.59 | ug/L | 1 | 1601149 | 1/8/2016 12:34 | AC | 1/11/2016 22:42 | EPA 625 | |
| *Surrogate: 2,4,6-Tribromophenol* | | | | | *50.7 %* | | *50-150* | *1601149* | *1/8/2016 12:34* | | *1/11/2016 22:42* | *EPA 625* | |
| *Surrogate: 2-Fluorobiphenyl* | | | | | *72.3 %* | | *50-150* | *1601149* | *1/8/2016 12:34* | | *1/11/2016 22:42* | *EPA 625* | |
| *Surrogate: 2-Fluorophenol* | | | | | *43.6 %* | | *30-110* | *1601149* | *1/8/2016 12:34* | | *1/11/2016 22:42* | *EPA 625* | |

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Tom Helton For Phoebe Brown, Central Lab Manager

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **BNAs by EPA 625** | | | | | | | | | | | | | |
| *Surrogate: Nitrobenzene-d5* | | | | | *63.1 %* | | *50-150* | *1601149* | *1/8/2016 12:34* | | *1/11/2016 22:42* | *EPA 625* | |
| *Surrogate: Phenol-d6* | | | | | *35.2 %* | | *30-110* | *1601149* | *1/8/2016 12:34* | | *1/11/2016 22:42* | *EPA 625* | |
| *Surrogate: p-Terphenyl* | | | | | *80.5 %* | | *50-150* | *1601149* | *1/8/2016 12:34* | | *1/11/2016 22:42* | *EPA 625* | |
| **Gross Alpha Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Alpha** | **114±35.3** | I | | 114 | 342 | pCi/L | 1 | 1601411 | 1/7/2016 10:00 | IN | 1/18/2016 8:20 | EPA 900.0 | |
| **Gross Beta Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Beta** | **329±26.1** | | | 76.3 | 229 | pCi/L | 1 | 1601411 | 1/7/2016 10:00 | IN | 1/18/2016 8:20 | EPA 900.0 | |
| **Microbiology** | | | | | | | | | | | | | |
| Carbonaceous BOD | U | | | 2.00 | 6.00 | mg/L | 1 | 1601142 | 1/7/2016 15:00 | SC | 1/12/2016 15:00 | CBOD SM5210B | |
| **Total Recoverable Metals by EPA 200.7** | | | | | | | | | | | | | |
| Antimony | U | | | 0.003 | 0.008 | mg/L | 1 | 1601131 | 1/7/2016 14:00 | MAZ | 1/7/2016 18:33 | EPA 200.7 | |

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: E86006** | | | | | | | | | | | | | |
| **Total Recoverable Metals by EPA 200.7** | | | | | | | | | | | | | |
| **Boron** | **3.55** | | | 0.004 | 0.011 | mg/L | 1 | 1601131 | 1/7/2016 14:00 | MAZ | 1/7/2016 18:33 | EPA 200.7 | |
| **Molybdenum** | **0.007** | I | | 0.004 | 0.013 | mg/L | 1 | 1601131 | 1/7/2016 14:00 | MAZ | 1/7/2016 18:33 | EPA 200.7 | |
| Tin | U | | | 0.008 | 0.024 | mg/L | 1 | 1601166 | 1/7/2016 14:00 | MAZ | 1/8/2016 13:11 | EPA 200.7 | |
| **Titanium** | **0.0018** | | | 0.0006 | 0.0018 | mg/L | 1 | 1601131 | 1/7/2016 14:00 | MAZ | 1/7/2016 18:33 | EPA 200.7 | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Color** | **5/8.12** | | | 1.00 | 3.00 | Pt-Co | 1 | 1601107 | 1/7/2016 9:15 | NL | 1/7/2016 9:15 | SM 2120B | |
| **MBAS as LAS, mol wt. 340** | **0.138** | I | | 0.0603 | 0.181 | mg/L | 1 | 1601134 | 1/7/2016 16:30 | SA | 1/7/2016 16:30 | SM5540C | |
| **Total Organic Carbon** | **0.411** | I | | 0.168 | 0.504 | mg/L | 1 | 1601102 | 1/7/2016 13:21 | SA | 1/7/2016 15:17 | TOC SM 5310C | |

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**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Ammonia as N** | **0.0618** | V | E | 0.0100 | 0.0400 | mg/L | 1 | F16A264 | 1/23/2016 8:36 | CMS | 1/25/2016 9:54 | EPA 350.1 | NELAC |
| **Bromide** | **72** | | I | 0.26 | 1.0 | mg/L | 50 | F16A181 | 1/20/2016 18:01 | TEH | 1/20/2016 18:01 | EPA 300.0 | NELAC |
| **Chemical Oxygen Demand** | **270** | | E | 31 | 120 | mg/L | 10 | F16A241 | 1/21/2016 12:29 | MV | 1/22/2016 9:14 | SM5220D | NELAC |
| **Fluoride** | **0.64** | | I | 0.0080 | 0.032 | mg/L | 5 | F16A181 | 1/20/2016 15:53 | MV | 1/20/2016 15:53 | EPA 300.0 | NELAC |
| **Nitrate as N** | **0.026** | I,V | I | 0.012 | 0.050 | mg/L | 1 | F16A051 | 1/7/2016 13:07 | mv | 1/7/2016 13:07 | SM4500NO3-F | NELAC |
| **Nitrite as N** | **0.014** | V | I | 0.0029 | 0.010 | mg/L | 1 | F16A052 | 1/7/2016 12:20 | mv | 1/7/2016 12:20 | SM4500NO3-F | NELAC |
| **Phosphorus-Total** | **0.0050** | I,V | E | 0.0034 | 0.025 | mg/L | 1 | F16A179 | 1/19/2016 14:25 | CMS | 1/19/2016 14:25 | SM4500-P F | NELAC |
| **Specific conductance** | **54000** | | I | 1.0 | 1.0 | umhos/cm | 1 | F16A186 | 1/19/2016 11:17 | CMS | 1/19/2016 11:17 | EPA 120.1 | NELAC |
| **Sulfate** | **3200** | | I | 0.46 | 1.8 | mg/L | 50 | F16A181 | 1/20/2016 18:01 | MV | 1/20/2016 18:01 | EPA 300.0 | NELAC |
| **Total Kjeldahl Nitrogen** | **0.58** | I | E | 0.18 | 0.75 | mg/L | 1 | F16A111 | 1/11/2016 10:11 | mv | 1/12/2016 10:16 | EPA 351.2 | NELAC |
| **Total Nitrogen** | **0.62** | | - | 0.050 | 0.050 | mg/L | 1 | F16A307 | 1/26/2016 13:43 | CMS | 1/26/2016 13:43 | Calc. | NELAC |
| **Total Organic Nitrogen** | **0.52** | | - | 0.050 | 0.050 | mg/L | 1 | F16A307 | 1/26/2016 13:43 | CMS | 1/26/2016 13:43 | Calc. | NELAC |

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01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Total Suspended Solids** | **47** | | I | 3.0 | 12 | mg/L | 1 | F16A104 | 1/11/2016 15:00 | MV | 1/11/2016 15:00 | SM2540 D | NELAC |
| **Metals (Total)** | | | | | | | | | | | | | |
| Arsenic | U | DL1 | F | 36 | 100 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| Beryllium | U | DL1 | F | 1.1 | 10 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| Cadmium | U | DL1 | F | 1.0 | 10 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| Chromium | U | DL1 | F | 1.9 | 10 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| **Copper** | **19** | I | F | 4.0 | 20 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| **Iron** | **75** | I,V | F | 27 | 100 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| **Lead** | **18** | I | F | 16 | 50 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| **Magnesium** | **1400** | | F | 0.28 | 1.0 | mg/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| Nickel | U | DL1 | F | 5.8 | 20 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| Selenium | U | DL1 | F | 37 | 100 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |

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01/26/2016 14:05

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 8:05:00AM Received: 1/6/2016 10:10:00AM**
**Lab Sample #: 16A0032-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Metals (Total)** | | | | | | | | | | | | | |
| Silver | U | DL1 | F | 8.2 | 50 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| Thallium | U | DL1 | F | 7.7 | 50 | ug/L | 5 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 10:59 | EPA 200.7 | NELAC |
| **Zinc** | **6.5** | I | F | 3.9 | 100 | ug/L | 10 | F16A088 | 1/8/2016 8:33 | MV | 1/11/2016 11:16 | EPA 200.7 | NELAC |
| **Analyzed at: Jupiter Environmental TNI Cert #: E86546** | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| **Mercury** | **0.00224** | | | 0.000250 | 0.00100 | ug/L | 1 | 1601638 | 1/22/2016 16:38 | ZS | 1/25/2016 14:21 | EPA 1631E | |

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**Reported:**
01/26/2016 14:05

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A051 - SM4500NO3-F** | | | | | | | | | | | |
| **Blank (F16A051-BLK1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrate as N | 0.0210 | I | 0.012 | 0.050 | mg/L | | | | | | |
| **LCS (F16A051-BS1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrate as N | 0.971 | | 0.012 | 0.050 | mg/L | 1.000 | | 97 | 90-110 | | |
| **LCS Dup (F16A051-BSD1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrate as N | 0.970 | | 0.012 | 0.050 | mg/L | 1.000 | | 97 | 90-110 | 0.1 | 20 |
| **Matrix Spike (F16A051-MS1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrate as N | 1.07 | | 0.012 | 0.050 | mg/L | 1.000 | 0.0263 | 105 | 90-110 | | |
| **Matrix Spike Dup (F16A051-MSD1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrate as N | 1.06 | | 0.012 | 0.050 | mg/L | 1.000 | 0.0263 | 103 | 90-110 | 1 | 20 |
| **Batch F16A052 - SM4500NO3-F** | | | | | | | | | | | |
| **Blank (F16A052-BLK1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrite as N | 0.017 | | 0.0029 | 0.010 | mg/L | | | | | | |

Serial #: 01262016140549

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A052 - SM4500NO3-F** | | | | | | | | | | | |
| **LCS (F16A052-BS1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrite as N | 0.48 | | 0.0029 | 0.010 | mg/L | 0.5000 | | 96 | 90-110 | | |
| **LCS Dup (F16A052-BSD1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrite as N | 0.79 | J4, | 0.0029 | 0.010 | mg/L | 0.5000 | | 158 | 90-110 | 49 | 20 |
| **Matrix Spike (F16A052-MS1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrite as N | 0.52 | | 0.0029 | 0.010 | mg/L | 0.5000 | 0.014 | 101 | 90-110 | | |
| **Matrix Spike Dup (F16A052-MSD1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Nitrite as N | 0.54 | | 0.0029 | 0.010 | mg/L | 0.5000 | 0.014 | 105 | 90-110 | 3 | 20 |
| **Batch F16A104 - SM2540 D** | | | | | | | | | | | |
| **Blank (F16A104-BLK1)** | | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | U | | 3.0 | 12 | mg/L | | | | | | |
| **LCS (F16A104-BS1)** | | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | 52.0 | | | | mg/L | 54.00 | | 96 | 80-120 | | |

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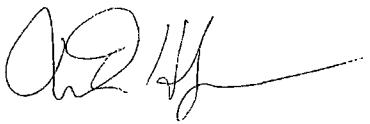

Tom Helton For Phoebe Brown, Central Lab Manager

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01/26/2016 14:05

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A104 - SM2540 D** | | | | | | | | | | | |
| **LCS Dup (F16A104-BSD1)** | | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | 52.0 | | | | mg/L | 54.00 | | 96 | 80-120 | 0 | 20 |
| **Duplicate (F16A104-DUP1)** | **Source: 16A0063-01** | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | 3.00 | I | 3.0 | 12 | mg/L | | U | | | | 5 |
| **Batch F16A111 - EPA 351.2** | | | | | | | | | | | |
| **Blank (F16A111-BLK1)** | | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | U | | 0.18 | 0.75 | mg/L | | | | | | |
| **LCS (F16A111-BS1)** | | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 1.93 | | 0.18 | 0.75 | mg/L | 1.998 | | 96 | 90-110 | | |
| **Matrix Spike (F16A111-MS1)** | **Source: 16A0064-01** | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 2.17 | | 0.18 | 0.75 | mg/L | 1.998 | 0.259 | 96 | 90-110 | | |
| **Matrix Spike (F16A111-MS2)** | **Source: 15L0391-01RE1** | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 27.9 | J2, | 1.8 | 7.5 | mg/L | 1.998 | 24.6 | 163 | 90-110 | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A111 - EPA 351.2** | | | | | | | | | | | |
| **Matrix Spike Dup (F16A111-MSD1)** | **Source: 16A0064-01** | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 2.25 | | 0.18 | 0.75 | mg/L | 1.998 | 0.259 | 99 | 90-110 | 3 | 20 |
| **Batch F16A179 - SM4500-P F** | | | | | | | | | | | |
| **Blank (F16A179-BLK1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 0.00900 | I | 0.0034 | 0.025 | mg/L | | | | | | |
| **LCS (F16A179-BS1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 1.35 | | | | mg/L | 1.330 | | 101 | 90-110 | | |
| **LCS Dup (F16A179-BSD1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 1.33 | | | | mg/L | 1.330 | | 100 | 90-110 | 1 | 20 |
| **Matrix Spike (F16A179-MS1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 0.267 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.00500 | 106 | 90-110 | | |
| **Matrix Spike Dup (F16A179-MSD1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 0.264 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.00500 | 104 | 90-110 | 1 | 20 |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A181 - EPA 300.0** | | | | | | | | | | | |
| **Blank (F16A181-BLK1)** | | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | U | | 0.0052 | 0.020 | mg/L | | | | | | |
| Fluoride | U | | 0.0016 | 0.0064 | mg/L | | | | | | |
| Sulfate | U | | 0.0091 | 0.036 | mg/L | | | | | | |
| **LCS (F16A181-BS3)** | | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 1.44 | | | | mg/L | 1.500 | | 96 | 90-110 | | |
| Fluoride | 2.33 | | | | mg/L | 2.550 | | 91 | 90-110 | | |
| Sulfate | 25.6 | | | | mg/L | 27.60 | | 93 | 90-110 | | |
| **LCS Dup (F16A181-BSD3)** | | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 1.45 | | | | mg/L | 1.500 | | 97 | 90-110 | 0.8 | 20 |
| Fluoride | 2.37 | | | | mg/L | 2.550 | | 93 | 90-110 | 2 | 20 |
| Sulfate | 25.1 | | | | mg/L | 27.60 | | 91 | 90-110 | 2 | 20 |
| **Matrix Spike (F16A181-MS1)** | **Source: 16A0089-02** | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 3.34 | | | | mg/L | 2.498 | 0.636 | 108 | 90-110 | | |
| Fluoride | 1.80 | J1, | | | mg/L | 2.502 | 0.169 | 65 | 90-110 | | |

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**Reported:**
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Attn: Chrissi-lee Williams

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A181 - EPA 300.0** | | | | | | | | | | | |
| **Matrix Spike (F16A181-MS1)** | **Source: 16A0089-02** | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Sulfate | 48.8 | J1, | | | mg/L | 12.60 | 34.4 | 115 | 90-110 | | |
| **Matrix Spike Dup (F16A181-MSD1)** | **Source: 16A0089-02** | | Prepared: 01/19/2016 Analyzed: 01/20/2016 | | | | | | | | |
| Bromide | 3.31 | | | | mg/L | 2.498 | 0.636 | 107 | 90-110 | 0.8 | 20 |
| Fluoride | 1.96 | J1, | | | mg/L | 2.502 | 0.169 | 72 | 90-110 | 8 | 20 |
| Sulfate | 49.3 | J1, | | | mg/L | 12.60 | 34.4 | 119 | 90-110 | 0.9 | 20 |
| **Batch F16A186 - EPA 120.1** | | | | | | | | | | | |
| **Blank (F16A186-BLK1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Specific conductance | U | | 1.0 | 1.0 | umhos/cm | | | | | | |
| **LCS (F16A186-BS1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Specific conductance | 250 | | | | umhos/cm | 248.0 | | 101 | 80-120 | | |
| **LCS Dup (F16A186-BSD1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Specific conductance | 251 | | | | umhos/cm | 248.0 | | 101 | 80-120 | 0.4 | 20 |
| **Duplicate (F16A186-DUP1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A186 - EPA 120.1** | | | | | | | | | | | |
| **Duplicate (F16A186-DUP1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Specific conductance | 53500 | | 1.0 | 1.0 | umhos/cm | | 53500 | | | 0 | 20 |
| **Batch F16A241 - SM5220D** | | | | | | | | | | | |
| **Blank (F16A241-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | U | | 3.1 | 12 | mg/L | | | | | | |
| **LCS (F16A241-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 55.0 | | | | mg/L | 52.80 | | 104 | 95-105 | | |
| **Matrix Spike (F16A241-MS1)** | **Source: 16A0064-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 43.7 | J1, | 3.1 | 12 | mg/L | 26.40 | 19.3 | 92 | 95-105 | | |
| **Matrix Spike Dup (F16A241-MSD1)** | **Source: 16A0064-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 41.0 | J1, | 3.1 | 12 | mg/L | 26.40 | 19.3 | 82 | 95-105 | 6 | 20 |
| **Batch F16A264 - EPA 350.1** | | | | | | | | | | | |
| **Blank (F16A264-BLK1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A264 - EPA 350.1** | | | | | | | | | | | |
| **Blank (F16A264-BLK1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 0.0209 | I | 0.0100 | 0.0400 | mg/L | | | | | | |
| **LCS (F16A264-BS1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 10.6 | | | | mg/L | 10.40 | | 102 | 90-110 | | |
| **Duplicate (F16A264-DUP1)** | **Source: 16A0032-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 0.0564 | | 0.0100 | 0.0400 | mg/L | | 0.0618 | | | 9 | 20 |
| **Matrix Spike (F16A264-MS1)** | **Source: 16A0032-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 1.02 | | 0.0100 | 0.0400 | mg/L | 0.9990 | 0.0618 | 96 | 90-110 | | |

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## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A088 - EPA 200.7** | | | | | | | | | | | |
| **Blank (F16A088-BLK1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Arsenic | U | | 3.6 | 10 | ug/L | | | | | | |
| Beryllium | U | | 0.11 | 1.0 | ug/L | | | | | | |
| Cadmium | U | | 0.10 | 1.0 | ug/L | | | | | | |
| Chromium | U | | 0.19 | 1.0 | ug/L | | | | | | |
| Copper | U | | 0.40 | 2.0 | ug/L | | | | | | |
| Iron | 4.29 | I | 2.7 | 10 | ug/L | | | | | | |
| Lead | U | | 1.6 | 5.0 | ug/L | | | | | | |
| Magnesium | U | | 0.028 | 0.10 | mg/L | | | | | | |
| Nickel | U | | 0.58 | 2.0 | ug/L | | | | | | |
| Selenium | U | | 3.7 | 10 | ug/L | | | | | | |
| Silver | U | | 0.82 | 5.0 | ug/L | | | | | | |
| Thallium | U | | 1.5 | 10 | ug/L | | | | | | |
| Zinc | U | | 0.39 | 10 | ug/L | | | | | | |
| **LCS (F16A088-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Arsenic | 103 | | 3.6 | 10 | ug/L | 100.0 | | 103 | 85-115 | | |

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**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A088 - EPA 200.7** | | | | | | | | | | | |
| **LCS (F16A088-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Beryllium | 103 | | 0.11 | 1.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Cadmium | 105 | | 0.10 | 1.0 | ug/L | 100.0 | | 105 | 85-115 | | |
| Chromium | 106 | | 0.19 | 1.0 | ug/L | 100.0 | | 106 | 85-115 | | |
| Copper | 108 | | 0.40 | 2.0 | ug/L | 100.0 | | 108 | 85-115 | | |
| Iron | 1030 | | 2.7 | 10 | ug/L | 1000 | | 103 | 85-115 | | |
| Lead | 109 | | 1.6 | 5.0 | ug/L | 100.0 | | 109 | 85-115 | | |
| Magnesium | 1.01 | | 0.028 | 0.10 | mg/L | 1.000 | | 101 | 85-115 | | |
| Nickel | 106 | | 0.58 | 2.0 | ug/L | 100.0 | | 106 | 85-115 | | |
| Selenium | 101 | | 3.7 | 10 | ug/L | 100.0 | | 101 | 85-115 | | |
| Silver | 97.9 | | 0.82 | 5.0 | ug/L | 100.0 | | 98 | 85-115 | | |
| Thallium | 104 | | 1.5 | 10 | ug/L | 100.0 | | 104 | 85-115 | | |
| Zinc | 106 | | 0.39 | 10 | ug/L | 100.0 | | 106 | 85-115 | | |
| **Matrix Spike (F16A088-MS1)** | **Source: 16A0053-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Arsenic | 108 | | 3.6 | 10 | ug/L | 100.0 | U | 108 | 70-130 | | |
| Beryllium | 105 | | 0.11 | 1.0 | ug/L | 100.0 | U | 105 | 70-130 | | |

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## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A088 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (F16A088-MS1)** | **Source: 16A0053-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Cadmium | 103 | | 0.10 | 1.0 | ug/L | 100.0 | U | 103 | 70-130 | | |
| Chromium | 107 | | 0.19 | 1.0 | ug/L | 100.0 | 1.39 | 106 | 70-130 | | |
| Copper | 110 | | 0.40 | 2.0 | ug/L | 100.0 | 1.05 | 109 | 70-130 | | |
| Iron | 1910 | | 2.7 | 10 | ug/L | 1000 | 850 | 106 | 70-130 | | |
| Lead | 105 | | 1.6 | 5.0 | ug/L | 100.0 | U | 105 | 70-130 | | |
| Magnesium | 18.1 | J2, | 0.028 | 0.10 | mg/L | 1.000 | 16.1 | 200 | 70-130 | | |
| Nickel | 104 | | 0.58 | 2.0 | ug/L | 100.0 | U | 104 | 70-130 | | |
| Selenium | 110 | | 3.7 | 10 | ug/L | 100.0 | U | 110 | 70-130 | | |
| Silver | 97.7 | | 0.82 | 5.0 | ug/L | 100.0 | U | 98 | 70-130 | | |
| Thallium | 99.8 | | 1.5 | 10 | ug/L | 100.0 | 1.86 | 98 | 70-130 | | |
| Zinc | 105 | | 0.39 | 10 | ug/L | 100.0 | 0.396 | 104 | 70-130 | | |
| **Matrix Spike Dup (F16A088-MSD1)** | **Source: 16A0053-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Arsenic | 108 | | 3.6 | 10 | ug/L | 100.0 | U | 108 | 70-130 | 0.6 | 20 |
| Beryllium | 108 | | 0.11 | 1.0 | ug/L | 100.0 | U | 108 | 70-130 | 3 | 20 |
| Cadmium | 104 | | 0.10 | 1.0 | ug/L | 100.0 | U | 104 | 70-130 | 0.4 | 20 |

Serial #: 01262016140549

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A088 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (F16A088-MSD1)** | **Source: 16A0053-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Chromium | 107 | | 0.19 | 1.0 | ug/L | 100.0 | 1.39 | 106 | 70-130 | 0.2 | 20 |
| Copper | 111 | | 0.40 | 2.0 | ug/L | 100.0 | 1.05 | 110 | 70-130 | 0.4 | 20 |
| Iron | 1940 | | 2.7 | 10 | ug/L | 1000 | 850 | 109 | 70-130 | 2 | 20 |
| Lead | 105 | | 1.6 | 5.0 | ug/L | 100.0 | U | 105 | 70-130 | 0.03 | 20 |
| Magnesium | 18.0 | J2, | 0.028 | 0.10 | mg/L | 1.000 | 16.1 | 181 | 70-130 | 1 | 20 |
| Nickel | 105 | | 0.58 | 2.0 | ug/L | 100.0 | U | 105 | 70-130 | 1 | 20 |
| Selenium | 114 | | 3.7 | 10 | ug/L | 100.0 | U | 114 | 70-130 | 4 | 20 |
| Silver | 98.7 | | 0.82 | 5.0 | ug/L | 100.0 | U | 99 | 70-130 | 1 | 20 |
| Thallium | 103 | | 1.5 | 10 | ug/L | 100.0 | 1.86 | 101 | 70-130 | 3 | 20 |
| Zinc | 105 | | 0.39 | 10 | ug/L | 100.0 | 0.396 | 105 | 70-130 | 0.5 | 20 |
| **Post Spike (F16A088-PS1)** | **Source: 16A0053-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Arsenic | 108 | | 3.6 | 10 | ug/L | 100.0 | U | 108 | 90-110 | | |
| Beryllium | 106 | | 0.11 | 1.0 | ug/L | 100.0 | U | 106 | 90-110 | | |
| Cadmium | 104 | | 0.10 | 1.0 | ug/L | 100.0 | U | 104 | 90-110 | | |
| Chromium | 108 | | 0.19 | 1.0 | ug/L | 100.0 | 1.39 | 106 | 90-110 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A088 - EPA 200.7** | | | | | | | | | | | |
| **Post Spike (F16A088-PS1)** | **Source: 16A0053-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Copper | 110 | | 0.40 | 2.0 | ug/L | 100.0 | 1.05 | 109 | 90-110 | | |
| Iron | 1890 | | 2.7 | 10 | ug/L | 1000 | 850 | 104 | 90-110 | | |
| Lead | 106 | | 1.6 | 5.0 | ug/L | 100.0 | U | 106 | 90-110 | | |
| Magnesium | 17.9 | | 0.028 | 0.10 | mg/L | 1.000 | 16.1 | 171 | 90-110 | | |
| Nickel | 104 | | 0.58 | 2.0 | ug/L | 100.0 | U | 104 | 90-110 | | |
| Selenium | 112 | | 3.7 | 10 | ug/L | 100.0 | U | 112 | 90-110 | | |
| Silver | 96.7 | | 0.82 | 5.0 | ug/L | 100.0 | U | 97 | 90-110 | | |
| Thallium | 104 | | 1.5 | 10 | ug/L | 100.0 | 1.86 | 102 | 90-110 | | |
| Zinc | 106 | | 0.39 | 10 | ug/L | 100.0 | 0.396 | 105 | 90-110 | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Metals - Quality Control

**Analyzed at: Jupiter Environmental TNI Cert #: E86546**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601638 - EPA 1631E** | | | | | | | | | | | |
| **Blank (1601102-BLK1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Mercury | U | | 0.000250 | 0.00100 | ug/L | | | | - | | |
| **LCS (1601102-BS1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Mercury | 0.0122 | | 0.000250 | 0.00100 | ug/L | 0.01 | | 122 | 77-123 | | |
| **Matrix Spike (1601102-MS1)** | | **Source: 1644904001** | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Mercury | 0.00721 | | 0.000250 | 0.00100 | ug/L | 0.005 | 0.00111 | 122 | 71-125 | | |
| **Matrix Spike Dup (1601102-MSD1)** | | **Source: 1644904001** | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Mercury | 0.00697 | | 0.000250 | 0.00100 | ug/L | 0.005 | 0.00111 | 117 | 71-125 | 3.4 | 24 |

Serial #: 01262016140549

FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Blank (1601149-BLK1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | | 1.27 | 3.81 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | ND | | 1.02 | 3.06 | ug/L | | | | - | | |
| 1,2-Diphenylhydrazine as Azobenzene | ND | | 0.660 | 1.98 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | ND | | 1.24 | 3.72 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | ND | | 1.18 | 3.54 | ug/L | | | | - | | |
| 2,3-Dichloroaniline | ND | | 0.510 | 1.53 | ug/L | | | | - | | |
| 2,4,5-Trichlorophenol | ND | | 0.680 | 2.04 | ug/L | | | | - | | |
| 2,4,6-Trichlorophenol | ND | | 0.560 | 1.68 | ug/L | | | | - | | |
| 2,4-Dichlorophenol | ND | | 0.630 | 1.89 | ug/L | | | | - | | |
| 2,4-Dimethylphenol | ND | | 0.490 | 1.47 | ug/L | | | | - | | |
| 2,4-Dinitrophenol | ND | | 0.160 | 0.480 | ug/L | | | | - | | |
| 2,4-Dinitrotoluene | ND | | 0.300 | 0.900 | ug/L | | | | - | | |
| 2,6-Dichlorophenol | ND | | 0.237 | 0.712 | ug/L | | | | - | | |
| 2,6-Dinitrotoluene | ND | | 0.520 | 1.56 | ug/L | | | | - | | |
| 2-Chloronaphthalene | ND | | 0.550 | 1.65 | ug/L | | | | - | | |
| 2-Chlorophenol | ND | | 0.890 | 2.67 | ug/L | | | | - | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Blank (1601149-BLK1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 2-Methylnaphthalene | ND | | 0.0240 | 0.0720 | ug/L | | | | - | | |
| 2-Methylphenol | ND | | 0.820 | 2.46 | ug/L | | | | - | | |
| 2-Nitrophenol | ND | | 0.880 | 2.64 | ug/L | | | | - | | |
| 3,3'-Dichlorobenzidine | ND | | 0.310 | 0.930 | ug/L | | | | - | | |
| 4,6-Dinitro-2-methylphenol | ND | | 0.270 | 0.810 | ug/L | | | | - | | |
| 4-Bromophenyl phenyl ether | ND | | 0.530 | 1.59 | ug/L | | | | - | | |
| 4-Chloro-3-methylphenol | ND | | 0.930 | 2.79 | ug/L | | | | - | | |
| 4-Chlorophenyl phenyl ether | ND | | 0.580 | 1.74 | ug/L | | | | - | | |
| 4-Nitrophenol | ND | | 0.700 | 2.10 | ug/L | | | | - | | |
| Acenaphthene | ND | | 0.490 | 1.47 | ug/L | | | | - | | |
| Acenaphthylene | ND | | 0.640 | 1.92 | ug/L | | | | - | | |
| Aniline | ND | | 0.890 | 2.67 | ug/L | | | | - | | |
| Anthracene | ND | | 0.500 | 1.50 | ug/L | | | | - | | |
| a-Terpineol | ND | | 0.336 | 1.01 | ug/L | | | | - | | |
| Benzidine | ND | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (a) anthracene | ND | | 0.180 | 0.540 | ug/L | | | | - | | |

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

Attn: Chrissi-lee Williams

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Blank (1601149-BLK1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Benzo (a) pyrene | ND | | 0.280 | 0.840 | ug/L | | | | - | | |
| Benzo (b) fluoranthene | ND | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (g,h,i) perylene | ND | | 0.210 | 0.630 | ug/L | | | | - | | |
| Benzo (k) fluoranthene | ND | | 0.480 | 1.44 | ug/L | | | | - | | |
| Bis(2-chloroethoxy)methane | ND | | 0.580 | 1.74 | ug/L | | | | - | | |
| Bis(2-chloroethyl)ether | ND | | 0.820 | 2.46 | ug/L | | | | - | | |
| Bis(2-chloroisopropyl)ether | ND | | 0.970 | 2.91 | ug/L | | | | - | | |
| Bis(2-ethylhexyl)phthalate | ND | | 1.32 | 3.96 | ug/L | | | | - | | |
| Butyl benzyl phthalate | ND | | 0.190 | 0.570 | ug/L | | | | - | | |
| Chrysene | ND | | 0.300 | 0.900 | ug/L | | | | - | | |
| Dibenz (a,h) anthracene | ND | | 0.160 | 0.580 | ug/L | | | | - | | |
| Dibenzofuran | ND | | 0.480 | 1.44 | ug/L | | | | - | | |
| Diethyl phthalate | ND | | 0.200 | 0.600 | ug/L | | | | - | | |
| Dimethyl phthalate | ND | | 0.290 | 0.870 | ug/L | | | | - | | |
| Di-n-butyl phthalate | ND | | 0.240 | 0.720 | ug/L | | | | - | | |
| Di-n-octyl phthalate | ND | | 0.170 | 0.510 | ug/L | | | | - | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Blank (1601149-BLK1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Fluoranthene | ND | | 0.280 | 0.840 | ug/L | | | | - | | |
| Fluorene | ND | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobenzene | ND | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobutadiene | ND | | 0.530 | 1.59 | ug/L | | | | - | | |
| Hexachlorocyclopentadiene | ND | | 0.690 | 2.07 | ug/L | | | | - | | |
| Hexachloroethane | ND | | 0.810 | 2.43 | ug/L | | | | - | | |
| Indeno (1,2,3-cd) pyrene | ND | | 0.150 | 0.450 | ug/L | | | | - | | |
| Isophorone | ND | | 0.680 | 2.04 | ug/L | | | | - | | |
| m,p Cresol | ND | | 0.329 | 0.987 | ug/L | | | | - | | |
| Naphthalene | ND | | 0.700 | 2.10 | ug/L | | | | - | | |
| n-Decane | ND | | 0.244 | 0.733 | ug/L | | | | - | | |
| Nitrobenzene | ND | | 0.770 | 2.31 | ug/L | | | | - | | |
| N-Nitrosodimethylamine | ND | | 1.11 | 3.33 | ug/L | | | | - | | |
| N-Nitrosodi-n-propylamine | ND | | 1.10 | 3.30 | ug/L | | | | - | | |
| N-Nitrosodiphenylamine | ND | | 0.380 | 1.14 | ug/L | | | | - | | |
| n-Octadecane | ND | | 1.59 | 4.78 | ug/L | | | | - | | |

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**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Blank (1601149-BLK1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Pentachlorophenol | ND | | 0.320 | 0.960 | ug/L | | | | - | | |
| Phenanthrene | ND | | 0.450 | 1.35 | ug/L | | | | - | | |
| Phenol | ND | | 0.580 | 1.74 | ug/L | | | | - | | |
| Pyrene | ND | | 0.220 | 0.660 | ug/L | | | | - | | |
| Pyridine | ND | | 0.530 | 1.59 | ug/L | | | | - | | |
| *Surrogate: 2,4,6-Tribromophenol* | *22.2* | *J-1,* | | | ug/L | *50.00* | | *44.4* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *17.6* | | | | ug/L | *25.00* | | *70.3* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *20.2* | | | | ug/L | *50.00* | | *40.5* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *15.1* | | | | ug/L | *25.00* | | *60.4* | *50-150* | | |
| *Surrogate: Phenol-d6* | *13.7* | *J-1,* | | | ug/L | *50.00* | | *27.3* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *20.0* | | | | ug/L | *25.00* | | *79.8* | *50-150* | | |
| **LCS (1601149-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 4.84 | | 1.27 | 3.81 | ug/L | 10.00 | | 48.4 | 44-142 | | |
| 1,2-Dichlorobenzene | 3.96 | | 1.02 | 3.06 | ug/L | 10.00 | | 39.6 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 6.84 | | 0.660 | 1.98 | ug/L | 10.00 | | 68.4 | 40-140 | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

Attn: Chrissi-lee Williams

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **LCS (1601149-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 1,3-Dichlorobenzene | 3.98 | | 1.24 | 3.72 | ug/L | 10.00 | | 39.8 | 0-172 | | |
| 1,4-Dichlorobenzene | 4.01 | | 1.18 | 3.54 | ug/L | 10.00 | | 40.1 | 20-124 | | |
| 2,4,5-Trichlorophenol | 6.26 | | 0.680 | 2.04 | ug/L | 10.00 | | 62.6 | 42-131 | | |
| 2,4,6-Trichlorophenol | 7.54 | | 0.560 | 1.68 | ug/L | 10.00 | | 75.4 | 37-144 | | |
| 2,4-Dichlorophenol | 7.37 | | 0.630 | 1.89 | ug/L | 10.00 | | 73.7 | 39-135 | | |
| 2,4-Dimethylphenol | 6.28 | | 0.490 | 1.47 | ug/L | 10.00 | | 62.8 | 32-119 | | |
| 2,4-Dinitrophenol | ND | | 0.160 | 0.480 | ug/L | 10.00 | | | 0-191 | | |
| 2,4-Dinitrotoluene | 5.78 | | 0.300 | 0.900 | ug/L | 10.00 | | 57.8 | 39-139 | | |
| 2,6-Dichlorophenol | 7.18 | | 0.237 | 0.712 | ug/L | 10.00 | | 71.8 | 37-136 | | |
| 2,6-Dinitrotoluene | 7.23 | | 0.520 | 1.56 | ug/L | 10.00 | | 72.3 | 50-158 | | |
| 2-Chloronaphthalene | 5.92 | J-2, | 0.550 | 1.65 | ug/L | 10.00 | | 59.2 | 60-118 | | |
| 2-Chlorophenol | 6.11 | | 0.890 | 2.67 | ug/L | 10.00 | | 61.1 | 23-134 | | |
| 2-Methylnaphthalene | 5.66 | | 0.0240 | 0.0720 | ug/L | 10.00 | | 56.6 | 34-129 | | |
| 2-Methylphenol | 5.88 | | 0.820 | 2.46 | ug/L | 10.00 | | 58.8 | 52-109 | | |
| 2-Nitrophenol | 6.26 | | 0.880 | 2.64 | ug/L | 10.00 | | 62.6 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 5.24 | | 0.310 | 0.930 | ug/L | 10.00 | | 52.4 | 0-262 | | |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

Attn: Chrissi-lee Williams

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **LCS (1601149-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | 0.304 | I | 0.270 | 0.810 | ug/L | 10.00 | | 3.04 | 0-181 | | |
| 4-Bromophenyl phenyl ether | 6.73 | | 0.530 | 1.59 | ug/L | 10.00 | | 67.3 | 53-127 | | |
| 4-Chloro-3-methylphenol | 7.13 | | 0.930 | 2.79 | ug/L | 10.00 | | 71.3 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 6.28 | | 0.580 | 1.74 | ug/L | 10.00 | | 62.8 | 25-158 | | |
| 4-Nitrophenol | 2.74 | | 0.700 | 2.10 | ug/L | 10.00 | | 27.4 | 0-132 | | |
| Acenaphthene | 6.14 | | 0.490 | 1.47 | ug/L | 10.00 | | 61.4 | 47-145 | | |
| Acenaphthylene | 6.55 | | 0.640 | 1.92 | ug/L | 10.00 | | 65.5 | 33-145 | | |
| Aniline | 5.76 | | 0.890 | 2.67 | ug/L | 10.00 | | 57.6 | 40-138 | | |
| Anthracene | 7.28 | | 0.500 | 1.50 | ug/L | 10.00 | | 72.8 | 27-133 | | |
| Benzidine | 5.16 | | 0.260 | 0.780 | ug/L | 10.00 | | 51.6 | 40-140 | | |
| Benzo (a) anthracene | 6.28 | | 0.180 | 0.540 | ug/L | 10.00 | | 62.8 | 33-143 | | |
| Benzo (a) pyrene | 6.57 | | 0.280 | 0.840 | ug/L | 10.00 | | 65.7 | 17-163 | | |
| Benzo (b) fluoranthene | 8.58 | | 0.260 | 0.780 | ug/L | 10.00 | | 85.8 | 24-159 | | |
| Benzo (g,h,i) perylene | 7.89 | | 0.210 | 0.630 | ug/L | 10.00 | | 78.9 | 0-219 | | |
| Benzo (k) fluoranthene | 7.78 | | 0.480 | 1.44 | ug/L | 10.00 | | 77.8 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 6.67 | | 0.580 | 1.74 | ug/L | 10.00 | | 66.7 | 33-184 | | |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

Attn: Chrissi-lee Williams

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **LCS (1601149-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Bis(2-chloroethyl)ether | 5.94 | | 0.820 | 2.46 | ug/L | 10.00 | | 59.4 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 5.47 | | 0.970 | 2.91 | ug/L | 10.00 | | 54.7 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 7.21 | | 1.32 | 3.96 | ug/L | 10.00 | | 72.1 | 8-158 | | |
| Butyl benzyl phthalate | 5.10 | | 0.190 | 0.570 | ug/L | 10.00 | | 51.0 | 0-152 | | |
| Chrysene | 7.18 | | 0.300 | 0.900 | ug/L | 10.00 | | 71.8 | 17-168 | | |
| Dibenz (a,h) anthracene | 6.79 | | 0.160 | 0.580 | ug/L | 10.00 | | 67.9 | 0-227 | | |
| Dibenzofuran | 6.64 | | 0.480 | 1.44 | ug/L | 10.00 | | 66.4 | 46-127 | | |
| Diethyl phthalate | 6.03 | | 0.200 | 0.600 | ug/L | 10.00 | | 60.3 | 0-114 | | |
| Dimethyl phthalate | 3.51 | | 0.290 | 0.870 | ug/L | 10.00 | | 35.1 | 0-112 | | |
| Di-n-butyl phthalate | 8.16 | | 0.240 | 0.720 | ug/L | 10.00 | | 81.6 | 1-118 | | |
| Di-n-octyl phthalate | 7.29 | | 0.170 | 0.510 | ug/L | 10.00 | | 72.9 | 4-146 | | |
| Fluoranthene | 7.92 | | 0.280 | 0.840 | ug/L | 10.00 | | 79.2 | 26-137 | | |
| Fluorene | 6.79 | | 0.520 | 1.56 | ug/L | 10.00 | | 67.9 | 59-121 | | |
| Hexachlorobenzene | 6.68 | | 0.520 | 1.56 | ug/L | 10.00 | | 66.8 | 0-152 | | |
| Hexachlorobutadiene | 4.33 | | 0.530 | 1.59 | ug/L | 10.00 | | 43.3 | 24-116 | | |
| Hexachlorocyclopentadiene | 1.13 | J-2, I | 0.690 | 2.07 | ug/L | 10.00 | | 11.3 | 40-140 | | |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **LCS (1601149-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Hexachloroethane | 3.76 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | | 37.6 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 6.20 | | 0.150 | 0.450 | ug/L | 10.00 | | 62.0 | 0-171 | | |
| Isophorone | 6.66 | | 0.680 | 2.04 | ug/L | 10.00 | | 66.6 | 21-196 | | |
| m,p Cresol | 5.68 | | 0.329 | 0.987 | ug/L | 10.00 | | 56.8 | 48-110 | | |
| Naphthalene | 5.54 | | 0.700 | 2.10 | ug/L | 10.00 | | 55.4 | 21-133 | | |
| Nitrobenzene | 5.74 | | 0.770 | 2.31 | ug/L | 10.00 | | 57.4 | 35-180 | | |
| N-Nitrosodimethylamine | 4.26 | | 1.11 | 3.33 | ug/L | 10.00 | | 42.6 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 6.42 | | 1.10 | 3.30 | ug/L | 10.00 | | 64.2 | 0-230 | | |
| N-Nitrosodiphenylamine | 7.63 | | 0.380 | 1.14 | ug/L | 10.00 | | 76.3 | 40-140 | | |
| Pentachlorophenol | 3.14 | | 0.320 | 0.960 | ug/L | 10.00 | | 31.4 | 14-176 | | |
| Phenanthrene | 7.07 | | 0.450 | 1.35 | ug/L | 10.00 | | 70.7 | 54-120 | | |
| Phenol | 3.26 | | 0.580 | 1.74 | ug/L | 10.00 | | 32.6 | 5-112 | | |
| Pyrene | 7.41 | | 0.220 | 0.660 | ug/L | 10.00 | | 74.1 | 52-115 | | |
| Pyridine | 3.49 | | 0.530 | 1.59 | ug/L | 10.00 | | 34.9 | 10-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *30.3* | | | | ug/L | *50.00* | | *60.6* | *50-150* | | |

Serial #: 01262016140549

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

Attn: Chrissi-lee Williams

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **LCS (1601149-BS1)** | | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| *Surrogate: 2-Fluorobiphenyl* | *18.9* | | | | ug/L | *25.00* | | *75.7* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *21.2* | | | | ug/L | *50.00* | | *42.4* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *15.7* | | | | ug/L | *25.00* | | *62.8* | *50-150* | | |
| *Surrogate: Phenol-d6* | *15.1* | | | | ug/L | *50.00* | | *30.3* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *19.7* | | | | ug/L | *25.00* | | *78.9* | *50-150* | | |
| **Matrix Spike (1601149-MS1)** | | **Source: 16A0144-01** | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 5.38 | | 1.27 | 3.81 | ug/L | 10.00 | U | 53.8 | 44-142 | | |
| 1,2-Dichlorobenzene | 4.36 | | 1.02 | 3.06 | ug/L | 10.00 | U | 43.6 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 7.00 | | 0.660 | 1.98 | ug/L | 10.00 | U | 70.0 | 40-140 | | |
| 1,3-Dichlorobenzene | 4.40 | | 1.24 | 3.72 | ug/L | 10.00 | U | 44.0 | 0-172 | | |
| 1,4-Dichlorobenzene | 4.38 | | 1.18 | 3.54 | ug/L | 10.00 | U | 43.8 | 20-124 | | |
| 2,4,5-Trichlorophenol | 6.41 | | 0.680 | 2.04 | ug/L | 10.00 | U | 64.1 | 46-131 | | |
| 2,4,6-Trichlorophenol | 7.87 | | 0.560 | 1.68 | ug/L | 10.00 | U | 78.7 | 37-144 | | |
| 2,4-Dichlorophenol | 7.72 | | 0.630 | 1.89 | ug/L | 10.00 | U | 77.2 | 39-135 | | |
| 2,4-Dimethylphenol | 7.10 | | 0.490 | 1.47 | ug/L | 10.00 | U | 71.0 | 32-119 | | |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

Attn: Chrissi-lee Williams

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601149-MS1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 2,4-Dinitrotoluene | 6.05 | | 0.300 | 0.900 | ug/L | 10.00 | U | 60.5 | 39-139 | | |
| 2,6-Dichlorophenol | 7.64 | | 0.237 | 0.712 | ug/L | 10.00 | U | 76.4 | 35-145 | | |
| 2,6-Dinitrotoluene | 7.49 | | 0.520 | 1.56 | ug/L | 10.00 | U | 74.9 | 50-158 | | |
| 2-Chloronaphthalene | 6.45 | J-2, | 0.550 | 1.65 | ug/L | 10.00 | U | 64.5 | 60-118 | | |
| 2-Chlorophenol | 6.53 | | 0.890 | 2.67 | ug/L | 10.00 | U | 65.3 | 23-134 | | |
| 2-Methylnaphthalene | 6.07 | | 0.0240 | 0.0720 | ug/L | 10.00 | U | 60.7 | 36-128 | | |
| 2-Methylphenol | 6.13 | | 0.820 | 2.46 | ug/L | 10.00 | U | 61.3 | 52-113 | | |
| 2-Nitrophenol | 6.68 | | 0.880 | 2.64 | ug/L | 10.00 | U | 66.8 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 5.31 | | 0.310 | 0.930 | ug/L | 10.00 | U | 53.1 | 0-262 | | |
| 4-Bromophenyl phenyl ether | 7.11 | | 0.530 | 1.59 | ug/L | 10.00 | U | 71.1 | 53-127 | | |
| 4-Chloro-3-methylphenol | 7.46 | | 0.930 | 2.79 | ug/L | 10.00 | U | 74.6 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 6.80 | | 0.580 | 1.74 | ug/L | 10.00 | U | 68.0 | 25-158 | | |
| 4-Nitrophenol | 4.10 | | 0.700 | 2.10 | ug/L | 10.00 | U | 41.0 | 0-132 | | |
| Acenaphthene | 6.51 | | 0.490 | 1.47 | ug/L | 10.00 | U | 65.1 | 47-145 | | |
| Acenaphthylene | 6.94 | | 0.640 | 1.92 | ug/L | 10.00 | U | 69.4 | 33-145 | | |
| Aniline | 6.34 | | 0.890 | 2.67 | ug/L | 10.00 | U | 63.4 | 40-147 | | |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

Attn: Chrissi-lee Williams

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601149-MS1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Anthracene | 7.48 | | 0.500 | 1.50 | ug/L | 10.00 | U | 74.8 | 27-133 | | |
| Benzidine | 5.13 | | 0.260 | 0.780 | ug/L | 10.00 | U | 51.3 | 40-140 | | |
| Benzo (a) anthracene | 6.38 | | 0.180 | 0.540 | ug/L | 10.00 | U | 63.8 | 33-143 | | |
| Benzo (a) pyrene | 6.74 | | 0.280 | 0.840 | ug/L | 10.00 | U | 67.4 | 17-163 | | |
| Benzo (b) fluoranthene | 8.96 | | 0.260 | 0.780 | ug/L | 10.00 | U | 89.6 | 24-159 | | |
| Benzo (g,h,i) perylene | 7.89 | | 0.210 | 0.630 | ug/L | 10.00 | U | 78.9 | 0-219 | | |
| Benzo (k) fluoranthene | 8.15 | | 0.480 | 1.44 | ug/L | 10.00 | U | 81.5 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 6.95 | | 0.580 | 1.74 | ug/L | 10.00 | U | 69.5 | 33-184 | | |
| Bis(2-chloroethyl)ether | 6.21 | | 0.820 | 2.46 | ug/L | 10.00 | U | 62.1 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 5.69 | | 0.970 | 2.91 | ug/L | 10.00 | U | 56.9 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 7.21 | | 1.32 | 3.96 | ug/L | 10.00 | U | 72.1 | 8-158 | | |
| Butyl benzyl phthalate | 6.32 | | 0.190 | 0.570 | ug/L | 10.00 | U | 63.2 | 0-152 | | |
| Chrysene | 7.48 | | 0.300 | 0.900 | ug/L | 10.00 | U | 74.8 | 17-168 | | |
| Dibenz (a,h) anthracene | 6.84 | | 0.160 | 0.580 | ug/L | 10.00 | U | 68.4 | 0-227 | | |
| Dibenzofuran | 6.96 | | 0.480 | 1.44 | ug/L | 10.00 | U | 69.6 | 43-136 | | |
| Diethyl phthalate | 6.91 | | 0.200 | 0.600 | ug/L | 10.00 | U | 69.1 | 0-114 | | |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601149-MS1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Dimethyl phthalate | 5.26 | | 0.290 | 0.870 | ug/L | 10.00 | U | 52.6 | 0-112 | | |
| Di-n-butyl phthalate | 8.48 | | 0.240 | 0.720 | ug/L | 10.00 | U | 84.8 | 1-118 | | |
| Di-n-octyl phthalate | 7.33 | | 0.170 | 0.510 | ug/L | 10.00 | U | 73.3 | 4-146 | | |
| Fluoranthene | 8.17 | | 0.280 | 0.840 | ug/L | 10.00 | U | 81.7 | 26-137 | | |
| Fluorene | 7.14 | | 0.520 | 1.56 | ug/L | 10.00 | U | 71.4 | 59-121 | | |
| Hexachlorobenzene | 6.97 | | 0.520 | 1.56 | ug/L | 10.00 | U | 69.7 | 0-152 | | |
| Hexachlorobutadiene | 5.00 | | 0.530 | 1.59 | ug/L | 10.00 | U | 50.0 | 24-116 | | |
| Hexachlorocyclopentadiene | 1.16 | J-2, J-3, I | 0.690 | 2.07 | ug/L | 10.00 | U | 11.6 | 40-140 | | |
| Hexachloroethane | 4.22 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | U | 42.2 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 6.17 | | 0.150 | 0.450 | ug/L | 10.00 | U | 61.7 | 0-171 | | |
| Isophorone | 6.91 | | 0.680 | 2.04 | ug/L | 10.00 | U | 69.1 | 21-196 | | |
| m,p Cresol | 5.86 | | 0.329 | 0.987 | ug/L | 10.00 | U | 58.6 | 53-110 | | |
| Naphthalene | 5.96 | | 0.700 | 2.10 | ug/L | 10.00 | U | 59.6 | 21-133 | | |
| Nitrobenzene | 6.03 | | 0.770 | 2.31 | ug/L | 10.00 | U | 60.3 | 35-180 | | |
| N-Nitrosodimethylamine | 4.32 | | 1.11 | 3.33 | ug/L | 10.00 | U | 43.2 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 6.49 | | 1.10 | 3.30 | ug/L | 10.00 | U | 64.9 | 0-230 | | |

Serial #: 01262016140549

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 16A0032

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601149-MS1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| N-Nitrosodiphenylamine | 7.67 | | 0.380 | 1.14 | ug/L | 10.00 | U | 76.7 | 40-140 | | |
| Pentachlorophenol | 3.09 | | 0.320 | 0.960 | ug/L | 10.00 | U | 30.9 | 14-176 | | |
| Phenanthrene | 7.10 | | 0.450 | 1.35 | ug/L | 10.00 | U | 71.0 | 54-120 | | |
| Phenol | 3.40 | | 0.580 | 1.74 | ug/L | 10.00 | U | 34.0 | 5-112 | | |
| Pyrene | 7.53 | | 0.220 | 0.660 | ug/L | 10.00 | U | 75.3 | 52-115 | | |
| Pyridine | 3.35 | J-3, | 0.530 | 1.59 | ug/L | 10.00 | U | 33.5 | 40-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *30.0* | | | | ug/L | *50.00* | | *59.9* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *19.3* | | | | ug/L | *25.00* | | *77.1* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *22.0* | | | | ug/L | *50.00* | | *44.1* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *16.2* | | | | ug/L | *25.00* | | *64.9* | *50-150* | | |
| *Surrogate: Phenol-d6* | *15.8* | | | | ug/L | *50.00* | | *31.5* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *20.3* | | | | ug/L | *25.00* | | *81.2* | *50-150* | | |
| **Matrix Spike Dup (1601149-MSD1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 4.80 | | 1.27 | 3.81 | ug/L | 10.00 | U | 48.0 | 44-142 | 11.4 | 20 |
| 1,2-Dichlorobenzene | 3.97 | | 1.02 | 3.06 | ug/L | 10.00 | U | 39.7 | 32-129 | 9.39 | 20 |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601149-MSD1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 1,2-Diphenylhydrazine as Azobenzene | 6.24 | | 0.660 | 1.98 | ug/L | 10.00 | U | 62.4 | 40-140 | 11.6 | 20 |
| 1,3-Dichlorobenzene | 3.99 | | 1.24 | 3.72 | ug/L | 10.00 | U | 39.9 | 0-172 | 9.64 | 20 |
| 1,4-Dichlorobenzene | 3.96 | | 1.18 | 3.54 | ug/L | 10.00 | U | 39.6 | 20-124 | 9.93 | 20 |
| 2,4,5-Trichlorophenol | 5.81 | | 0.680 | 2.04 | ug/L | 10.00 | U | 58.1 | 46-131 | 9.88 | 30 |
| 2,4,6-Trichlorophenol | 7.08 | | 0.560 | 1.68 | ug/L | 10.00 | U | 70.8 | 37-144 | 10.6 | 20 |
| 2,4-Dichlorophenol | 6.84 | | 0.630 | 1.89 | ug/L | 10.00 | U | 68.4 | 39-135 | 12.0 | 20 |
| 2,4-Dimethylphenol | 6.35 | | 0.490 | 1.47 | ug/L | 10.00 | U | 63.5 | 32-119 | 11.2 | 20 |
| 2,4-Dinitrotoluene | 5.42 | | 0.300 | 0.900 | ug/L | 10.00 | U | 54.2 | 39-139 | 10.9 | 20 |
| 2,6-Dichlorophenol | 6.85 | | 0.237 | 0.712 | ug/L | 10.00 | U | 68.5 | 35-145 | 10.9 | 30 |
| 2,6-Dinitrotoluene | 6.76 | | 0.520 | 1.56 | ug/L | 10.00 | U | 67.6 | 50-158 | 10.1 | 20 |
| 2-Chloronaphthalene | 5.76 | J-2, | 0.550 | 1.65 | ug/L | 10.00 | U | 57.6 | 60-118 | 11.3 | 20 |
| 2-Chlorophenol | 5.92 | | 0.890 | 2.67 | ug/L | 10.00 | U | 59.2 | 23-134 | 9.80 | 20 |
| 2-Methylnaphthalene | 5.40 | | 0.0240 | 0.0720 | ug/L | 10.00 | U | 54.0 | 36-128 | 11.7 | 30 |
| 2-Methylphenol | 5.57 | | 0.820 | 2.46 | ug/L | 10.00 | U | 55.7 | 52-113 | 9.55 | 30 |
| 2-Nitrophenol | 5.92 | | 0.880 | 2.64 | ug/L | 10.00 | U | 59.2 | 29-182 | 12.0 | 20 |
| 3,3'-Dichlorobenzidine | 4.97 | | 0.310 | 0.930 | ug/L | 10.00 | U | 49.7 | 0-262 | 6.61 | 20 |

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Tom Helton For Phoebe Brown, Central Lab Manager

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

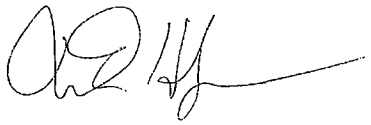
## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601149-MSD1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| 4-Bromophenyl phenyl ether | 6.12 | | 0.530 | 1.59 | ug/L | 10.00 | U | 61.2 | 53-127 | 15.0 | 20 |
| 4-Chloro-3-methylphenol | 6.56 | | 0.930 | 2.79 | ug/L | 10.00 | U | 65.6 | 22-147 | 12.9 | 20 |
| 4-Chlorophenyl phenyl ether | 6.09 | | 0.580 | 1.74 | ug/L | 10.00 | U | 60.9 | 25-158 | 11.0 | 20 |
| 4-Nitrophenol | 3.66 | | 0.700 | 2.10 | ug/L | 10.00 | U | 36.6 | 0-132 | 11.4 | 20 |
| Acenaphthene | 5.83 | | 0.490 | 1.47 | ug/L | 10.00 | U | 58.3 | 47-145 | 11.1 | 20 |
| Acenaphthylene | 6.20 | | 0.640 | 1.92 | ug/L | 10.00 | U | 62.0 | 33-145 | 11.3 | 20 |
| Aniline | 5.64 | | 0.890 | 2.67 | ug/L | 10.00 | U | 56.4 | 40-147 | 11.6 | 30 |
| Anthracene | 6.54 | | 0.500 | 1.50 | ug/L | 10.00 | U | 65.4 | 27-133 | 13.4 | 20 |
| Benzidine | 5.16 | | 0.260 | 0.780 | ug/L | 10.00 | U | 51.6 | 40-140 | 0.563 | 20 |
| Benzo (a) anthracene | 5.91 | | 0.180 | 0.540 | ug/L | 10.00 | U | 59.1 | 33-143 | 7.70 | 20 |
| Benzo (a) pyrene | 6.32 | | 0.280 | 0.840 | ug/L | 10.00 | U | 63.2 | 17-163 | 6.46 | 20 |
| Benzo (b) fluoranthene | 8.25 | | 0.260 | 0.780 | ug/L | 10.00 | U | 82.5 | 24-159 | 8.25 | 20 |
| Benzo (g,h,i) perylene | 7.35 | | 0.210 | 0.630 | ug/L | 10.00 | U | 73.5 | 0-219 | 7.09 | 20 |
| Benzo (k) fluoranthene | 7.64 | | 0.480 | 1.44 | ug/L | 10.00 | U | 76.4 | 11-162 | 6.48 | 20 |
| Bis(2-chloroethoxy)methane | 6.25 | | 0.580 | 1.74 | ug/L | 10.00 | U | 62.5 | 33-184 | 10.5 | 20 |
| Bis(2-chloroethyl)ether | 5.67 | | 0.820 | 2.46 | ug/L | 10.00 | U | 56.7 | 12-158 | 9.12 | 20 |

Serial #: 01262016140549

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601149-MSD1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Bis(2-chloroisopropyl)ether | 5.15 | | 0.970 | 2.91 | ug/L | 10.00 | U | 51.5 | 36-166 | 9.93 | 20 |
| Bis(2-ethylhexyl)phthalate | 6.65 | | 1.32 | 3.96 | ug/L | 10.00 | U | 66.5 | 8-158 | 8.03 | 20 |
| Butyl benzyl phthalate | 5.85 | | 0.190 | 0.570 | ug/L | 10.00 | U | 58.5 | 0-152 | 7.66 | 20 |
| Chrysene | 6.98 | | 0.300 | 0.900 | ug/L | 10.00 | U | 69.8 | 17-168 | 6.84 | 20 |
| Dibenz (a,h) anthracene | 6.41 | | 0.160 | 0.580 | ug/L | 10.00 | U | 64.1 | 0-227 | 6.50 | 20 |
| Dibenzofuran | 6.21 | | 0.480 | 1.44 | ug/L | 10.00 | U | 62.1 | 43-136 | 11.3 | 30 |
| Diethyl phthalate | 6.19 | | 0.200 | 0.600 | ug/L | 10.00 | U | 61.9 | 0-114 | 11.0 | 20 |
| Dimethyl phthalate | 4.69 | | 0.290 | 0.870 | ug/L | 10.00 | U | 46.9 | 0-112 | 11.5 | 20 |
| Di-n-butyl phthalate | 7.52 | | 0.240 | 0.720 | ug/L | 10.00 | U | 75.2 | 1-118 | 12.1 | 20 |
| Di-n-octyl phthalate | 6.87 | | 0.170 | 0.510 | ug/L | 10.00 | U | 68.7 | 4-146 | 6.47 | 20 |
| Fluoranthene | 7.16 | | 0.280 | 0.840 | ug/L | 10.00 | U | 71.6 | 26-137 | 13.2 | 20 |
| Fluorene | 6.36 | | 0.520 | 1.56 | ug/L | 10.00 | U | 63.6 | 59-121 | 11.6 | 20 |
| Hexachlorobenzene | 6.26 | | 0.520 | 1.56 | ug/L | 10.00 | U | 62.6 | 0-152 | 10.7 | 20 |
| Hexachlorobutadiene | 4.50 | | 0.530 | 1.59 | ug/L | 10.00 | U | 45.0 | 24-116 | 10.5 | 20 |
| Hexachlorocyclopentadiene | 1.14 | J-2, J-3, I | 0.690 | 2.07 | ug/L | 10.00 | U | 11.4 | 40-140 | 1.75 | 20 |
| Hexachloroethane | 3.79 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | U | 37.9 | 40-113 | 10.7 | 20 |

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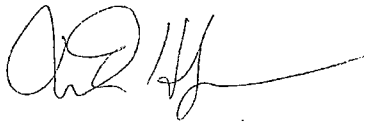

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601149-MSD1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| Indeno (1,2,3-cd) pyrene | 5.82 | | 0.150 | 0.450 | ug/L | 10.00 | U | 58.2 | 0-171 | 5.91 | 20 |
| Isophorone | 6.18 | | 0.680 | 2.04 | ug/L | 10.00 | U | 61.8 | 21-196 | 11.2 | 20 |
| m,p Cresol | 5.29 | | 0.329 | 0.987 | ug/L | 10.00 | U | 52.9 | 53-110 | 10.4 | 30 |
| Naphthalene | 5.37 | | 0.700 | 2.10 | ug/L | 10.00 | U | 53.7 | 21-133 | 10.4 | 20 |
| Nitrobenzene | 5.31 | | 0.770 | 2.31 | ug/L | 10.00 | U | 53.1 | 35-180 | 12.7 | 20 |
| N-Nitrosodimethylamine | 3.87 | | 1.11 | 3.33 | ug/L | 10.00 | U | 38.7 | 40-140 | 10.9 | 20 |
| N-Nitrosodi-n-propylamine | 5.99 | | 1.10 | 3.30 | ug/L | 10.00 | U | 59.9 | 0-230 | 7.98 | 20 |
| N-Nitrosodiphenylamine | 6.78 | | 0.380 | 1.14 | ug/L | 10.00 | U | 67.8 | 40-140 | 12.2 | 20 |
| Pentachlorophenol | 2.61 | | 0.320 | 0.960 | ug/L | 10.00 | U | 26.1 | 14-176 | 16.8 | 20 |
| Phenanthrene | 6.31 | | 0.450 | 1.35 | ug/L | 10.00 | U | 63.1 | 54-120 | 11.8 | 20 |
| Phenol | 3.14 | | 0.580 | 1.74 | ug/L | 10.00 | U | 31.4 | 5-112 | 8.20 | 20 |
| Pyrene | 7.05 | | 0.220 | 0.660 | ug/L | 10.00 | U | 70.5 | 52-115 | 6.68 | 20 |
| Pyridine | 2.86 | J-3, | 0.530 | 1.59 | ug/L | 10.00 | U | 28.6 | 40-110 | 15.9 | 30 |
| *Surrogate: 2,4,6-Tribromophenol* | *26.4* | | | | ug/L | *50.00* | | *52.7* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *17.5* | | | | ug/L | *25.00* | | *70.0* | *50-150* | | |

Serial #: 01262016140549

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0032

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PSL - FPL St. Lucie Power Plant
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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## BNAs by EPA 625 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601149 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601149-MSD1)** | **Source: 16A0144-01** | | Prepared: 01/08/2016 Analyzed: 01/11/2016 | | | | | | | | |
| *Surrogate: 2-Fluorophenol* | *20.0* | | | | ug/L | *50.00* | | *40.0* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *14.7* | | | | ug/L | *25.00* | | *58.7* | *50-150* | | |
| *Surrogate: Phenol-d6* | *14.2* | | | | ug/L | *50.00* | | *28.4* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *19.8* | | | | ug/L | *25.00* | | *79.1* | *50-150* | | |

Serial #: 01262016140549

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Gross Alpha Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601411 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1601411-BLK1)** | | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Alpha | ND | | 0.53 | 1.59 | pCi/L | | | | - | | |
| **LCS (1601411-BS1)** | | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Alpha | 864 | | 1.98 | 5.94 | pCi/L | 1000 | | 86.4 | 60-125 | | |
| **LCS Dup (1601411-BSD1)** | | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Alpha | 858 | | 2.05 | 6.15 | pCi/L | 1000 | | 85.8 | 60-125 | 0.697 | 25 |
| **Matrix Spike (1601411-MS1)** | | **Source: 15L0614-02** | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Alpha | 827 | | 2.32 | 6.96 | pCi/L | 1000 | 1.26±0.38 | 82.7 | 60-125 | | |
| **Matrix Spike Dup (1601411-MSD1)** | | **Source: 15L0614-02** | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Alpha | 733 | | 2.58 | 7.74 | pCi/L | 1000 | 1.26±0.38 | 73.3 | 60-125 | 12.1 | 25 |

Serial #: 01262016140549

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Gross Beta Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601411 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1601411-BLK1)** | | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Beta | ND | | 0.800 | 2.40 | pCi/L | | | | - | | |
| **LCS (1601411-BS1)** | | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Beta | 206 | | 2.80 | 8.40 | pCi/L | 200.0 | | 103 | 0-200 | | |
| **LCS Dup (1601411-BSD1)** | | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Beta | 173 | | 2.70 | 8.10 | pCi/L | 200.0 | | 86.5 | 0-200 | 17.4 | 200 |
| **Matrix Spike (1601411-MS1)** | **Source: 15L0614-02** | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Beta | 706 | | 2.86 | 8.58 | pCi/L | 1000 | 15.4±0.66 | 69.1 | 0-200 | | |
| **Matrix Spike Dup (1601411-MSD1)** | **Source: 15L0614-02** | | Prepared: 01/07/2016 Analyzed: 01/18/2016 | | | | | | | | |
| Gross Beta | 771 | | 3.15 | 9.45 | pCi/L | 1000 | 15.4±0.66 | 75.6 | 0-200 | 8.99 | 200 |

Serial #: 01262016140549

FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601142 - CBOD SM5210B** | | | | | | | | | | | |
| **Blank (1601142-BLK1)** | | | Prepared: 01/07/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Carbonaceous BOD | ND | | 2.00 | 6.00 | mg/L | | | | - | | |
| **LCS (1601142-BS1)** | | | Prepared: 01/07/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Carbonaceous BOD | 173 | | 2.00 | 6.00 | mg/L | 198.0 | | 87.4 | 85-115 | | |
| **LCS Dup (1601142-BSD1)** | | | Prepared: 01/07/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Carbonaceous BOD | 178 | | 2.00 | 6.00 | mg/L | 198.0 | | 89.9 | 85-115 | 2.85 | 20 |

Serial #: 01262016140549

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0032

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

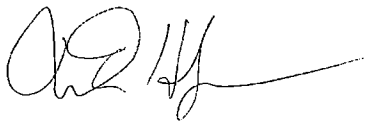
## Total Recoverable Metals by EPA 200.7 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601131 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601131-BLK1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Antimony | ND | | 0.003 | 0.008 | mg/L | | | | - | | |
| Boron | ND | | 0.004 | 0.011 | mg/L | | | | - | | |
| Molybdenum | ND | | 0.004 | 0.013 | mg/L | | | | - | | |
| Titanium | ND | | 0.0006 | 0.0018 | mg/L | | | | - | | |
| **LCS (1601131-BS1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Antimony | 1.017 | | 0.003 | 0.008 | mg/L | 1.000 | | 102 | 85-115 | | |
| Boron | 1.031 | | 0.004 | 0.011 | mg/L | 1.000 | | 103 | 85-115 | | |
| Molybdenum | 1.006 | | 0.004 | 0.013 | mg/L | 1.000 | | 101 | 85-115 | | |
| Titanium | 1.015 | | 0.0006 | 0.0018 | mg/L | 1.000 | | 101 | 85-115 | | |
| **Matrix Spike (1601131-MS1)** | | **Source: 16A0101-02** | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Antimony | 1.020 | | 0.003 | 0.008 | mg/L | 1.000 | U | 102 | 70-130 | | |
| Boron | 1.391 | | 0.004 | 0.011 | mg/L | 1.000 | 0.3732 | 102 | 70-130 | | |
| Molybdenum | 1.017 | | 0.004 | 0.013 | mg/L | 1.000 | U | 102 | 70-130 | | |
| Titanium | 1.006 | | 0.0006 | 0.0018 | mg/L | 1.000 | 0.0043 | 100 | 70-130 | | |

Serial #: 01262016140549

FPL Central Lab



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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Total Recoverable Metals by EPA 200.7 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601131 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (1601131-MSD1)** | **Source: 16A0101-02** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Antimony | 1.018 | | 0.003 | 0.008 | mg/L | 1.000 | U | 102 | 70-130 | 0.157 | 20 |
| Boron | 1.387 | | 0.004 | 0.011 | mg/L | 1.000 | 0.3732 | 101 | 70-130 | 0.332 | 20 |
| Molybdenum | 1.038 | | 0.004 | 0.013 | mg/L | 1.000 | U | 104 | 70-130 | 2.10 | 20 |
| Titanium | 1.008 | | 0.0006 | 0.0018 | mg/L | 1.000 | 0.0043 | 100 | 70-130 | 0.256 | 20 |
| **Batch 1601166 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601166-BLK1)** | | | Prepared: 01/07/2016 Analyzed: 01/08/2016 | | | | | | | | |
| Tin | ND | | 0.008 | 0.024 | mg/L | | | | - | | |
| **LCS (1601166-BS1)** | | | Prepared: 01/07/2016 Analyzed: 01/08/2016 | | | | | | | | |
| Tin | 0.985 | | 0.008 | 0.024 | mg/L | 1.000 | | 98.5 | 85-115 | | |
| **Matrix Spike (1601166-MS1)** | **Source: 16A0032-01** | | Prepared: 01/07/2016 Analyzed: 01/08/2016 | | | | | | | | |
| Tin | 0.988 | | 0.008 | 0.024 | mg/L | 1.000 | U | 98.8 | 70-130 | | |
| **Matrix Spike Dup (1601166-MSD1)** | **Source: 16A0032-01** | | Prepared: 01/07/2016 Analyzed: 01/08/2016 | | | | | | | | |
| Tin | 0.988 | | 0.008 | 0.024 | mg/L | 1.000 | U | 98.8 | 70-130 | 0.0419 | 20 |

Serial #: 01262016140549

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NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601102 - TOC SM 5310C** | | | | | | | | | | | |
| **Blank (1601102-BLK1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Total Organic Carbon | ND | | 0.168 | 0.504 | mg/L | | | | - | | |
| **LCS (1601102-BS1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Total Organic Carbon | 5.69 | | 0.168 | 0.504 | mg/L | 5.000 | | 114 | 80-120 | | |
| **Duplicate (1601102-DUP1)** | **Source: 16A0058-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Total Organic Carbon | ND | | 0.168 | 0.504 | mg/L | | U | | - | | 20 |
| **Matrix Spike (1601102-MS1)** | **Source: 16A0058-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Total Organic Carbon | 4.86 | | 0.168 | 0.504 | mg/L | 5.000 | U | 97.2 | 80-120 | | |
| **Matrix Spike Dup (1601102-MSD1)** | **Source: 16A0058-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Total Organic Carbon | 4.90 | | 0.168 | 0.504 | mg/L | 5.000 | U | 98.0 | 80-120 | 0.820 | 20 |
| **Batch 1601107 - SM 2120B** | | | | | | | | | | | |
| **Blank (1601107-BLK1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Color | 0/5.38 | | 1.00 | 3.00 | Pt-Co | | | | - | | |

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NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

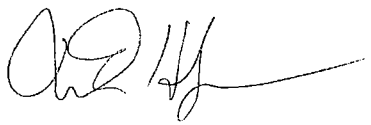
## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601107 - SM 2120B** | | | | | | | | | | | |
| **LCS (1601107-BS1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Color | 20/1.5 | | 1.00 | 3.00 | Pt-Co | 20.00 | | 100 | 90-110 | | |
| **Duplicate (1601107-DUP1)** | **Source: 16A0101-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| Color | 0/8.94 | | 1.00 | 3.00 | Pt-Co | | 0/8.96 | | - | | 20 |
| **Batch 1601134 - SM5540C** | | | | | | | | | | | |
| **Blank (1601134-BLK1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | ND | | 0.0603 | 0.181 | mg/L | | | | - | | |
| **LCS (1601134-BS1)** | | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.525 | | 0.0603 | 0.181 | mg/L | 0.5000 | | 105 | 90-110 | | |
| **Duplicate (1601134-DUP1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.137 | I | 0.0603 | 0.181 | mg/L | | 0.138 | | - | 0.727 | 20 |
| **Matrix Spike (1601134-MS1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.665 | | 0.0603 | 0.181 | mg/L | 0.5000 | 0.138 | 105 | 90-110 | | |

Serial #: 01262016140549

FPL Central Lab



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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: E86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601134 - SM5540C** | | | | | | | | | | | |
| **Matrix Spike Dup (1601134-MSD1)** | **Source: 16A0032-01** | | Prepared & Analyzed: 01/07/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.663 | | 0.0603 | 0.181 | mg/L | 0.5000 | 0.138 | 105 | 90-110 | 0.380 | 20 |

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/26/2016 14:05

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **16A0032-01 Intake** | | |
| | A | 500mL Clear Glass - Unpres |
| | B | Amber Unpres - 1000mL |
| | C | Amber Unpres - 1000mL |
| | D | Plastic 250 mL - HN03 |
| | E | Poly H2SO4 - 250mL |
| | F | Poly HNO3 - 250 mL |
| | G | Poly HNO3 - 500mL |
| | H | Poly Unpres - 1000mL |
| | I | Poly Unpres - 500mL |
| | J | VOA Vial - H2SO4 |
| | K | VOA Vial - H2SO4 |

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**Reported:**
01/26/2016 14:05

## Notes and Definitions

| | |
|---|---|
| J4 | The Laboratory Control Spike failed to meet the established quality control criteria for either precision or accuracy;. However the Matrix Spike and Matrix Spike Duplicate samples are within QA/QC limits. |
| J-3 | The matrix spike recovery exceeded method acceptance limits indicating matrix interference. |
| J-2 | The laboratory control sample recovery exceeded method acceptance limits. |
| J2 | The MS/MSD failed to meet the established quality control criteria for either precision or accuracy due to high levels of target analytes;. However the Laboratory Control Spike is within QA/QC limits. |
| J-1 | Surrogate recovery limits have been exceeded. |
| J1 | The Matrix Spike and/or Matrix spike duplicate was outside control limits due to potential matrix interference. Batch is accepted on BKS/BSD recoveries within control limits. |
| DL1 | Sample was diluted due to high levels of non-target analyte interference. |
| J-3 | [Undefined] |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |

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01/26/2016 14:05

RPD Relative Percent Difference

V Analyte detected in the sample and the associated preparation blank

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

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## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

16A0032

Client: PSL - FPL St. Lucie Power Plant
Project: PSL - D001 POD Permit Renewal Pro
Project Manager: Chrissi-lee Williams
Project Number: PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 06 | Intake | Water | Composite | 1/6/16 | 0805 | JP | 500mL Clear Glass - Unpres | 1✓ | SUB Low Level Mercury |
| 06 | Intake | Water | Composite | | | | Amber H2SO4 - 1000mL | 0 | Wet Chem - Oil and Grease<br>YM 01/06/16 |
| 06 | Intake | Water | Composite | 1/6/16 | 0805 | JP | Amber Unpres - 1000mL | 2✓ | EPA 625 |
| 06 | Intake | Water | Composite | 1/6/16 | 0805 | JP | Plastic 250 mL - HNO3 | 1✓ | ME - Antimony by 200.7<br>ME - Boron by EPA 200.7<br>ME - Molybdenum by EPA 200.7<br>ME - Tin by EPA 200.7<br>ME - Titanium by EPA 200.7 |

Lot Number of Preservative Used: F5E0613 - $HNO_3$ Amount Used: 0.30mL Lot Number of Preservative Used: F502118 - $H_2SO_4$ Amount Used: 1.0mL

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Bottles: F5J2601, F5G2203, F5H0504

REC IN ICE @ 4.9°C

Relinquished By: [signature] Date/Time: 1/6/15 - 1010

Received By: [signature] Date/Time: 1/6/15 1010

Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| Client: | PSL - FPL St. Lucie Power Plant | Project Manager: | Chrissi-lee Williams |
| Project: | PSL - D001 POD Permit Renewal Pro | Project Number: | PSL Permit Renewal Project |

16A0032

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 06 | Intake | Water | Composite | 1/6/16 | 0805 | JP | Poly H2SO4 - 250mL | 1 ✓ | Wet Chem - Ammonia_Distilled by EPA 350.1<br>Wet Chem - COD<br>Wet Chem - TKN by EPA 351.2<br>Wet Chem - Total Nitrogen<br>Wet Chem - Total Organic Nitrogen<br>Wet Chem - Total Phosphorus by SM4500-P F |

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| Client: | PSL - FPL St. Lucie Power Plant | Project Manager: | Chrissi-lee Williams |
| Project: | PSL - D001 POD Permit Renewal Pro | Project Number: | PSL Permit Renewal Project |

16A0032

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 05 | Intake | Water | Composite | 1/6/16 | 0805 | JP | Poly HNO3 - 250 mL | 1 | ME - Arsenic by 200.7<br>ME - Beryllium by 200.7<br>ME - Cadmium by 200.7<br>ME - Chromium by 200.7<br>ME - Copper Total 200.7<br>ME - Iron by 200.7<br>ME - Lead by 200.7<br>ME - Magnesium by 200.7<br>ME - Nickel by 200.7<br>ME - Selenium by 200.7<br>ME - Silver by 200.7<br>ME - Thallium by EPA 200.7<br>ME - Zinc by 200.7 |
| 06 | Intake | Water | Composite | 1/6/16 | 0805 | JP | Poly HNO3 - 500mL | 1 | SUB - EPA 900 |

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

See page 1

Relinquished By _____ Date/Time _____ Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____ Received By _____ Date/Time _____

## CHAIN OF CUSTODY / BOTTLE ORDER

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| | | | |
|---|---|---|---|
| Client: | PSL - FPL St. Lucie Power Plant | Project Manager: | Chrissi-lee Williams |
| Project: | PSL - D001 POD Permit Renewal Pro | Project Number: | PSL Permit Renewal Project |

16A0032

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 06 | Intake | Water | Composite | 1/6/16 | 0805 | JP | Poly Unpres - 1000mL | 1 ✓ | SUB - Color by SM2120B<br>SUB - MBAS by SM5540C<br>SUB CBOD |
| 06 | Intake | Water | Composite | 1/6/15 | 0805 | JP | Poly Unpres - 500mL | 1 ✓ | Wet Chem - Bromide<br>Wet Chem - Conductivity<br>Wet Chem - Fluoride<br>Wet Chem - Nitrate by SM4500NO3F<br>Wet Chem - Nitrite by SM4500NO3F<br>Wet Chem - Sulfate<br>Wet Chem - TSS |
| 06 | Intake | Water | Composite | 1/6/15 | 0805 | JP | VOA Vial - H2SO4 | 2 ✓ | SUB - TOC |
| | | | | | | | | | |
| | | | | | | | | | |

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

See page 1

| | | | |
|---|---|---|---|
| Relinquished By | Date/Time | Relinquished By | Date/Time |
| Received By | Date/Time | Received By | Date/Time |

16A0032

Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 1/6/16 10:10

Chain of Custody ID: _____

Central Laboratory

Initials: SD

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | Yes | No | N/A | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | N/A | |
| #3. Shipping container in good condition? | Yes | No | None | |
| #4. Chain of Custody (COC) present? | Yes | No | | |
| #5. COC signed when relinquished? | Yes | No | | |
| #6. Samples received in ice? | Yes | No | N/A | |
| If NO? Temp = ____ °C | | | | |
| Temp = > 6°C? Management/customer notified? | Yes | No | Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | Yes | No | | |
| #8. Container label(s) legible and intact? | Yes | No | | |
| #9. Any missing/extra samples? | Yes | No | | |
| #10. COC signed when received? | Yes | No | | |
| #11. Sample analysis instructions complete on COC? | Yes | No | | |
| #12. Sample matrix/properties agree with COC? | Yes | No | | |
| #13. Samples in proper container/bottle? | Yes | No | | |
| #14. Sample container(s) intact? | Yes | No | | |
| #15. Samples have proper chemical preservation? | Yes | No | N/A | pH= 12 |
| If NO? a. Chemical preservation added: _____ | | | | |
| Lot#: _____ Amount added: _____ | | | | |
| Date: _____ Time: _____ Initials: _____ | | | | |
| b. pH after 24 hours: _____ | | | | |
| Date: _____ Time: _____ Initials: _____ | | | | |
| #16. Sufficient sample amount for indicated test(s)? | Yes | No | | |
| #17. All samples received within sufficient hold time (HT)? | Yes | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration? | Yes | No | N/A | |
| Date: _____ Time: _____ Initials: _____ | | | | |
| #19. Subcontract of sample(s)? | Yes | No | | |
| #20. VOC samples have zero headspace? | Yes | No | N/A | |
| If NO? Bubble size (mm): | | | | |
| Sample ID: ____ a. ____ b. ____ c. ____ d. ____ | | | | |
| ____ a. ____ b. ____ c. ____ d. ____ | | | | |
| ____ a. ____ b. ____ c. ____ d. ____ | | | | |
| ____ a. ____ b. ____ c. ____ d. ____ | | | | |
| ____ a. ____ b. ____ c. ____ d. ____ | | | | |
| ____ a. ____ b. ____ c. ____ d. ____ | | | | |
| #21. Trip blank received where volatiles requested? | Yes | No | N/A | |

Nonconformance Documentation

Customer: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action: _____

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

Document Control # 468 Revision 0 07/25/14

16A0032

# FPL Central Lab
## List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative |
|---|---|---|---|
| Intake | Clear Glass | 500mL | ICE |
| | Amber Glass | 1L | ICE |
| | Amber Glass | 1L | ICE |
| | P | 250mL | $HNO_3$ |
| | P | 250mL | $H_2SO_4$ |
| | P | 250mL | $HNO_3$ |
| | P | 500mL | $HNO_3$ |
| | P | 1L | ICE |
| | P | 500mL | ICE |
| | Glass vial | 40mL | $H_2SO_4$ |
| Intake | Glass vial | 40mL | $H_2SO_4$ |
| SO ~~Intake~~ | | | |
| | | | |
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| | | | |
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# LABORATORY RESULTS FOR WORK ORDER 15L0380

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 12/21/2015 12:00:00AM Received: 12/22/2015 10:25:00AM**
**Lab Sample #: 15L0380-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental - E87671** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| Phenolics | U | | | 0.0170 | 0.0510 | mg/L | 1 | 1512524 | 1/4/2016 15:40 | SUB | 1/6/2016 15:40 | EPA 420.1 | |
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | U | D-1 | | 0.0760 | 0.226 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| 1,1,2,2-Tetrachloroethane | U | D-1 | | 0.138 | 0.414 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| 1,1,2-Trichloroethane | U | D-1 | | 0.150 | 0.452 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| 1,1-Dichloroethane | U | D-1 | | 0.408 | 1.22 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| 1,1-Dichloroethene | U | D-1 | | 0.118 | 0.352 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |

Serial #: 01072016162051

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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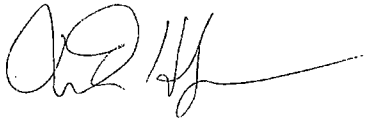
**Lab Sample #: 15L0380-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,2-Dichloroethane | U | D-1 | | 0.0720 | 0.218 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| 1,2-Dichloropropane | U | D-1 | | 0.0900 | 0.272 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| 2-Chloroethylvinyl ether | U | D-1 | | 1.49 | 4.47 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Acrolein | U | D-1 | | 0.606 | 1.82 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Acrylonitrile | U | D-1 | | 0.320 | 0.958 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Benzene | U | D-1 | | 0.0600 | 0.180 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Bromodichloromethane | U | D-1 | | 0.172 | 0.516 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Bromoform | U | D-1 | | 0.276 | 0.828 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Bromomethane | U | D-1 | | 0.264 | 0.794 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Carbon Tetrachloride | U | D-1 | | 0.104 | 0.312 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Chlorobenzene | U | D-1 | | 0.158 | 0.474 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Chloroethane | U | D-1 | | 0.616 | 1.85 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |

Serial #: 01072016162051

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 12/21/2015 12:00:00AM Received: 12/22/2015 10:25:00AM**
**Lab Sample #: 15L0380-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Chloroform | U | D-1 | | 0.154 | 0.464 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Chloromethane | U | D-1 | | 0.0960 | 0.288 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| cis-1,3-Dichloropropene | U | D-1 | | 0.100 | 0.302 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Dibromochloromethane | U | D-1 | | 0.132 | 0.398 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Dichlorodifluoromethane | U | D-1 | | 0.188 | 0.566 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Ethyl Benzene | U | D-1 | | 0.168 | 0.504 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Methylene Chloride | U | D-1 | | 1.50 | 4.51 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Tetrachloroethene | U | D-1 | | 0.168 | 0.506 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Toluene | U | D-1 | | 0.0700 | 0.208 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| trans-1,2-Dichloroethene | U | D-1 | | 0.214 | 0.640 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| trans-1,3-Dichloropropene | U | D-1 | | 0.500 | 1.50 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Trichloroethene | U | D-1 | | 0.100 | 0.302 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

**Client Sample ID: Intake**
**Client Sample ID (cont):**
**Sampled: 12/21/2015 12:00:00AM Received: 12/22/2015 10:25:00AM**
**Lab Sample #: 15L0380-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Trichlorofluoromethane | U | D-1 | | 0.140 | 0.422 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| Vinyl chloride | U | D-1 | | 0.168 | 0.506 | ug/L | 2 | 1512802 | 12/28/2015 9:30 | BBL | 12/28/2015 16:07 | EPA 624 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | | | *69.6 %* | *50-110* | | *1512802* | *12/28/2015 9:30* | | *12/28/2015 16:07* | *EPA 624* | |
| *Surrogate: 2-Bromo-1-chloropropane* | | | | | *88.4 %* | *74-110* | | *1512802* | *12/28/2015 9:30* | | *12/28/2015 16:07* | *EPA 624* | |
| *Surrogate: 4-Bromofluorobenzene* | | | | | *82.8 %* | *46-125* | | *1512802* | *12/28/2015 9:30* | | *12/28/2015 16:07* | *EPA 624* | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| Cyanide (total) | U | | | 0.00230 | 0.00690 | mg/L | 1 | 1512735 | 12/28/2015 12:45 | SA | 12/28/2015 13:42 | EPA 335.4 | |

**Analyzed at: FPL Central Lab**

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**Reported:**
01/07/2016 16:20

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**Client Sample ID (cont):**
**Sampled: 12/21/2015 12:00:00AM Received: 12/22/2015 10:25:00AM**
**Lab Sample #: 15L0380-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| Oil & Grease (HEM) | U | | D | 1.0 | 4.1 | mg/L | 1 | F15L481 | 12/30/2015 10:00 | CMS | 12/30/2015 10:00 | EPA 1664A | NELAC |

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L481 - EPA 1664A** | | | | | | | | | | | |
| **Blank (F15L481-BLK1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Oil & Grease (HEM) | U | | 1.0 | 4.1 | mg/L | | | | | | |
| **LCS (F15L481-BS1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Oil & Grease (HEM) | 75.8 | | | | mg/L | 74.60 | | 102 | 78-114 | | |
| **LCS Dup (F15L481-BSD1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Oil & Grease (HEM) | 78.2 | | | | mg/L | 74.60 | | 105 | 78-114 | 3 | 18 |

Serial #: 01072016162051

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NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental - E87671**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512524 - EPA 420.1** | | | | | | | | | | | |
| **Blank (1512524-BLK1)** | | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | U | | 0.00230 | 0.00690 | mg/L | | | | - | | |
| **LCS (1512524-BS1)** | | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | 0.105 | | 0.00230 | 0.00690 | mg/L | 0.1 | | 105 | 90-110 | | |
| **Matrix Spike (1512524-MS1)** | **Source: 15L0646-01** | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | 1.01 | | 0.00230 | 0.00690 | mg/L | 1 | 0.00350 | 101 | 70-130 | | |
| **Matrix Spike Duplicate (1512524-MSD1)** | **Source: 15L0646-01** | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | 1.00 | | 0.00230 | 0.00690 | mg/L | | 0.00350 | 100 | 70-130 | 1 | 30 |

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NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **Blank (1512802-BLK1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | U | | 0.0380 | 0.113 | ug/L | | | | - | | |
| 1,1,2,2-Tetrachloroethane | U | | 0.0690 | 0.207 | ug/L | | | | - | | |
| 1,1,2-Trichloroethane | U | | 0.0750 | 0.226 | ug/L | | | | - | | |
| 1,1-Dichloroethane | U | | 0.204 | 0.612 | ug/L | | | | - | | |
| 1,1-Dichloroethene | U | | 0.0590 | 0.176 | ug/L | | | | - | | |
| 1,2-Dichloroethane | U | | 0.0360 | 0.109 | ug/L | | | | - | | |
| 1,2-Dichloropropane | U | | 0.0450 | 0.136 | ug/L | | | | - | | |
| 2-Chloroethylvinyl ether | U | | 0.745 | 2.24 | ug/L | | | | - | | |
| Acrolein | U | | 0.303 | 0.909 | ug/L | | | | - | | |
| Acrylonitrile | U | | 0.160 | 0.479 | ug/L | | | | - | | |
| Benzene | U | | 0.0300 | 0.0900 | ug/L | | | | - | | |
| Bromodichloromethane | U | | 0.0860 | 0.258 | ug/L | | | | - | | |
| Bromoform | U | | 0.138 | 0.414 | ug/L | | | | - | | |
| Bromomethane | U | | 0.132 | 0.397 | ug/L | | | | - | | |
| Carbon Tetrachloride | U | | 0.0520 | 0.156 | ug/L | | | | - | | |
| Chlorobenzene | U | | 0.0790 | 0.237 | ug/L | | | | - | | |

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## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **Blank (1512802-BLK1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| Chloroethane | U | | 0.308 | 0.924 | ug/L | | | | - | | |
| Chloroform | U | | 0.0770 | 0.232 | ug/L | | | | - | | |
| Chloromethane | U | | 0.0480 | 0.144 | ug/L | | | | - | | |
| cis-1,3-Dichloropropene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Dibromochloromethane | U | | 0.0660 | 0.199 | ug/L | | | | - | | |
| Dichlorodifluoromethane | U | | 0.0940 | 0.283 | ug/L | | | | - | | |
| Ethyl Benzene | U | | 0.0840 | 0.252 | ug/L | | | | - | | |
| Methylene Chloride | U | | 0.751 | 2.25 | ug/L | | | | - | | |
| Tetrachloroethene | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| Toluene | U | | 0.0350 | 0.104 | ug/L | | | | - | | |
| trans-1,2-Dichloroethene | U | | 0.107 | 0.320 | ug/L | | | | - | | |
| trans-1,3-Dichloropropene | U | | 0.250 | 0.751 | ug/L | | | | - | | |
| Trichloroethene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Trichlorofluoromethane | U | | 0.0700 | 0.211 | ug/L | | | | - | | |
| Vinyl chloride | U | | 0.0840 | 0.253 | ug/L | | | | - | | |

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01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **Blank (1512802-BLK1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.57* | | | | ug/L | *5.000* | | *71.4* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *4.89* | | | | ug/L | *5.000* | | *97.8* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *4.50* | | | | ug/L | *5.000* | | *90.0* | *46-125* | | |
| **LCS (1512802-BS1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | 25.2 | | 0.0380 | 0.113 | ug/L | 20.00 | | 126 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 17.6 | | 0.0690 | 0.207 | ug/L | 20.00 | | 87.8 | 46-157 | | |
| 1,1,2-Trichloroethane | 20.2 | | 0.0750 | 0.226 | ug/L | 20.00 | | 101 | 52-150 | | |
| 1,1-Dichloroethane | 21.9 | | 0.204 | 0.612 | ug/L | 20.00 | | 110 | 59-155 | | |
| 1,1-Dichloroethene | 22.7 | | 0.0590 | 0.176 | ug/L | 20.00 | | 113 | 0-234 | | |
| 1,2-Dichloroethane | 21.4 | | 0.0360 | 0.109 | ug/L | 20.00 | | 107 | 49-155 | | |
| 1,2-Dichloropropane | 19.6 | | 0.0450 | 0.136 | ug/L | 20.00 | | 98.1 | 0-210 | | |
| 2-Chloroethylvinyl ether | 14.4 | | 0.745 | 2.24 | ug/L | 20.00 | | 72.0 | 0-305 | | |
| Acrolein | 88.0 | | 0.303 | 0.909 | ug/L | 100.0 | | 88.0 | 70-130 | | |
| Acrylonitrile | 19.7 | | 0.160 | 0.479 | ug/L | 20.00 | | 98.3 | 70-130 | | |
| Benzene | 21.4 | | 0.0300 | 0.0900 | ug/L | 20.00 | | 107 | 37-151 | | |

Serial #: 01072016162051

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0380

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **LCS (1512802-BS1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| Bromodichloromethane | 19.3 | | 0.0860 | 0.258 | ug/L | 20.00 | | 96.4 | 35-155 | | |
| Bromoform | 16.9 | | 0.138 | 0.414 | ug/L | 20.00 | | 84.5 | 45-169 | | |
| Bromomethane | 21.8 | | 0.132 | 0.397 | ug/L | 20.00 | | 109 | 0-242 | | |
| Carbon Tetrachloride | 22.5 | | 0.0520 | 0.156 | ug/L | 20.00 | | 113 | 70-140 | | |
| Chlorobenzene | 19.8 | | 0.0790 | 0.237 | ug/L | 20.00 | | 98.8 | 37-160 | | |
| Chloroethane | 20.8 | | 0.308 | 0.924 | ug/L | 20.00 | | 104 | 14-230 | | |
| Chloroform | 23.3 | | 0.0770 | 0.232 | ug/L | 20.00 | | 117 | 51-138 | | |
| Chloromethane | 20.6 | | 0.0480 | 0.144 | ug/L | 20.00 | | 103 | 0-273 | | |
| cis-1,3-Dichloropropene | 20.0 | | 0.0500 | 0.151 | ug/L | 20.00 | | 100 | 0-227 | | |
| Dibromochloromethane | 18.4 | | 0.0660 | 0.199 | ug/L | 20.00 | | 92.2 | 53-149 | | |
| Dichlorodifluoromethane | 23.4 | | 0.0940 | 0.283 | ug/L | 20.00 | | 117 | 70-130 | | |
| Ethyl Benzene | 20.7 | | 0.0840 | 0.252 | ug/L | 20.00 | | 103 | 37-162 | | |
| Methylene Chloride | 20.4 | | 0.751 | 2.25 | ug/L | 20.00 | | 102 | 0-221 | | |
| Tetrachloroethene | 22.9 | | 0.0840 | 0.253 | ug/L | 20.00 | | 115 | 64-148 | | |
| Toluene | 20.8 | | 0.0350 | 0.104 | ug/L | 20.00 | | 104 | 47-150 | | |
| trans-1,2-Dichloroethene | 21.5 | | 0.107 | 0.320 | ug/L | 20.00 | | 107 | 54-156 | | |

Serial #: 01072016162051

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0380

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **LCS (1512802-BS1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| trans-1,3-Dichloropropene | 18.7 | | 0.250 | 0.751 | ug/L | 20.00 | | 93.7 | 17-183 | | |
| Trichloroethene | 20.9 | | 0.0500 | 0.151 | ug/L | 20.00 | | 104 | 71-157 | | |
| Trichlorofluoromethane | 22.2 | | 0.0700 | 0.211 | ug/L | 20.00 | | 111 | 17-181 | | |
| Vinyl chloride | 19.4 | | 0.0840 | 0.253 | ug/L | 20.00 | | 96.9 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.48* | | | | ug/L | *5.000* | | *130* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *11.4* | | | | ug/L | *5.000* | | *228* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.85* | | | | ug/L | *5.000* | | *137* | *46-125* | | |
| **Matrix Spike (1512802-MS1)** | **Source: 15L0691-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | 488 | | 0.760 | 2.26 | ug/L | 400.0 | U | 122 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 365 | | 1.38 | 4.14 | ug/L | 400.0 | U | 91.2 | 46-157 | | |
| 1,1,2-Trichloroethane | 440 | | 1.50 | 4.52 | ug/L | 400.0 | U | 110 | 52-150 | | |
| 1,1-Dichloroethane | 483 | | 4.08 | 12.2 | ug/L | 400.0 | U | 121 | 59-155 | | |
| 1,1-Dichloroethene | 484 | | 1.18 | 3.52 | ug/L | 400.0 | U | 121 | 0-234 | | |
| 1,2-Dichloroethane | 494 | | 0.720 | 2.18 | ug/L | 400.0 | U | 123 | 49-155 | | |
| 1,2-Dichloropropane | 383 | | 0.900 | 2.72 | ug/L | 400.0 | U | 95.8 | 0-210 | | |

Serial #: 01072016162051

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0380

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1512802-MS1)** | **Source: 15L0691-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| 2-Chloroethylvinyl ether | 231 | | 14.9 | 44.7 | ug/L | 400.0 | U | 57.6 | 0-305 | | |
| Acrolein | 2470 | | 6.06 | 18.2 | ug/L | 2000 | U | 124 | 70-130 | | |
| Acrylonitrile | 436 | | 3.20 | 9.58 | ug/L | 400.0 | U | 109 | 70-130 | | |
| Benzene | 469 | | 0.600 | 1.80 | ug/L | 400.0 | U | 117 | 37-151 | | |
| Bromodichloromethane | 408 | | 1.72 | 5.16 | ug/L | 400.0 | U | 102 | 35-155 | | |
| Bromoform | 351 | | 2.76 | 8.28 | ug/L | 400.0 | U | 87.8 | 45-169 | | |
| Bromomethane | 506 | | 2.64 | 7.94 | ug/L | 400.0 | U | 126 | 0-242 | | |
| Carbon Tetrachloride | 445 | | 1.04 | 3.12 | ug/L | 400.0 | U | 111 | 70-140 | | |
| Chlorobenzene | 425 | | 1.58 | 4.74 | ug/L | 400.0 | U | 106 | 37-160 | | |
| Chloroethane | 502 | | 6.16 | 18.5 | ug/L | 400.0 | U | 125 | 14-230 | | |
| Chloroform | 411 | | 1.54 | 4.64 | ug/L | 400.0 | U | 103 | 51-138 | | |
| Chloromethane | 425 | | 0.960 | 2.88 | ug/L | 400.0 | U | 106 | 0-273 | | |
| cis-1,3-Dichloropropene | 397 | | 1.00 | 3.02 | ug/L | 400.0 | U | 99.4 | 0-227 | | |
| Dibromochloromethane | 395 | | 1.32 | 3.98 | ug/L | 400.0 | U | 98.8 | 53-149 | | |
| Dichlorodifluoromethane | 426 | | 1.88 | 5.66 | ug/L | 400.0 | U | 107 | 70-130 | | |
| Ethyl Benzene | 437 | | 1.68 | 5.04 | ug/L | 400.0 | U | 109 | 37-162 | | |

Serial #: 01072016162051

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0380

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1512802-MS1)** | **Source: 15L0691-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Methylene Chloride | 462 | | 15.0 | 45.1 | ug/L | 400.0 | U | 116 | 0-221 | | |
| Tetrachloroethene | 469 | | 1.68 | 5.06 | ug/L | 400.0 | U | 117 | 64-148 | | |
| Toluene | 431 | | 0.700 | 2.08 | ug/L | 400.0 | U | 108 | 47-150 | | |
| trans-1,2-Dichloroethene | 475 | | 2.14 | 6.40 | ug/L | 400.0 | U | 119 | 54-156 | | |
| trans-1,3-Dichloropropene | 378 | | 5.00 | 15.0 | ug/L | 400.0 | U | 94.5 | 17-183 | | |
| Trichloroethene | 439 | | 1.00 | 3.02 | ug/L | 400.0 | U | 110 | 71-157 | | |
| Trichlorofluoromethane | 480 | | 1.40 | 4.22 | ug/L | 400.0 | U | 120 | 17-181 | | |
| Vinyl chloride | 387 | | 1.68 | 5.06 | ug/L | 400.0 | U | 96.8 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *133* | | | | ug/L | *100.0* | | *133* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *223* | | | | ug/L | *100.0* | | *223* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *135* | | | | ug/L | *100.0* | | *135* | *46-125* | | |
| **Matrix Spike Dup (1512802-MSD1)** | **Source: 15L0691-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | 358 | | 0.760 | 2.26 | ug/L | 400.0 | U | 89.5 | 52-162 | 30.7 | 30 |
| 1,1,2,2-Tetrachloroethane | 352 | | 1.38 | 4.14 | ug/L | 400.0 | U | 88.0 | 46-157 | 3.63 | 30 |
| 1,1,2-Trichloroethane | 425 | | 1.50 | 4.52 | ug/L | 400.0 | U | 106 | 52-150 | 3.61 | 30 |

Serial #: 01072016162051

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0380

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1512802-MSD1)** | **Source: 15L0691-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| 1,1-Dichloroethane | 482 | | 4.08 | 12.2 | ug/L | 400.0 | U | 121 | 59-155 | 0.0829 | 30 |
| 1,1-Dichloroethene | 489 | | 1.18 | 3.52 | ug/L | 400.0 | U | 122 | 0-234 | 1.11 | 30 |
| 1,2-Dichloroethane | 467 | | 0.720 | 2.18 | ug/L | 400.0 | U | 117 | 49-155 | 5.58 | 30 |
| 1,2-Dichloropropane | 390 | | 0.900 | 2.72 | ug/L | 400.0 | U | 97.6 | 0-210 | 1.91 | 30 |
| 2-Chloroethylvinyl ether | 163 | | 14.9 | 44.7 | ug/L | 400.0 | U | 40.8 | 0-305 | 34.1 | 30 |
| Acrolein | 2390 | | 6.06 | 18.2 | ug/L | 2000 | U | 119 | 70-130 | 3.46 | 30 |
| Acrylonitrile | 395 | | 3.20 | 9.58 | ug/L | 400.0 | U | 98.8 | 70-130 | 9.82 | 30 |
| Benzene | 466 | | 0.600 | 1.80 | ug/L | 400.0 | U | 117 | 37-151 | 0.471 | 30 |
| Bromodichloromethane | 402 | | 1.72 | 5.16 | ug/L | 400.0 | U | 101 | 35-155 | 1.38 | 30 |
| Bromoform | 336 | | 2.76 | 8.28 | ug/L | 400.0 | U | 84.0 | 45-169 | 4.31 | 30 |
| Bromomethane | 511 | | 2.64 | 7.94 | ug/L | 400.0 | U | 128 | 0-242 | 1.10 | 30 |
| Carbon Tetrachloride | 319 | | 1.04 | 3.12 | ug/L | 400.0 | U | 79.7 | 70-140 | 33.0 | 30 |
| Chlorobenzene | 419 | | 1.58 | 4.74 | ug/L | 400.0 | U | 105 | 37-160 | 1.56 | 30 |
| Chloroethane | 497 | | 6.16 | 18.5 | ug/L | 400.0 | U | 124 | 14-230 | 1.00 | 30 |
| Chloroform | 404 | | 1.54 | 4.64 | ug/L | 400.0 | U | 101 | 51-138 | 1.67 | 30 |
| Chloromethane | 424 | | 0.960 | 2.88 | ug/L | 400.0 | U | 106 | 0-273 | 0.188 | 30 |

Serial #: 01072016162051

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0380

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512802 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1512802-MSD1)** | **Source: 15L0691-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| cis-1,3-Dichloropropene | 388 | | 1.00 | 3.02 | ug/L | 400.0 | U | 97.0 | 0-227 | 2.45 | 30 |
| Dibromochloromethane | 382 | | 1.32 | 3.98 | ug/L | 400.0 | U | 95.4 | 53-149 | 3.55 | 30 |
| Dichlorodifluoromethane | 378 | | 1.88 | 5.66 | ug/L | 400.0 | U | 94.6 | 70-130 | 11.9 | 30 |
| Ethyl Benzene | 429 | | 1.68 | 5.04 | ug/L | 400.0 | U | 107 | 37-162 | 1.76 | 30 |
| Methylene Chloride | 457 | | 15.0 | 45.1 | ug/L | 400.0 | U | 114 | 0-221 | 1.17 | 30 |
| Tetrachloroethene | 473 | | 1.68 | 5.06 | ug/L | 400.0 | U | 118 | 64-148 | 0.892 | 30 |
| Toluene | 427 | | 0.700 | 2.08 | ug/L | 400.0 | U | 107 | 47-150 | 1.03 | 30 |
| trans-1,2-Dichloroethene | 474 | | 2.14 | 6.40 | ug/L | 400.0 | U | 118 | 54-156 | 0.169 | 30 |
| trans-1,3-Dichloropropene | 372 | | 5.00 | 15.0 | ug/L | 400.0 | U | 93.0 | 17-183 | 1.65 | 30 |
| Trichloroethene | 431 | | 1.00 | 3.02 | ug/L | 400.0 | U | 108 | 71-157 | 1.70 | 30 |
| Trichlorofluoromethane | 452 | | 1.40 | 4.22 | ug/L | 400.0 | U | 113 | 17-181 | 6.01 | 30 |
| Vinyl chloride | 388 | | 1.68 | 5.06 | ug/L | 400.0 | U | 97.1 | 0-251 | 0.361 | 30 |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *130* | | | | ug/L | *100.0* | | *130* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *220* | | | | ug/L | *100.0* | | *220* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *136* | | | | ug/L | *100.0* | | *136* | *46-125* | | |

Serial #: 01072016162051

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0380

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512735 - EPA 335.4** | | | | | | | | | | | |
| **Blank (1512735-BLK1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| Cyanide (total) | U | | 0.00230 | 0.00690 | mg/L | | | | - | | |
| **LCS (1512735-BS1)** | | | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| Cyanide (total) | 0.190 | | 0.00230 | 0.00690 | mg/L | 0.2000 | | 95.0 | 90-110 | | |
| **Duplicate (1512735-DUP1)** | | **Source: 15L0646-01** | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| Cyanide (total) | 0.00330 | I | 0.00230 | 0.00690 | mg/L | | 0.00350 | | - | 5.88 | 20 |
| **Matrix Spike (1512735-MS1)** | | **Source: 15L0646-01** | Prepared & Analyzed: 12/28/2015 | | | | | | | | |
| Cyanide (total) | 0.104 | J-3, | 0.00230 | 0.00690 | mg/L | 0.2000 | 0.00350 | 50.2 | 90-110 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0380

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **15L0380-01 Intake** | | |
| | A | 40 mL Voa Vial - HCl |
| | B | 40mL Amber H3PO4+CuSO4 |
| | C | 40mL Clear NaOH |
| | D | Amber H2SO4 - 1000mL |
| **15L0380-02 Intake - Grab 1** | | |
| | A | 40 mL Voa Vial - HCl |
| | B | 125mL Amber H3PO4+CuSO4 |
| | C | Poly NaOH - 250mL |
| | D | Amber H2SO4 - 1000mL |
| **15L0380-03 Intake - Grab 2** | | |
| | A | 40 mL Voa Vial - HCl |

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Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0380

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

| | | |
|---|---|---|
| | B | 125mL Amber H3PO4+CuSO4 |
| | C | Poly NaOH - 250mL |
| | D | Amber H2SO4 - 1000mL |

**15L0380-04 Intake - Grab 3**

| | | |
|---|---|---|
| | A | 40 mL Voa Vial - HCl |
| | B | 40mL Amber H3PO4+CuSO4 |
| | C | 40mL Clear NaOH |
| | D | Amber H2SO4 - 1000mL |

**15L0380-05 Intake - Grab 4**

| | | |
|---|---|---|
| | A | 40 mL Voa Vial - HCl |
| | B | 40mL Amber H3PO4+CuSO4 |
| | C | 40mL Clear NaOH |
| | D | Amber H2SO4 - 1000mL |

Serial #: 01072016162051

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 15L0380

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/07/2016 16:20

## Notes and Definitions

| | |
|---|---|
| J-3 | The matrix spike recovery exceeded method acceptance limits indicating matrix interference. |
| J-2 | The laboratory control sample recovery exceeded method acceptance limits. |
| D-1 | Dilution needed due to matrix interference or foamy matrix |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 01072016162051

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

15L0380

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | | | | 40 mL Voa Vial - HCl | 0 | EPA 624 |
| 01 | D001 Point of Discharge | Water | Composite | | | | 40mL Amber H3PO4+CuSO4 | 0 | SUB Phenols |
| 01 | D001 Point of Discharge | Water | Composite | | | | 40mL Clear NaOH | 0 | SUB Cyanide |
| 01 | D001 Point of Discharge | Water | Composite | NA | | | 500mL Clear Glass - Unpres | 1 | SUB Low Level Mercury |
| 01 | D001 Point of Discharge | Water | Composite | | | | Amber H2SO4 - 1000mL | 0 | Wet Chem - Oil and Grease |
| 01 | D001 Point of Discharge | Water | Composite | | | | Amber Unpres - 1000mL | 2 | EPA 625 |

**Lot Number of Preservative Used:** F5E0613-$HNO_3$ **Amount Used:** 0.3 mL **Lot Number of Preservative Used:** F502118-$H_2SO_4$ **Amount Used:** 1.0 mL

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

Bottles F5J2601, F5G2203, F5H0504

Rcvd in ICE 5.8°C

Relinquished By: FPL 12/16/15 — Date/Time

Relinquished By: 12/22/15 - 1025 — Date/Time

Received By: _____ — Date/Time

Received By: FPL 12/22/15 1025 — Date/Time

Document Control #: 453 revision 0

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | | | | Plastic 250 mL - HN03 | 1 | ME - Antimony by 200.7<br>ME - Boron by EPA 200.7<br>ME - Molybdenum by EPA 200.7<br>ME - Tin by EPA 200.7<br>ME - Titanium by EPA 200.7 |
| 01 | D001 Point of Discharge | Water | Composite | NA | | | Poly H2SO4 - 250mL | 1 | Wet Chem - Ammonia _Distilled by EPA 350.1<br>Wet Chem - COD<br>Wet Chem - TKN by EPA 351.2<br>Wet Chem - Total Nitrogen<br>Wet Chem - Total Organic Nitrogen<br>Wet Chem - Total Phosphorus by SM4500-P F |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | | NA | | Poly HNO3 - 250 mL | 1 | ME - Arsenic by 200.7<br>ME - Beryllium by 200.7<br>ME - Cadmium by 200.7<br>ME - Chromium by 200.7<br>ME - Copper Total 200.7<br>ME - Iron by 200.7<br>ME - Lead by 200.7<br>ME - Magnesium by 200.7<br>ME - Nickel by 200.7<br>ME - Selenium by 200.7<br>ME - Silver by 200.7<br>ME - Thallium by EPA 200.7<br>ME - Zinc by 200.7 |
| 01 | D001 Point of Discharge | Water | Composite | | | | Poly HNO3 - 500mL | 1 | SUB - EPA 900 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

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| Received By | Date/Time | Received By | Date/Time |



Document Control #: 453 revision 0

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | D001 Point of Discharge | Water | Composite | | | | Poly Unpres - 1000mL | 1 | SUB - Color by SM2120B<br>SUB - MBAS by SM5540C<br>SUB CBOD |
| 01 | D001 Point of Discharge | Water | Composite | NA | | | Poly Unpres - 500mL | 1 | Wet Chem - Bromide<br>Wet Chem - Conductivity<br>Wet Chem - Fluoride<br>Wet Chem - Nitrate<br>Wet Chem - Nitrite<br>Wet Chem - Sulfate<br>Wet Chem - TSS |
| 01 | D001 Point of Discharge | Water | Composite | | | | VOA Vial - H2SO4 | 2 | SUB - TOC |
| 02 | POD Grab - 1 | Water | Grab | | | | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 02 | POD Grab - 1 | Water | Grab | | | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

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| Received By | Date/Time | Received By | Date/Time |

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 02 | POD Grab - 1 | Water | Grab | | | | 40mL Clear NaOH | 1 | SUB Cyanide |
| 02 | POD Grab - 1 | Water | Grab | | | | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 02 | POD Grab - 1 | Water | Grab | NA | | | Poly Na2S2O3 - 125mL | 1 | SUB - Fecal Coliform by SM9222D |
| 03 | POD Grab - 2 | Water | Grab | | | | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 03 | POD Grab - 2 | Water | Grab | | | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 03 | POD Grab - 2 | Water | Grab | | | | 40mL Clear NaOH | 1 | SUB Cyanide |

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

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Page 25 of 38

Document Control #: 453 revision 0

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 03 | POD Grab - 2 | Water | Grab | | | | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 04 | POD Grab - 3 | Water | Grab | | | | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 04 | POD Grab - 3 | Water | Grab | | NA | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 04 | POD Grab - 3 | Water | Grab | | | | 40mL Clear NaOH | 1 | SUB Cyanide |
| 04 | POD Grab - 3 | Water | Grab | | | | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 05 | POD Grab - 4 | Water | Grab | | | | 40 mL Voa Vial - HCl | 1 | EPA 624 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

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| ceived By | Date/Time | Received By | Date/Time |

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

15L0380

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 05 | POD Grab - 4 | Water | Grab | | | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 05 | POD Grab - 4 | Water | Grab | NA | | | 40mL Clear NaOH | 1 | SUB Cyanide |
| 05 | POD Grab - 4 | Water | Grab | | | | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 06 | Intake | Water | Composite | To Be Reported from Grabs | | | 40 mL Voa Vial - HCl | 0 | EPA 624 |
| 06 | Intake | Water | Composite | To Be Reported from Grabs | | | 40mL Amber H3PO4+CuSO4 | 0 | SUB Phenols |
| 06 | Intake | Water | Composite | To Be Reported from Grabs | | | 40mL Clear NaOH | 0 | SUB Cyanide |

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

Rcvd in ICE @ 5.8°C

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Document Control #: 453 revision 0

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** FSL - FPL St. Lucie Power Plant
**Project:** FSL - D001 POD Permit Renewal Prc
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 06 | Intake | Water | ~~Composite~~ | | | | 500mL Clear Glass - Unpres | 1 | SUB Low Level Mercury<br>TH 12/22/15 |
| 06 | Intake | Water | Composite | To be Reported from Grabs | | | Amber H2SO4 - 1000mL | 0 | Wet Chem - Oil and Grease |
| 06 | Intake | Water | Composite | | | | Amber Unpres - 1000mL | 2 | EPA 625<br>TH 12/22/15 |
| 06 | Intake | Water | Composite | | | TH 12/22/15 | Plastic 250 mL - HN03 | 1 | ME - Antimony by 200.7<br>ME - Boron by EPA 200.7<br>ME - Molybdenum by EPA 200.7<br>ME - Tin by EPA 200.7<br>ME - Titanium by EPA 200.7 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

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| Received By | Date/Time | Received By | Date/Time |

Page 28 of 38

Document Control #: 453 revision 0

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - D001 POD Permit Renewal Prc | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 06 | Intake | Water | Composite | TH 12/22/15 | | | Poly H2SO4 - 250mL | 1 | Wet Chem - Ammonia _Distilled by EPA 350.1<br>Wet Chem - COD<br>Wet Chem - TKN by EPA 351.2<br>Wet Chem - Total Nitrogen<br>Wet Chem - Total Organic Nitrogen<br>Wet Chem - Total Phosphorus by SM4500-P F |

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

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## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - D001 POD Permit Renewal Prc | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 06 | Intake | Water | Composite | TM 12/22/05 | | | Poly HNO3 - 250 mL | 1 | ME - Arsenic by 200.7<br>ME - Beryllium by 200.7<br>ME - Cadmium by 200.7<br>ME - Chromium by 200.7<br>ME - Copper Total 200.7<br>ME - Iron by 200.7<br>ME - Lead by 200.7<br>ME - Magnesium by 200.7<br>ME - Nickel by 200.7<br>ME - Selenium by 200.7<br>ME - Silver by 200.7<br>ME - Thallium by EPA 200.7<br>ME - Zinc by 200.7 |
| 06 | Intake | Water | Composite | TH 12/22/05 | | | Poly HNO3 - 500mL | 1 | SUB - EPA 900 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

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**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - D001 POD Permit Renewal Prc | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 06 | Intake | Water | Composite | | | | Poly Unpres - 1000mL | 1 | SUB - Color by SM2120B<br>SUB - MBAS by SM5540C<br>SUB CBOD |
| 06 | Intake | Water | Composite | TM | 12/22/15 | | Poly Unpres - 500mL | 1 | Wet Chem - Bromide<br>Wet Chem - Conductivity<br>Wet Chem - Fluoride<br>Wet Chem - Nitrate<br>Wet Chem - Nitrite<br>Wet Chem - Sulfate<br>Wet Chem - TSS |
| 06 | Intake | Water | Composite | | | | VOA Vial - H2SO4 | 2 | SUB - TOC |
| 07 | Intake - Grab 1 | Water | Grab | 12/21/15 | 0900 | JP | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 07 | Intake - Grab 1 | Water | Grab | 12/21/15 | 0900 | JP | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

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Page 31 of 38

Document Control #: 453 revision 0

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - D001 POD Permit Renewal Prc | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 07 | Intake - Grab 1 | Water | Grab | 12/21/15 | 0900 | JP | 40mL Clear NaOH | 1 | SUB Cyanide |
| 07 | Intake - Grab 1 | Water | Grab | 12/21/15 | 0900 | JP | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 07 | Intake - Grab 1 | Water | Grab | [illegible] | | | Poly Na2S2O3 - 125mL (JP) | 1 | SUB - Fecal Coliform by SM9222D Separate COC |
| 08 | Intake - Grab 2 | Water | Grab | 12/21/15 | 1500 | JP | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 08 | Intake - Grab 2 | Water | Grab | 12/21/15 | 1500 | JP | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 08 | Intake - Grab 2 | Water | Grab | 12/21/15 | 1500 | JP | 40mL Clear NaOH | 1 | SUB Cyanide |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

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Page 32 of 38

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - D001 POD Permit Renewal Prc | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 08 | Intake - Grab 2 | Water | Grab | 12/21/15 | 1500 | JP | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 09 | Intake - Grab 3 | Water | Grab | 12/21/15 | 2100 | RC | 40 mL Voa Vial - HCl | 1 | EPA 624 |
| 09 | Intake - Grab 3 | Water | Grab | 12/21/15 | 2100 | RC | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 09 | Intake - Grab 3 | Water | Grab | 12/21/15 | 2100 | RC | 40mL Clear NaOH | 1 | SUB Cyanide |
| 09 | Intake - Grab 3 | Water | Grab | 12/21/15 | 2100 | RC | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 10 | Intake - Grab 4 | Water | Grab | 12/22/15 | 0300 | RC | 40 mL Voa Vial - HCl | 1 | EPA 624 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

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See page 1

Page 33 of 38

Document Control #: 453 revision 0

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - D001 POD Permit Renewal Prc | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 10 | Intake - Grab 4 | Water | Grab | 12/22/15 | 0300 | RC | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 10 | Intake - Grab 4 | Water | Grab | 12/22/15 | 0300 | RC | 40mL Clear NaOH | 1 | SUB Cyanide |
| 10 | Intake - Grab 4 | Water | Grab | 12/22/15 | 0300 | RC | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

Page 34 of 38

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Document Control #: 453 revision 0

15L0380

Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 12/22/15 10:40
Chain of Custody ID: _____
Initials: SO

Central Laboratory

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | Yes | No | N/A | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | N/A | |
| #3. Shipping container in good condition? | Yes | No | None | |
| #4. Chain of Custody (COC) present? | Yes | No | | |
| #5. COC signed when relinquished? | Yes | No | | |
| #6. Samples received in ice? | Yes | No | N/A | |
| If NO? Temp = ____ °C | | | | |
| Temp = > 6°C? Management/customer notified? | Yes | No | Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | Yes | No | | |
| #8. Container label(s) legible and intact? | Yes | No | | |
| #9. Any missing/extra samples? | Yes | No | | |
| #10. COC signed when received? | Yes | No | | |
| #11. Sample analysis instructions complete on COC? | Yes | No | | |
| #12. Sample matrix/properties agree with COC? | Yes | No | | |
| #13. Samples in proper container/bottle? | Yes | No | | |
| #14. Sample container(s) intact? | Yes | No | | |
| #15. Samples have proper chemical preservation? | Yes | No | N/A | pH= |
| If NO? a. Chemical preservation added:_____ | *see note below | | | |
| Lot#:_____ Amount added:_____ | | | | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| b. pH after 24 hours:_____ | | | | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| #16. Sufficient sample amount for indicated test(s)? | Yes | No | | |
| #17. All samples received within sufficient hold time (HT)? | Yes | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration? | Yes | No | N/A | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| #19. Subcontract of sample(s)? | Yes | No | | |
| #20. VOC samples have zero headspace? | Yes | No | N/A | |
| If NO? Bubble size (mm): | | | | |
| Sample ID:____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| #21. Trip blank received where volatiles requested? | Yes | No | N/A | |

Nonconformance Documentation

Customer:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action: Bottles Received with appropriate preservative to be verified by the lab

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

Document Control # 468 Revision 0 07/25/14

FSL0380

# FPL Central Lab
## List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative |
|---|---|---|---|
| Intake-Grab1 | G | 1L | $H_2SO_4$ |
| | | 40mL | HCL |
| | | 125mL | $H_3PO_4 + CuSO_4$ |
| | P | 250mL | NaOH |
| Intake-Grab2 | G | 1L | $H_2SO_4$ |
| | | 40mL | HCL |
| | | 125mL | $H_3PO_4 + CuSO_4$ |
| | P | 250mL | NaOH |
| Intake-Grab3 | G | 1L | $H_2SO_4$ |
| | | 40mL Clear | HCL |
| | | Amber | $H_3PO_4 + CuSO_4$ |
| | | ↓ | NaOH |
| Intake-Grab4 | G | 1L ~~clear~~ | $H_2SO_4$ |
| | | 40mL clear | HCL |
| | | Amber | $H_3PO_4 + CuSO_4$ |
| | | Amber | NaOH |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

# FPL Central Lab

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - D001 POD Permit Renewal Project
**Project Manager:** Phoebe Brown
**Project Number:** PSL

**Report To:**
PSL - FPL St. Lucie Power Plant
Chrissi-lee Williams
6501 South Ocean Drive
Jensen Beach, FL 34957
Phone: (772) 467-7316
Fax: n/a

**Invoice To:**
PSL - FPL St. Lucie Power Plant
Chrissi-lee Williams
6501 South Ocean Drive
Jensen Beach, FL 34957
Phone :(772) 467-7316
Fax: n/a

Date Due: 12/31/2015 00:00 (5 day TAT)
Received By: Tom Helton
Date Received: 12/22/2015 10:25
Logged In By: Tom Helton
Date Logged In: 12/22/2015 11:00

Samples Received at: 5.8°C
All containers intact: Yes
Sample labels/COC agree: Yes
Samples Preserved Properly: Yes
Custody Seals Present: No
Received on Ice Yes
Unpreserved Samples received on ice @ <6 Deg. C Yes
pH Check of chemically perserved samples performed Yes

| Analysis | Due | TAT | Expires | Comments |
|---|---|---|---|---|
| **15L0380-01 Intake I/O:6030002973 [Water] Sampled 12/21/2015 00:00 (GMT-05:00) Eastern Time (US &** | | | | **Results to be reported from compositing Grabs 1 - 4** |
| *A = 40 mL Voa Vial - HCl* | *B = 40mL Amber H3PO4+CuSO4* | *C = 40mL Clear NaOH* | *D = Amber H2SO4 - 1000mL* | |
| Wet Chem - Oil and Grease | 12/31/2015 00:00 | 5 | 01/18/2016 00:00 | |
| **15L0380-02 Intake - Grab 1 I/O:6030002973 [Water] Sampled 12/21/2015 09:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 125mL Amber H3PO4+CuSO4* | *C = Poly NaOH - 250mL* | *D = Amber H2SO4 - 1000mL* | |
| Wet Chem - Oil and Grease | 12/31/2015 00:00 | 5 | 01/18/2016 09:00 | |
| **15L0380-03 Intake - Grab 2 I/O:6030002973 [Water] Sampled 12/21/2015 15:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 125mL Amber H3PO4+CuSO4* | *C = Poly NaOH - 250mL* | *D = Amber H2SO4 - 1000mL* | |
| Wet Chem - Oil and Grease | 12/31/2015 00:00 | 5 | 01/18/2016 15:00 | |
| **15L0380-04 Intake - Grab 3 I/O:6030002973 [Water] Sampled 12/21/2015 21:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 40mL Amber H3PO4+CuSO4* | *C = 40mL Clear NaOH* | *D = Amber H2SO4 - 1000mL* | |
| Wet Chem - Oil and Grease | 12/31/2015 00:00 | 5 | 01/18/2016 21:00 | |
| **15L0380-05 Intake - Grab 4 I/O:6030002973 [Water] Sampled 12/22/2015 03:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 40mL Amber H3PO4+CuSO4* | *C = 40mL Clear NaOH* | *D = Amber H2SO4 - 1000mL* | |
| Wet Chem - Oil and Grease | 12/31/2015 00:00 | 5 | 01/19/2016 03:00 | |

WORK OR

15L0380

Printed: 12/22/2015 11:12:17AM

**FPL Central Lab**

| | | | |
|---|---|---|---|
| **Client:** | **PSL - FPL St. Lucie Power Plant** | **Project Manager:** | **Phoebe Brown** |
| **Project:** | **PSL - D001 POD Permit Renewal Project** | **Project Number:** | **PSL** |

| Analysis | Due | TAT | Expires | Comments |
|---|---|---|---|---|
| **Florida-Spectrum Environmental Services, Inc.** | | | | |
| **15L0380-01 Intake I/O:6030002973 [Water] Sampled 12/21/2015 00:00 (GMT-05:00) Eastern Time (US &** | | | | **Results to be reported from compositing Grabs 1 - 4** |
| EPA 624 | 12/31/2015 00:00 | 5 | 01/04/2016 00:00 | |
| SUB Cyanide | 12/31/2015 00:00 | 5 | 01/04/2016 00:00 | |
| SUB Phenols | 12/31/2015 00:00 | 5 | 01/18/2016 00:00 | |
| **15L0380-02 Intake - Grab 1 I/O:6030002973 [Water] Sampled 12/21/2015 09:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 125mL Amber H3PO4+CuSO4* | *C = Poly NaOH - 250mL* | | |
| EPA 624 | 12/31/2015 00:00 | 5 | 01/04/2016 09:00 | |
| SUB Cyanide | 12/31/2015 00:00 | 5 | 01/04/2016 09:00 | |
| SUB Phenols | 12/31/2015 00:00 | 5 | 01/18/2016 09:00 | |
| **15L0380-03 Intake - Grab 2 I/O:6030002973 [Water] Sampled 12/21/2015 15:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 125mL Amber H3PO4+CuSO4* | *C = Poly NaOH - 250mL* | | |
| EPA 624 | 12/31/2015 00:00 | 5 | 01/04/2016 15:00 | |
| SUB Cyanide | 12/31/2015 00:00 | 5 | 01/04/2016 15:00 | |
| SUB Phenols | 12/31/2015 00:00 | 5 | 01/18/2016 15:00 | |
| **15L0380-04 Intake - Grab 3 I/O:6030002973 [Water] Sampled 12/21/2015 21:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 40mL Amber H3PO4+CuSO4* | *C = 40mL Clear NaOH* | | |
| EPA 624 | 12/31/2015 00:00 | 5 | 01/04/2016 21:00 | |
| SUB Cyanide | 12/31/2015 00:00 | 5 | 01/04/2016 21:00 | |
| SUB Phenols | 12/31/2015 00:00 | 5 | 01/18/2016 21:00 | |
| **15L0380-05 Intake - Grab 4 I/O:6030002973 [Water] Sampled 12/22/2015 03:00 (GMT-05:00) Eastern Time (US &** | | | | |
| *A = 40 mL Voa Vial - HCl* | *B = 40mL Amber H3PO4+CuSO4* | *C = 40mL Clear NaOH* | | |
| EPA 624 | 12/31/2015 00:00 | 5 | 01/05/2016 03:00 | |
| SUB Cyanide | 12/31/2015 00:00 | 5 | 01/05/2016 03:00 | |
| SUB Phenols | 12/31/2015 00:00 | 5 | 01/19/2016 03:00 | |

# LABORATORY RESULTS – OUTFALL I-003

(FORM 2CS)

# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Subcontracted Analyses** | | | | | | | | | | | | | |
| **Phenolics** | **0.900** | | | 0.0680 | 0.204 | mg/L | 1 | 1601638 | 2/3/2016 16:01 | SUB | 2/3/2016 16:01 | EPA 420.1 | |
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Classical Chemistry Parameters** | | | | | | | | | | | | | |
| Oil & Grease (HEM) | U | | | 1.30 | 3.90 | mg/L | 1 | 1602150 | 2/2/2016 10:00 | DGK | 2/2/2016 14:00 | 1664 | |
| **Gross Alpha Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Alpha** | **3.04±0.91** | I | | 3.04 | 9.12 | pCi/L | 1 | 1602134 | 2/2/2016 11:00 | IN | 2/8/2016 11:35 | EPA 900.0 | |
| **Gross Beta Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Beta** | **10.5±0.97** | | | 2.96 | 8.88 | pCi/L | 1 | 1602134 | 2/2/2016 11:00 | IN | 2/8/2016 11:35 | EPA 900.0 | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| Antimony | U | | | 1.94 | 5.82 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Arsenic | U | | | 1.490 | 4.470 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| **Beryllium** | **0.407** | I | | 0.170 | 0.510 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| **Boron** | **750000** | J-3 | | 800 | 2400 | ug/L | 1000 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 17:29 | EPA 200.7 | |
| Cadmium | U | | | 0.130 | 0.390 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Chromium | U | | | 0.840 | 2.52 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| **Copper** | **1.20** | I | | 0.650 | 1.95 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| **Iron** | **8.19** | | | 2.00 | 6.00 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Lead | U | | | 1.400 | 4.200 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Magnesium | U | | | 1.590 | 4.770 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Molybdenum | U | | | 1.09 | 3.27 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Nickel | U | | | 0.660 | 1.98 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| Selenium | U | | | 1.22 | 3.66 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Silver | U | | | 0.180 | 0.540 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| **Thallium** | **2.28** | I | | 2.05 | 6.15 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| Tin | U | | | 6.00 | 18.0 | ug/L | 1 | 1601789 | 1/28/2016 10:00 | MAZ | 1/29/2016 9:07 | EPA 200.7 | |
| **Titanium** | **6.98** | | | 0.120 | 0.360 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| **Zinc** | **5.65** | | | 0.720 | 2.16 | ug/L | 1 | 1601750 | 1/28/2016 10:45 | IN | 1/28/2016 15:06 | EPA 200.7 | |
| **Microbiology** | | | | | | | | | | | | | |
| Carbonaceous BOD | U | | | 2.00 | 6.00 | mg/L | 1 | 1601773 | 1/28/2016 15:00 | SC | 2/2/2016 15:00 | CBOD SM5210B | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | | 1.27 | 3.81 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 1,2-Dichlorobenzene | U | | | 1.02 | 3.06 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | | 0.660 | 1.98 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 1,3-Dichlorobenzene | U | | | 1.24 | 3.72 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 1,4-Dichlorobenzene | U | | | 1.18 | 3.54 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,3-Dichloroaniline | U | | | 0.510 | 1.53 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,4,5-Trichlorophenol | U | | | 0.680 | 2.04 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,4,6-Trichlorophenol | U | | | 0.560 | 1.68 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,4-Dichlorophenol | U | | | 0.630 | 1.89 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,4-Dimethylphenol | U | | | 0.490 | 1.47 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,4-Dinitrophenol | U | | | 0.160 | 0.480 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,4-Dinitrotoluene | U | | | 0.300 | 0.900 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,6-Dichlorophenol | U | | | 0.237 | 0.712 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2,6-Dinitrotoluene | U | | | 0.520 | 1.56 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

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02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 2-Chloronaphthalene | U | | | 0.550 | 1.65 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2-Chlorophenol | U | | | 0.890 | 2.67 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2-Methylnaphthalene | U | | | 0.0240 | 0.0720 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2-Methylphenol | U | | | 0.820 | 2.46 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 2-Nitrophenol | U | | | 0.880 | 2.64 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 3,3'-Dichlorobenzidine | U | | | 0.310 | 0.930 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 4,6-Dinitro-2-methylphenol | U | | | 0.270 | 0.810 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 4-Bromophenyl phenyl ether | U | | | 0.530 | 1.59 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 4-Chloro-3-methylphenol | U | | | 0.930 | 2.79 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 4-Chlorophenyl phenyl ether | U | | | 0.580 | 1.74 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| 4-Nitrophenol | U | | | 0.700 | 2.10 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Acenaphthene | U | | | 0.490 | 1.47 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

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6001A Village Blvd.
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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| Acenaphthylene | U | | | 0.640 | 1.92 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Aniline | U | | | 0.890 | 2.67 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Anthracene | U | | | 0.500 | 1.50 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| a-Terpineol | U | | | 0.336 | 1.01 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Benzidine | U | | | 0.260 | 0.780 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Benzo (a) anthracene | U | | | 0.180 | 0.540 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Benzo (a) pyrene | U | | | 0.280 | 0.840 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Benzo (b) fluoranthene | U | | | 0.260 | 0.780 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Benzo (g,h,i) perylene | U | | | 0.210 | 0.630 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Benzo (k) fluoranthene | U | | | 0.480 | 1.44 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Bis(2-chloroethoxy)methane | U | | | 0.580 | 1.74 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Bis(2-chloroethyl)ether | U | | | 0.820 | 2.46 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| Bis(2-chloroisopropyl)ether | U | | | 0.970 | 2.91 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Bis(2-ethylhexyl)phthalate | U | | | 1.32 | 3.96 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Butyl benzyl phthalate | U | | | 0.190 | 0.570 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Chrysene | U | | | 0.300 | 0.900 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Dibenz (a,h) anthracene | U | | | 0.160 | 0.580 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Dibenzofuran | U | | | 0.480 | 1.44 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Diethyl phthalate | U | | | 0.200 | 0.600 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Dimethyl phthalate | U | | | 0.290 | 0.870 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Di-n-butyl phthalate | U | | | 0.240 | 0.720 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Di-n-octyl phthalate | U | | | 0.170 | 0.510 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Fluoranthene | U | | | 0.280 | 0.840 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Fluorene | U | | | 0.520 | 1.56 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |

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FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| Hexachlorobenzene | U | | | 0.520 | 1.56 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Hexachlorobutadiene | U | | | 0.530 | 1.59 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Hexachlorocyclopentadiene | U | | | 0.690 | 2.07 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Hexachloroethane | U | | | 0.810 | 2.43 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Indeno (1,2,3-cd) pyrene | U | | | 0.150 | 0.450 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Isophorone | U | | | 0.680 | 2.04 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| m,p Cresol | U | | | 0.329 | 0.987 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Naphthalene | U | | | 0.700 | 2.10 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| n-Decane | U | | | 0.244 | 0.733 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Nitrobenzene | U | | | 0.770 | 2.31 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| N-Nitrosodimethylamine | U | | | 1.11 | 3.33 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| N-Nitrosodi-n-propylamine | U | | | 1.10 | 3.30 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| N-Nitrosodiphenylamine | U | | | 0.380 | 1.14 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| n-Octadecane | U | | | 1.59 | 4.78 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Pentachlorophenol | U | | | 0.320 | 0.960 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Phenanthrene | U | | | 0.450 | 1.35 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Phenol | U | | | 0.580 | 1.74 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Pyrene | U | | | 0.220 | 0.660 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| Pyridine | U | | | 0.530 | 1.59 | ug/L | 1 | 1602018 | 2/1/2016 11:23 | AC | 2/2/2016 2:11 | EPA 625 | |
| *Surrogate: 2,4,6-Tribromophenol* | | | | | *82.7 %* | | *50-150* | *1602018* | *2/1/2016 11:23* | | *2/2/2016 2:11* | *EPA 625* | |
| *Surrogate: 2-Fluorobiphenyl* | | | | | *65.7 %* | | *50-150* | *1602018* | *2/1/2016 11:23* | | *2/2/2016 2:11* | *EPA 625* | |
| *Surrogate: 2-Fluorophenol* | | | | | *55.7 %* | | *30-110* | *1602018* | *2/1/2016 11:23* | | *2/2/2016 2:11* | *EPA 625* | |
| *Surrogate: Nitrobenzene-d5* | | | | | *64.8 %* | | *50-150* | *1602018* | *2/1/2016 11:23* | | *2/2/2016 2:11* | *EPA 625* | |
| *Surrogate: Phenol-d6* | | | | | *39.1 %* | | *30-110* | *1602018* | *2/1/2016 11:23* | | *2/2/2016 2:11* | *EPA 625* | |

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

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**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| *Surrogate: p-Terphenyl* | | | | *74.7 %* | *50-150* | | | *1602018* | *2/1/2016 11:23* | | *2/2/2016 2:11* | *EPA 625* | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | U | | | 0.0840 | 0.237 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,1,1-Trichloroethane | U | | | 0.0380 | 0.113 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,1,2,2-Tetrachloroethane | U | | | 0.0690 | 0.207 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,1,2-Trichloroethane | U | | | 0.0750 | 0.226 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,1-Dichloroethane | U | | | 0.204 | 0.612 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,1-Dichloroethene | U | | | 0.0590 | 0.176 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,1-Dichloropropene | U | | | 0.120 | 0.359 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2,3-Trichlorobenzene | U | | | 0.250 | 0.751 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2,3-Trichloropropane | U | | | 0.122 | 0.366 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2,4-Trichlorobenzene | U | | | 0.248 | 0.745 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |

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Attn: Chrissi-lee Williams

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**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,2,4-Trimethylbenzene | U | | | 0.211 | 0.633 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2-Dibromo-3-chloropropane | U | | | 0.236 | 0.708 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2-Dibromoethane (EDB) | U | | | 0.0710 | 0.213 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2-Dichlorobenzene | U | | | 0.193 | 0.580 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2-Dichloroethane | U | | | 0.0360 | 0.109 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,2-Dichloropropane | U | | | 0.0450 | 0.136 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,3,5-Trimethylbenzene | U | | | 0.135 | 0.405 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,3-Dichlorobenzene | U | | | 0.195 | 0.585 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,3-Dichloropropane | U | | | 0.0730 | 0.220 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 1,4-Dichlorobenzene | U | | | 0.257 | 0.770 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 2,2-Dichloropropane | U | J-2 | | 0.401 | 1.20 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 2-Butanone (Methyl Ethyl Ketone) | U | | | 0.299 | 0.898 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |

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NELAC Certification #: E56078

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02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 2-Chloroethylvinyl ether | U | | | 0.745 | 2.24 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 2-Chlorotoluene | U | | | 0.129 | 0.388 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 2-Hexanone | U | J-2 | | 0.445 | 1.34 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 4-Chlorotoluene | U | | | 0.140 | 0.420 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| 4-Methyl-2-pentanone | U | | | 0.135 | 0.405 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Acetone | U | | | 0.277 | 0.832 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Acrolein | U | J-2 | | 0.303 | 0.909 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Acrylonitrile | U | | | 0.160 | 0.479 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Benzene | U | | | 0.0300 | 0.0900 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Bromobenzene | U | | | 0.113 | 0.340 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Bromochloromethane | U | | | 0.0570 | 0.172 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Bromodichloromethane | U | | | 0.0860 | 0.258 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |

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**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Bromoform | U | | | 0.138 | 0.414 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Bromomethane | U | | | 0.132 | 0.397 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Carbon Tetrachloride | U | | | 0.0520 | 0.156 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Chlorobenzene | U | | | 0.0790 | 0.237 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Chloroethane | U | | | 0.308 | 0.924 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Chloroform | U | | | 0.0770 | 0.232 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Chloromethane | U | | | 0.0480 | 0.144 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| cis-1,2-Dichloroethene | U | | | 0.213 | 0.639 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| cis-1,3-Dichloropropene | U | | | 0.0500 | 0.151 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Dibromochloromethane | U | | | 0.0660 | 0.199 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Dibromomethane | U | | | 0.0570 | 0.171 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Dichlorodifluoromethane | U | | | 0.0940 | 0.283 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Ethyl Benzene | U | | | 0.0840 | 0.252 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Hexachlorobutadiene | U | | | 0.141 | 0.424 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Isopropylbenzene | U | | | 0.116 | 0.348 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| m,p-Xylene | U | | | 0.168 | 0.505 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Methylene Chloride | U | | | 0.751 | 2.25 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Methyl-tert-butyl ether | U | | | 0.0860 | 0.257 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Naphthalene | U | | | 0.579 | 1.74 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| n-Butyl Benzene | U | | | 0.266 | 0.798 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| n-Propylbenzene | U | | | 0.109 | 0.328 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| o-Xylene | U | | | 0.0840 | 0.253 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| p-Isopropyltoluene | U | | | 0.197 | 0.592 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| sec-Butyl Benzene | U | | | 0.177 | 0.531 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Styrene | U | | | 0.0960 | 0.287 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| tert-Butylbenzene | U | | | 0.193 | 0.578 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Tetrachloroethene | U | | | 0.0840 | 0.253 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| **Toluene** | **0.750** | | | 0.0350 | 0.104 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| trans-1,2-Dichloroethene | U | | | 0.107 | 0.320 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| trans-1,3-Dichloropropene | U | | | 0.250 | 0.751 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Trichloroethene | U | | | 0.0500 | 0.151 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Trichlorofluoromethane | U | | | 0.0700 | 0.211 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| Vinyl chloride | U | | | 0.0840 | 0.253 | ug/L | 1 | 1602036 | 2/1/2016 16:19 | BBL | 2/2/2016 16:29 | EPA 624 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | | | *73.2 %* | | *50-110* | *1602036* | *2/1/2016 16:19* | | *2/2/2016 16:29* | *EPA 624* | |
| *Surrogate: 2-Bromo-1-chloropropane* | | | | | *88.4 %* | | *74-110* | *1602036* | *2/1/2016 16:19* | | *2/2/2016 16:29* | *EPA 624* | |
| *Surrogate: 4-Bromofluorobenzene* | | | | | *85.2 %* | | *46-125* | *1602036* | *2/1/2016 16:19* | | *2/2/2016 16:29* | *EPA 624* | |

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6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| Ammonia as N | U | | | 0.0140 | 0.0420 | mg/L | 1 | 1602091 | 2/2/2016 13:38 | YBR | 2/2/2016 13:38 | EPA 350.1 | |
| **Bromide** | **0.451** | | | 0.0690 | 0.206 | mg/L | 1 | 1601787 | 1/28/2016 18:31 | DGK | 1/28/2016 18:31 | EPA 300.0 | |
| **Chemical Oxygen Demand** | **18.7** | I | | 7.00 | 21.0 | mg/L | 1 | 1601757 | 1/28/2016 12:45 | NL | 1/28/2016 15:00 | EPA 410.4 | |
| Color | 0/5.00 | | | 1.00 | 3.00 | Pt-Co | 1 | 1601744 | 1/28/2016 11:00 | NL | 1/28/2016 11:00 | SM 2120B | |
| **Conductivity** | **3.82** | | | 1.00 | 3.00 | uS/cm | 1 | 1602051 | 2/2/2016 11:00 | NL | 2/2/2016 11:00 | EPA 120.1 | |
| Cyanide (total) | U | | | 0.00230 | 0.00690 | mg/L | 1 | 1601793 | 1/29/2016 16:45 | SA | 1/29/2016 17:38 | EPA 335.4 | |
| Fluoride | U | | | 0.0210 | 0.0630 | mg/L | 1 | 1601787 | 1/28/2016 18:31 | DGK | 1/28/2016 18:31 | EPA 300.0 | |
| MBAS as LAS, mol wt. 340 | U | | | 0.0603 | 0.181 | mg/L | 1 | 1601786 | 1/29/2016 9:30 | SA | 1/29/2016 9:30 | SM5540C | |
| **Nitrate as N** | **0.120** | I | | 0.0870 | 0.260 | mg/L | 1 | 1601787 | 1/28/2016 18:31 | DGK | 1/28/2016 18:31 | EPA 300.0 | |
| Nitrite as N | U | | | 0.0480 | 0.150 | mg/L | 1 | 1601787 | 1/28/2016 18:31 | DGK | 1/28/2016 18:31 | EPA 300.0 | |
| Phosphorus-Total | U | | | 0.0640 | 0.192 | mg/L | 1 | 1602138 | 2/3/2016 11:05 | YBR | 2/3/2016 15:32 | EPA 365.4 | |
| **Sulfate** | **0.915** | I | | 0.335 | 1.00 | mg/L | 1 | 1601787 | 1/28/2016 18:31 | DGK | 1/28/2016 18:31 | EPA 300.0 | |

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Total Kjeldahl Nitrogen** | **0.111** | I | | 0.0700 | 0.210 | mg/L | 1 | 1602138 | 2/3/2016 11:05 | YBR | 2/3/2016 15:32 | EPA 351.2 | |
| **Total Nitrogen** | **0.231** | | | | | mg/L | 1 | 1602138 | 2/4/2016 10:00 | YBR | 2/4/2016 10:00 | TKN + NOX | |
| Total Organic Carbon | U | | | 0.168 | 0.504 | mg/L | 1 | 1601733 | 1/28/2016 12:38 | SA | 1/28/2016 12:38 | TOC SM 5310C | |
| **Total Organic Nitrogen** | **0.111** | | | | | mg/L | 1 | 1602138 | 2/4/2016 10:00 | YBR | 2/4/2016 10:00 | TKN - NH3 | |
| Total Suspended Solids | U | | | 1.00 | 3.00 | mg/L | 1 | 1601790 | 1/28/2016 14:30 | DL | 1/29/2016 13:47 | TSS SM 2540D | |
| **Analyzed at: Jupiter Environmental Labs TNI # E86546** | | | | | | | | | | | | | |
| **Subcontracted Analyses** | | | | | | | | | | | | | |
| Mercury | ND | | | 0.000250 | 0.00100 | ug/L | 1 | 1601638 | 1/28/2016 16:59 | SUB | 2/3/2016 14:03 | EPA 1631E | |

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**Client Sample ID: I-003 (LRW)**
**Client Sample ID (cont):**
**Sampled: 1/27/2016 12:00:00PM Received: 1/27/2016 5:30:00PM**
**Lab Sample #: 16B0097-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Classical Chemistry Parameters - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602150 - 1664** | | | | | | | | | | | |
| **Blank (1602150-BLK1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Oil & Grease (HEM) | U | | 1.30 | 3.90 | mg/L | | | | - | | |
| **LCS (1602150-BS1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Oil & Grease (HEM) | 95.0 | | 1.30 | 3.90 | mg/L | 100.0 | | 95.0 | 78-114 | | |
| **LCS Dup (1602150-BSD1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Oil & Grease (HEM) | 94.0 | | 1.30 | 3.90 | mg/L | 100.0 | | 94.0 | 78-114 | 1.06 | 18 |
| **Matrix Spike (1602150-MS1)** | **Source: 16A0727-02** | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Oil & Grease (HEM) | 92.7 | | 1.30 | 3.90 | mg/L | 100.0 | U | 92.7 | 78-114 | | |
| **Matrix Spike Dup (1602150-MSD1)** | **Source: 16A0727-02** | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Oil & Grease (HEM) | 93.7 | | 1.30 | 3.90 | mg/L | 100.0 | U | 93.7 | 78-114 | 1.07 | 18 |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Gross Alpha Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602134 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1602134-BLK1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | U | | 1.14 | 3.42 | pCi/L | | | | - | | |
| **LCS (1602134-BS1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 795 | | 2.34 | 7.02 | pCi/L | 1000 | | 79.5 | 60-125 | | |
| **LCS Dup (1602134-BSD1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 766 | | 2.52 | 7.56 | pCi/L | 1000 | | 76.6 | 60-125 | 3.72 | 25 |
| **Matrix Spike (1602134-MS1)** | | **Source: 16A0554-01** | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 827 | | 2.21 | 6.63 | pCi/L | 1000 | 0.79±0.24 | 82.7 | 60-125 | | |
| **Matrix Spike Dup (1602134-MSD1)** | | **Source: 16A0554-01** | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 731 | | 1.86 | 5.58 | pCi/L | 1000 | 0.79±0.24 | 73.1 | 60-125 | 12.3 | 25 |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Gross Beta Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602134 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1602134-BLK1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Beta | U | | 1.57 | 4.71 | pCi/L | | | | - | | |
| **LCS (1602134-BS1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Beta | 958 | | 4.03 | 12.1 | pCi/L | 1000 | | 95.8 | 0-200 | | |
| **LCS Dup (1602134-BSD1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Beta | 999 | | 4.29 | 12.9 | pCi/L | 1000 | | 99.9 | 0-200 | 4.19 | 200 |
| **Matrix Spike (1602134-MS1)** | | **Source: 16A0554-01** | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Beta | 237 | | 3.58 | 10.7 | pCi/L | 250.0 | 1.56±0.47 | 94.8 | 0-200 | | |
| **Matrix Spike Dup (1602134-MSD1)** | | **Source: 16A0554-01** | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Beta | 211 | | 3.72 | 11.2 | pCi/L | 250.0 | 1.56±0.47 | 84.4 | 0-200 | 11.6 | 200 |

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**Reported:**
02/09/2016 11:51

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601750 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601750-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Antimony | U | | 1.94 | 5.82 | ug/L | | | | - | | |
| Arsenic | U | | 1.490 | 4.470 | ug/L | | | | - | | |
| Beryllium | U | | 0.170 | 0.510 | ug/L | | | | - | | |
| Boron | U | | 0.800 | 2.40 | ug/L | | | | - | | |
| Cadmium | U | | 0.130 | 0.390 | ug/L | | | | - | | |
| Chromium | U | | 0.840 | 2.52 | ug/L | | | | - | | |
| Copper | U | | 0.650 | 1.95 | ug/L | | | | - | | |
| Iron | U | | 2.00 | 6.00 | ug/L | | | | - | | |
| Lead | U | | 1.400 | 4.200 | ug/L | | | | - | | |
| Magnesium | U | | 1.590 | 4.770 | ug/L | | | | - | | |
| Molybdenum | U | | 1.09 | 3.27 | ug/L | | | | - | | |
| Nickel | U | | 0.660 | 1.98 | ug/L | | | | - | | |
| Selenium | U | | 1.22 | 3.66 | ug/L | | | | - | | |
| Silver | U | | 0.180 | 0.540 | ug/L | | | | - | | |
| Thallium | U | | 2.05 | 6.15 | ug/L | | | | - | | |
| Titanium | U | | 0.120 | 0.360 | ug/L | | | | - | | |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601750 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601750-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Zinc | U | | 0.720 | 2.16 | ug/L | | | | - | | |
| **LCS (1601750-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Antimony | 1006 | | 1.94 | 5.82 | ug/L | 1000 | | 101 | 85-115 | | |
| Arsenic | 1021 | | 1.490 | 4.470 | ug/L | 1000 | | 102 | 85-115 | | |
| Beryllium | 1022 | | 0.170 | 0.510 | ug/L | 1000 | | 102 | 85-115 | | |
| Boron | 1027 | | 0.800 | 2.40 | ug/L | 1000 | | 103 | 85-115 | | |
| Cadmium | 1008 | | 0.130 | 0.390 | ug/L | 1000 | | 101 | 85-115 | | |
| Chromium | 1001 | | 0.840 | 2.52 | ug/L | 1000 | | 100 | 85-115 | | |
| Copper | 1017 | | 0.650 | 1.95 | ug/L | 1000 | | 102 | 85-115 | | |
| Iron | 983.6 | | 2.00 | 6.00 | ug/L | 1000 | | 98.4 | 85-115 | | |
| Lead | 1030 | | 1.400 | 4.200 | ug/L | 1000 | | 103 | 85-115 | | |
| Magnesium | 985.7 | | 1.590 | 4.770 | ug/L | 1000 | | 98.6 | 85-115 | | |
| Molybdenum | 1048 | | 1.09 | 3.27 | ug/L | 1000 | | 105 | 85-115 | | |
| Nickel | 1012 | | 0.660 | 1.98 | ug/L | 1000 | | 101 | 85-115 | | |
| Selenium | 1015 | | 1.22 | 3.66 | ug/L | 1000 | | 101 | 85-115 | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601750 - EPA 200.7** | | | | | | | | | | | |
| **LCS (1601750-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Silver | 977.8 | | 0.180 | 0.540 | ug/L | 1000 | | 97.8 | 85-115 | | |
| Thallium | 1087 | | 2.05 | 6.15 | ug/L | 1000 | | 109 | 85-115 | | |
| Titanium | 1013 | | 0.120 | 0.360 | ug/L | 1000 | | 101 | 85-115 | | |
| Zinc | 1002 | | 0.720 | 2.16 | ug/L | 1000 | | 100 | 85-115 | | |
| **Matrix Spike (1601750-MS1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Antimony | 1053 | | 1.94 | 5.82 | ug/L | 1000 | U | 105 | 70-130 | | |
| Arsenic | 1009 | | 1.490 | 4.470 | ug/L | 1000 | U | 101 | 70-130 | | |
| Beryllium | 1002 | | 0.170 | 0.510 | ug/L | 1000 | 0.4073 | 100 | 70-130 | | |
| Boron | 554600 | J-3, | 0.800 | 2.40 | ug/L | 1000 | 750500 | NR | 70-130 | | |
| Cadmium | 976.7 | | 0.130 | 0.390 | ug/L | 1000 | U | 97.7 | 70-130 | | |
| Chromium | 1009 | | 0.840 | 2.52 | ug/L | 1000 | U | 101 | 70-130 | | |
| Copper | 988.4 | | 0.650 | 1.95 | ug/L | 1000 | 1.200 | 98.7 | 70-130 | | |
| Iron | 999.3 | | 2.00 | 6.00 | ug/L | 1000 | 8.189 | 99.1 | 70-130 | | |
| Lead | 957.5 | | 1.400 | 4.200 | ug/L | 1000 | U | 95.8 | 70-130 | | |
| Magnesium | 903.1 | | 1.590 | 4.770 | ug/L | 1000 | U | 90.3 | 70-130 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601750 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (1601750-MS1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Molybdenum | 1040 | | 1.09 | 3.27 | ug/L | 1000 | U | 104 | 70-130 | | |
| Nickel | 974.0 | | 0.660 | 1.98 | ug/L | 1000 | U | 97.4 | 70-130 | | |
| Selenium | 957.8 | | 1.22 | 3.66 | ug/L | 1000 | U | 95.8 | 70-130 | | |
| Silver | 974.4 | | 0.180 | 0.540 | ug/L | 1000 | U | 97.4 | 70-130 | | |
| Thallium | 997.0 | | 2.05 | 6.15 | ug/L | 1000 | 2.280 | 99.5 | 70-130 | | |
| Titanium | 1023 | | 0.120 | 0.360 | ug/L | 1000 | 6.983 | 102 | 70-130 | | |
| Zinc | 972.3 | | 0.720 | 2.16 | ug/L | 1000 | 5.655 | 96.7 | 70-130 | | |
| **Matrix Spike Dup (1601750-MSD1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Antimony | 1046 | | 1.94 | 5.82 | ug/L | 1000 | U | 105 | 70-130 | 0.704 | 20 |
| Arsenic | 1010 | | 1.490 | 4.470 | ug/L | 1000 | U | 101 | 70-130 | 0.0555 | 20 |
| Beryllium | 997.2 | | 0.170 | 0.510 | ug/L | 1000 | 0.4073 | 99.7 | 70-130 | 0.490 | 20 |
| Boron | 551700 | J-3, | 0.800 | 2.40 | ug/L | 1000 | 750500 | NR | 70-130 | NR | 20 |
| Cadmium | 973.5 | | 0.130 | 0.390 | ug/L | 1000 | U | 97.4 | 70-130 | 0.328 | 20 |
| Chromium | 1004 | | 0.840 | 2.52 | ug/L | 1000 | U | 100 | 70-130 | 0.459 | 20 |
| Copper | 983.5 | | 0.650 | 1.95 | ug/L | 1000 | 1.200 | 98.2 | 70-130 | 0.499 | 20 |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16B0097

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601750 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (1601750-MSD1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Iron | 980.2 | | 2.00 | 6.00 | ug/L | 1000 | 8.189 | 97.2 | 70-130 | 1.92 | 20 |
| Lead | 955.8 | | 1.400 | 4.200 | ug/L | 1000 | U | 95.6 | 70-130 | 0.181 | 20 |
| Magnesium | 897.3 | | 1.590 | 4.770 | ug/L | 1000 | U | 89.7 | 70-130 | 0.646 | 20 |
| Molybdenum | 1058 | | 1.09 | 3.27 | ug/L | 1000 | U | 106 | 70-130 | 1.68 | 20 |
| Nickel | 972.6 | | 0.660 | 1.98 | ug/L | 1000 | U | 97.3 | 70-130 | 0.147 | 20 |
| Selenium | 954.0 | | 1.22 | 3.66 | ug/L | 1000 | U | 95.4 | 70-130 | 0.394 | 20 |
| Silver | 962.1 | | 0.180 | 0.540 | ug/L | 1000 | U | 96.2 | 70-130 | 1.28 | 20 |
| Thallium | 928.7 | | 2.05 | 6.15 | ug/L | 1000 | 2.280 | 92.6 | 70-130 | 7.11 | 20 |
| Titanium | 1024 | | 0.120 | 0.360 | ug/L | 1000 | 6.983 | 102 | 70-130 | 0.132 | 20 |
| Zinc | 962.9 | | 0.720 | 2.16 | ug/L | 1000 | 5.655 | 95.7 | 70-130 | 0.975 | 20 |
| **Batch 1601789 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601789-BLK1)** | | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |
| Tin | U | | 6.00 | 18.0 | ug/L | | | | - | | |
| **LCS (1601789-BS1)** | | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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**Reported:**
02/09/2016 11:51

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601789 - EPA 200.7** | | | | | | | | | | | |
| **LCS (1601789-BS1)** | | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |
| Tin | 989 | | 6.00 | 18.0 | ug/L | 1000 | | 98.9 | 85-115 | | |
| **Matrix Spike (1601789-MS1)** | **Source: 16B0097-01** | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |
| Tin | 975 | | 6.00 | 18.0 | ug/L | 1000 | U | 97.5 | 70-130 | | |
| **Matrix Spike Dup (1601789-MSD1)** | **Source: 16B0097-01** | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |
| Tin | 968 | | 6.00 | 18.0 | ug/L | 1000 | U | 96.8 | 70-130 | 0.706 | 20 |

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FPL Central Lab

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601773 - CBOD SM5210B** | | | | | | | | | | | |
| **Blank (1601773-BLK1)** | | | Prepared: 01/28/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Carbonaceous BOD | U | | 2.00 | 6.00 | mg/L | | | | - | | |
| **LCS (1601773-BS1)** | | | Prepared: 01/28/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Carbonaceous BOD | 176 | | 2.00 | 6.00 | mg/L | 198.0 | | 88.9 | 85-115 | | |
| **LCS Dup (1601773-BSD1)** | | | Prepared: 01/28/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Carbonaceous BOD | 182 | | 2.00 | 6.00 | mg/L | 198.0 | | 91.9 | 85-115 | 3.35 | 20 |

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FPL Central Lab

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**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Blank (1602018-BLK1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | 1.27 | 3.81 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | U | | 1.02 | 3.06 | ug/L | | | | - | | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | 0.660 | 1.98 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | U | | 1.24 | 3.72 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | U | | 1.18 | 3.54 | ug/L | | | | - | | |
| 2,3-Dichloroaniline | U | | 0.510 | 1.53 | ug/L | | | | - | | |
| 2,4,5-Trichlorophenol | U | | 0.680 | 2.04 | ug/L | | | | - | | |
| 2,4,6-Trichlorophenol | U | | 0.560 | 1.68 | ug/L | | | | - | | |
| 2,4-Dichlorophenol | U | | 0.630 | 1.89 | ug/L | | | | - | | |
| 2,4-Dimethylphenol | U | | 0.490 | 1.47 | ug/L | | | | - | | |
| 2,4-Dinitrophenol | U | | 0.160 | 0.480 | ug/L | | | | - | | |
| 2,4-Dinitrotoluene | U | | 0.300 | 0.900 | ug/L | | | | - | | |
| 2,6-Dichlorophenol | U | | 0.237 | 0.712 | ug/L | | | | - | | |
| 2,6-Dinitrotoluene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| 2-Chloronaphthalene | U | | 0.550 | 1.65 | ug/L | | | | - | | |
| 2-Chlorophenol | U | | 0.890 | 2.67 | ug/L | | | | - | | |

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Blank (1602018-BLK1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 2-Methylnaphthalene | U | | 0.0240 | 0.0720 | ug/L | | | | - | | |
| 2-Methylphenol | U | | 0.820 | 2.46 | ug/L | | | | - | | |
| 2-Nitrophenol | U | | 0.880 | 2.64 | ug/L | | | | - | | |
| 3,3'-Dichlorobenzidine | U | | 0.310 | 0.930 | ug/L | | | | - | | |
| 4,6-Dinitro-2-methylphenol | U | | 0.270 | 0.810 | ug/L | | | | - | | |
| 4-Bromophenyl phenyl ether | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| 4-Chloro-3-methylphenol | U | | 0.930 | 2.79 | ug/L | | | | - | | |
| 4-Chlorophenyl phenyl ether | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| 4-Nitrophenol | U | | 0.700 | 2.10 | ug/L | | | | - | | |
| Acenaphthene | U | | 0.490 | 1.47 | ug/L | | | | - | | |
| Acenaphthylene | U | | 0.640 | 1.92 | ug/L | | | | - | | |
| Aniline | U | | 0.890 | 2.67 | ug/L | | | | - | | |
| Anthracene | U | | 0.500 | 1.50 | ug/L | | | | - | | |
| a-Terpineol | U | | 0.336 | 1.01 | ug/L | | | | - | | |
| Benzidine | U | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (a) anthracene | U | | 0.180 | 0.540 | ug/L | | | | - | | |

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## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Blank (1602018-BLK1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Benzo (a) pyrene | U | | 0.280 | 0.840 | ug/L | | | | - | | |
| Benzo (b) fluoranthene | U | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (g,h,i) perylene | U | | 0.210 | 0.630 | ug/L | | | | - | | |
| Benzo (k) fluoranthene | U | | 0.480 | 1.44 | ug/L | | | | - | | |
| Bis(2-chloroethoxy)methane | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| Bis(2-chloroethyl)ether | U | | 0.820 | 2.46 | ug/L | | | | - | | |
| Bis(2-chloroisopropyl)ether | U | | 0.970 | 2.91 | ug/L | | | | - | | |
| Bis(2-ethylhexyl)phthalate | U | | 1.32 | 3.96 | ug/L | | | | - | | |
| Butyl benzyl phthalate | U | | 0.190 | 0.570 | ug/L | | | | - | | |
| Chrysene | U | | 0.300 | 0.900 | ug/L | | | | - | | |
| Dibenz (a,h) anthracene | U | | 0.160 | 0.580 | ug/L | | | | - | | |
| Dibenzofuran | U | | 0.480 | 1.44 | ug/L | | | | - | | |
| Diethyl phthalate | U | | 0.200 | 0.600 | ug/L | | | | - | | |
| Dimethyl phthalate | U | | 0.290 | 0.870 | ug/L | | | | - | | |
| Di-n-butyl phthalate | U | | 0.240 | 0.720 | ug/L | | | | - | | |
| Di-n-octyl phthalate | U | | 0.170 | 0.510 | ug/L | | | | - | | |

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02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Blank (1602018-BLK1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Fluoranthene | U | | 0.280 | 0.840 | ug/L | | | | - | | |
| Fluorene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobenzene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobutadiene | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| Hexachlorocyclopentadiene | U | | 0.690 | 2.07 | ug/L | | | | - | | |
| Hexachloroethane | U | | 0.810 | 2.43 | ug/L | | | | - | | |
| Indeno (1,2,3-cd) pyrene | U | | 0.150 | 0.450 | ug/L | | | | - | | |
| Isophorone | U | | 0.680 | 2.04 | ug/L | | | | - | | |
| m,p Cresol | U | | 0.329 | 0.987 | ug/L | | | | - | | |
| Naphthalene | U | | 0.700 | 2.10 | ug/L | | | | - | | |
| n-Decane | U | | 0.244 | 0.733 | ug/L | | | | - | | |
| Nitrobenzene | U | | 0.770 | 2.31 | ug/L | | | | - | | |
| N-Nitrosodimethylamine | U | | 1.11 | 3.33 | ug/L | | | | - | | |
| N-Nitrosodi-n-propylamine | U | | 1.10 | 3.30 | ug/L | | | | - | | |
| N-Nitrosodiphenylamine | U | | 0.380 | 1.14 | ug/L | | | | - | | |
| n-Octadecane | U | | 1.59 | 4.78 | ug/L | | | | - | | |

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## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Blank (1602018-BLK1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Pentachlorophenol | U | | 0.320 | 0.960 | ug/L | | | | - | | |
| Phenanthrene | U | | 0.450 | 1.35 | ug/L | | | | - | | |
| Phenol | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| Pyrene | U | | 0.220 | 0.660 | ug/L | | | | - | | |
| Pyridine | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| *Surrogate: 2,4,6-Tribromophenol* | *39.0* | | | | ug/L | *50.00* | | *78.0* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *18.4* | | | | ug/L | *25.00* | | *73.7* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *30.8* | | | | ug/L | *50.00* | | *61.7* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *16.3* | | | | ug/L | *25.00* | | *65.2* | *50-150* | | |
| *Surrogate: Phenol-d6* | *19.8* | | | | ug/L | *50.00* | | *39.7* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *23.0* | | | | ug/L | *25.00* | | *92.1* | *50-150* | | |
| **LCS (1602018-BS1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 5.76 | | 1.27 | 3.81 | ug/L | 10.00 | | 57.6 | 44-142 | | |
| 1,2-Dichlorobenzene | 3.66 | | 1.02 | 3.06 | ug/L | 10.00 | | 36.6 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 7.53 | | 0.660 | 1.98 | ug/L | 10.00 | | 75.3 | 40-140 | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **LCS (1602018-BS1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 1,3-Dichlorobenzene | 3.58 | I | 1.24 | 3.72 | ug/L | 10.00 | | 35.8 | 0-172 | | |
| 1,4-Dichlorobenzene | 3.68 | | 1.18 | 3.54 | ug/L | 10.00 | | 36.8 | 20-124 | | |
| 2,4,5-Trichlorophenol | 8.52 | | 0.680 | 2.04 | ug/L | 10.00 | | 85.2 | 42-131 | | |
| 2,4,6-Trichlorophenol | 8.74 | | 0.560 | 1.68 | ug/L | 10.00 | | 87.4 | 37-144 | | |
| 2,4-Dichlorophenol | 7.62 | | 0.630 | 1.89 | ug/L | 10.00 | | 76.2 | 39-135 | | |
| 2,4-Dimethylphenol | 7.50 | | 0.490 | 1.47 | ug/L | 10.00 | | 75.0 | 32-119 | | |
| 2,4-Dinitrophenol | 6.24 | | 0.160 | 0.480 | ug/L | 10.00 | | 62.4 | 0-191 | | |
| 2,4-Dinitrotoluene | 6.98 | | 0.300 | 0.900 | ug/L | 10.00 | | 69.8 | 39-139 | | |
| 2,6-Dichlorophenol | 7.64 | | 0.237 | 0.712 | ug/L | 10.00 | | 76.4 | 37-136 | | |
| 2,6-Dinitrotoluene | 8.33 | | 0.520 | 1.56 | ug/L | 10.00 | | 83.3 | 50-158 | | |
| 2-Chloronaphthalene | 5.88 | | 0.550 | 1.65 | ug/L | 10.00 | | 58.8 | 60-118 | | |
| 2-Chlorophenol | 7.93 | | 0.890 | 2.67 | ug/L | 10.00 | | 79.3 | 23-134 | | |
| 2-Methylnaphthalene | 5.24 | | 0.0240 | 0.0720 | ug/L | 10.00 | | 52.4 | 34-129 | | |
| 2-Methylphenol | 7.52 | | 0.820 | 2.46 | ug/L | 10.00 | | 75.2 | 52-109 | | |
| 2-Nitrophenol | 6.43 | | 0.880 | 2.64 | ug/L | 10.00 | | 64.3 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 17.6 | | 0.310 | 0.930 | ug/L | 10.00 | | 176 | 0-262 | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **LCS (1602018-BS1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | 6.49 | | 0.270 | 0.810 | ug/L | 10.00 | | 64.9 | 0-181 | | |
| 4-Bromophenyl phenyl ether | 7.86 | | 0.530 | 1.59 | ug/L | 10.00 | | 78.6 | 53-127 | | |
| 4-Chloro-3-methylphenol | 7.69 | | 0.930 | 2.79 | ug/L | 10.00 | | 76.9 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 7.78 | | 0.580 | 1.74 | ug/L | 10.00 | | 77.8 | 25-158 | | |
| 4-Nitrophenol | 4.64 | | 0.700 | 2.10 | ug/L | 10.00 | | 46.4 | 0-132 | | |
| Acenaphthene | 6.77 | | 0.490 | 1.47 | ug/L | 10.00 | | 67.7 | 47-145 | | |
| Acenaphthylene | 7.33 | | 0.640 | 1.92 | ug/L | 10.00 | | 73.3 | 33-145 | | |
| Anthracene | 8.37 | | 0.500 | 1.50 | ug/L | 10.00 | | 83.7 | 27-133 | | |
| Benzo (a) anthracene | 7.29 | | 0.180 | 0.540 | ug/L | 10.00 | | 72.9 | 33-143 | | |
| Benzo (a) pyrene | 9.02 | | 0.280 | 0.840 | ug/L | 10.00 | | 90.2 | 17-163 | | |
| Benzo (b) fluoranthene | 10.7 | | 0.260 | 0.780 | ug/L | 10.00 | | 107 | 24-159 | | |
| Benzo (g,h,i) perylene | 5.54 | | 0.210 | 0.630 | ug/L | 10.00 | | 55.4 | 0-219 | | |
| Benzo (k) fluoranthene | 10.4 | | 0.480 | 1.44 | ug/L | 10.00 | | 104 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 6.99 | | 0.580 | 1.74 | ug/L | 10.00 | | 69.9 | 33-184 | | |
| Bis(2-chloroethyl)ether | 7.04 | | 0.820 | 2.46 | ug/L | 10.00 | | 70.4 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 6.72 | | 0.970 | 2.91 | ug/L | 10.00 | | 67.2 | 36-166 | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

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**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **LCS (1602018-BS1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10.3 | | 1.32 | 3.96 | ug/L | 10.00 | | 103 | 8-158 | | |
| Butyl benzyl phthalate | 9.26 | | 0.190 | 0.570 | ug/L | 10.00 | | 92.6 | 0-152 | | |
| Chrysene | 7.81 | | 0.300 | 0.900 | ug/L | 10.00 | | 78.1 | 17-168 | | |
| Dibenz (a,h) anthracene | 5.81 | | 0.160 | 0.580 | ug/L | 10.00 | | 58.1 | 0-227 | | |
| Dibenzofuran | 7.58 | | 0.480 | 1.44 | ug/L | 10.00 | | 75.8 | 46-127 | | |
| Diethyl phthalate | 6.98 | | 0.200 | 0.600 | ug/L | 10.00 | | 69.8 | 0-114 | | |
| Dimethyl phthalate | 3.85 | | 0.290 | 0.870 | ug/L | 10.00 | | 38.5 | 0-112 | | |
| Di-n-butyl phthalate | 9.22 | | 0.240 | 0.720 | ug/L | 10.00 | | 92.2 | 1-118 | | |
| Di-n-octyl phthalate | 19.6 | J-2, | 0.170 | 0.510 | ug/L | 10.00 | | 196 | 4-146 | | |
| Fluoranthene | 8.50 | | 0.280 | 0.840 | ug/L | 10.00 | | 85.0 | 26-137 | | |
| Fluorene | 7.83 | | 0.520 | 1.56 | ug/L | 10.00 | | 78.3 | 59-121 | | |
| Hexachlorobenzene | 7.84 | | 0.520 | 1.56 | ug/L | 10.00 | | 78.4 | 0-152 | | |
| Hexachlorobutadiene | 3.07 | | 0.530 | 1.59 | ug/L | 10.00 | | 30.7 | 24-116 | | |
| Hexachloroethane | 2.89 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | | 28.9 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 5.71 | | 0.150 | 0.450 | ug/L | 10.00 | | 57.1 | 0-171 | | |
| Isophorone | 7.55 | | 0.680 | 2.04 | ug/L | 10.00 | | 75.5 | 21-196 | | |

Serial #: 02092016115140

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16B0097

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **LCS (1602018-BS1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| m,p Cresol | 7.22 | | 0.329 | 0.987 | ug/L | 10.00 | | 72.2 | 48-110 | | |
| Naphthalene | 4.91 | | 0.700 | 2.10 | ug/L | 10.00 | | 49.1 | 21-133 | | |
| Nitrobenzene | 5.90 | | 0.770 | 2.31 | ug/L | 10.00 | | 59.0 | 35-180 | | |
| N-Nitrosodimethylamine | 5.71 | | 1.11 | 3.33 | ug/L | 10.00 | | 57.1 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 7.88 | | 1.10 | 3.30 | ug/L | 10.00 | | 78.8 | 0-230 | | |
| N-Nitrosodiphenylamine | 8.14 | | 0.380 | 1.14 | ug/L | 10.00 | | 81.4 | 40-140 | | |
| Pentachlorophenol | 6.58 | | 0.320 | 0.960 | ug/L | 10.00 | | 65.8 | 14-176 | | |
| Phenanthrene | 8.00 | | 0.450 | 1.35 | ug/L | 10.00 | | 80.0 | 54-120 | | |
| Phenol | 4.11 | | 0.580 | 1.74 | ug/L | 10.00 | | 41.1 | 5-112 | | |
| Pyrene | 9.66 | | 0.220 | 0.660 | ug/L | 10.00 | | 96.6 | 52-115 | | |
| Pyridine | 5.02 | | 0.530 | 1.59 | ug/L | 10.00 | | 50.2 | 10-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *43.7* | | | | ug/L | *50.00* | | *87.4* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *16.8* | | | | ug/L | *25.00* | | *67.1* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *29.1* | | | | ug/L | *50.00* | | *58.2* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *16.5* | | | | ug/L | *25.00* | | *66.0* | *50-150* | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **LCS (1602018-BS1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| *Surrogate: Phenol-d6* | *19.7* | | | | ug/L | *50.00* | | *39.4* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *18.3* | | | | ug/L | *25.00* | | *73.4* | *50-150* | | |
| **Matrix Spike (1602018-MS1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 3.72 | J-3, I | 1.27 | 3.81 | ug/L | 10.00 | U | 37.2 | 44-142 | | |
| 1,2-Dichlorobenzene | 3.61 | | 1.02 | 3.06 | ug/L | 10.00 | U | 36.1 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 7.36 | | 0.660 | 1.98 | ug/L | 10.00 | U | 73.6 | 40-140 | | |
| 1,3-Dichlorobenzene | 3.52 | I | 1.24 | 3.72 | ug/L | 10.00 | U | 35.2 | 0-172 | | |
| 1,4-Dichlorobenzene | 3.66 | | 1.18 | 3.54 | ug/L | 10.00 | U | 36.6 | 20-124 | | |
| 2,4,5-Trichlorophenol | 8.70 | | 0.680 | 2.04 | ug/L | 10.00 | U | 87.0 | 46-131 | | |
| 2,4,6-Trichlorophenol | 8.76 | | 0.560 | 1.68 | ug/L | 10.00 | U | 87.6 | 37-144 | | |
| 2,4-Dichlorophenol | 7.61 | | 0.630 | 1.89 | ug/L | 10.00 | U | 76.1 | 39-135 | | |
| 2,4-Dimethylphenol | 7.46 | | 0.490 | 1.47 | ug/L | 10.00 | U | 74.6 | 32-119 | | |
| 2,4-Dinitrophenol | 6.18 | | 0.160 | 0.480 | ug/L | 10.00 | U | 61.8 | 0-191 | | |
| 2,4-Dinitrotoluene | 6.98 | | 0.300 | 0.900 | ug/L | 10.00 | U | 69.8 | 39-139 | | |
| 2,6-Dichlorophenol | 7.55 | | 0.237 | 0.712 | ug/L | 10.00 | U | 75.5 | 35-145 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1602018-MS1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 2,6-Dinitrotoluene | 8.44 | | 0.520 | 1.56 | ug/L | 10.00 | U | 84.4 | 50-158 | | |
| 2-Chloronaphthalene | 5.90 | J-3, | 0.550 | 1.65 | ug/L | 10.00 | U | 59.0 | 60-118 | | |
| 2-Chlorophenol | 7.88 | | 0.890 | 2.67 | ug/L | 10.00 | U | 78.8 | 23-134 | | |
| 2-Methylnaphthalene | 5.26 | | 0.0240 | 0.0720 | ug/L | 10.00 | U | 52.6 | 36-128 | | |
| 2-Methylphenol | 7.43 | | 0.820 | 2.46 | ug/L | 10.00 | U | 74.3 | 52-113 | | |
| 2-Nitrophenol | 6.56 | | 0.880 | 2.64 | ug/L | 10.00 | U | 65.6 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 18.4 | | 0.310 | 0.930 | ug/L | 10.00 | U | 184 | 0-262 | | |
| 4,6-Dinitro-2-methylphenol | 6.81 | | 0.270 | 0.810 | ug/L | 10.00 | U | 68.1 | 0-181 | | |
| 4-Bromophenyl phenyl ether | 7.61 | | 0.530 | 1.59 | ug/L | 10.00 | U | 76.1 | 53-127 | | |
| 4-Chloro-3-methylphenol | 7.61 | | 0.930 | 2.79 | ug/L | 10.00 | U | 76.1 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 7.70 | | 0.580 | 1.74 | ug/L | 10.00 | U | 77.0 | 25-158 | | |
| 4-Nitrophenol | 4.14 | | 0.700 | 2.10 | ug/L | 10.00 | U | 41.4 | 0-132 | | |
| Acenaphthene | 6.64 | | 0.490 | 1.47 | ug/L | 10.00 | U | 66.4 | 47-145 | | |
| Acenaphthylene | 7.22 | | 0.640 | 1.92 | ug/L | 10.00 | U | 72.2 | 33-145 | | |
| Aniline | 8.22 | | 0.890 | 2.67 | ug/L | 10.00 | U | 82.2 | 40-147 | | |
| Anthracene | 8.23 | | 0.500 | 1.50 | ug/L | 10.00 | U | 82.3 | 27-133 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1602018-MS1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Benzo (a) anthracene | 7.29 | | 0.180 | 0.540 | ug/L | 10.00 | U | 72.9 | 33-143 | | |
| Benzo (a) pyrene | 9.11 | | 0.280 | 0.840 | ug/L | 10.00 | U | 91.1 | 17-163 | | |
| Benzo (b) fluoranthene | 11.1 | | 0.260 | 0.780 | ug/L | 10.00 | U | 111 | 24-159 | | |
| Benzo (g,h,i) perylene | 5.52 | | 0.210 | 0.630 | ug/L | 10.00 | U | 55.2 | 0-219 | | |
| Benzo (k) fluoranthene | 10.3 | | 0.480 | 1.44 | ug/L | 10.00 | U | 103 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 6.92 | | 0.580 | 1.74 | ug/L | 10.00 | U | 69.2 | 33-184 | | |
| Bis(2-chloroethyl)ether | 6.94 | | 0.820 | 2.46 | ug/L | 10.00 | U | 69.4 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 6.62 | | 0.970 | 2.91 | ug/L | 10.00 | U | 66.2 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 10.4 | | 1.32 | 3.96 | ug/L | 10.00 | U | 104 | 8-158 | | |
| Butyl benzyl phthalate | 9.26 | | 0.190 | 0.570 | ug/L | 10.00 | U | 92.6 | 0-152 | | |
| Chrysene | 7.71 | | 0.300 | 0.900 | ug/L | 10.00 | U | 77.1 | 17-168 | | |
| Dibenz (a,h) anthracene | 5.76 | | 0.160 | 0.580 | ug/L | 10.00 | U | 57.6 | 0-227 | | |
| Dibenzofuran | 7.42 | | 0.480 | 1.44 | ug/L | 10.00 | U | 74.2 | 43-136 | | |
| Diethyl phthalate | 6.90 | | 0.200 | 0.600 | ug/L | 10.00 | U | 69.0 | 0-114 | | |
| Dimethyl phthalate | 3.82 | | 0.290 | 0.870 | ug/L | 10.00 | U | 38.2 | 0-112 | | |
| Di-n-butyl phthalate | 9.09 | | 0.240 | 0.720 | ug/L | 10.00 | U | 90.9 | 1-118 | | |

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FPL Central Lab

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1602018-MS1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Di-n-octyl phthalate | 20.7 | J-2, | 0.170 | 0.510 | ug/L | 10.00 | U | 207 | 4-146 | | |
| Fluoranthene | 8.30 | | 0.280 | 0.840 | ug/L | 10.00 | U | 83.0 | 26-137 | | |
| Fluorene | 7.72 | | 0.520 | 1.56 | ug/L | 10.00 | U | 77.2 | 59-121 | | |
| Hexachlorobenzene | 7.72 | | 0.520 | 1.56 | ug/L | 10.00 | U | 77.2 | 0-152 | | |
| Hexachlorobutadiene | 3.14 | | 0.530 | 1.59 | ug/L | 10.00 | U | 31.4 | 24-116 | | |
| Hexachloroethane | 2.88 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | U | 28.8 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 5.55 | | 0.150 | 0.450 | ug/L | 10.00 | U | 55.5 | 0-171 | | |
| Isophorone | 7.43 | | 0.680 | 2.04 | ug/L | 10.00 | U | 74.3 | 21-196 | | |
| m,p Cresol | 7.07 | | 0.329 | 0.987 | ug/L | 10.00 | U | 70.7 | 53-110 | | |
| Naphthalene | 4.85 | | 0.700 | 2.10 | ug/L | 10.00 | U | 48.5 | 21-133 | | |
| Nitrobenzene | 5.84 | | 0.770 | 2.31 | ug/L | 10.00 | U | 58.4 | 35-180 | | |
| N-Nitrosodimethylamine | 5.50 | | 1.11 | 3.33 | ug/L | 10.00 | U | 55.0 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 7.84 | | 1.10 | 3.30 | ug/L | 10.00 | U | 78.4 | 0-230 | | |
| N-Nitrosodiphenylamine | 7.93 | | 0.380 | 1.14 | ug/L | 10.00 | U | 79.3 | 40-140 | | |
| Pentachlorophenol | 6.63 | | 0.320 | 0.960 | ug/L | 10.00 | U | 66.3 | 14-176 | | |
| Phenanthrene | 7.83 | | 0.450 | 1.35 | ug/L | 10.00 | U | 78.3 | 54-120 | | |

Serial #: 02092016115140

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1602018-MS1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Phenol | 4.04 | | 0.580 | 1.74 | ug/L | 10.00 | U | 40.4 | 5-112 | | |
| Pyrene | 9.71 | | 0.220 | 0.660 | ug/L | 10.00 | U | 97.1 | 52-115 | | |
| Pyridine | 4.70 | | 0.530 | 1.59 | ug/L | 10.00 | U | 47.0 | 40-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *43.0* | | | | ug/L | *50.00* | | *85.9* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *16.3* | | | | ug/L | *25.00* | | *65.2* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *28.6* | | | | ug/L | *50.00* | | *57.2* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *16.3* | | | | ug/L | *25.00* | | *65.2* | *50-150* | | |
| *Surrogate: Phenol-d6* | *19.6* | | | | ug/L | *50.00* | | *39.1* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *18.3* | | | | ug/L | *25.00* | | *73.4* | *50-150* | | |
| **Matrix Spike Dup (1602018-MSD1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 3.72 | J-3, I | 1.27 | 3.81 | ug/L | 10.00 | U | 37.2 | 44-142 | 0.215 | 20 |
| 1,2-Dichlorobenzene | 3.61 | | 1.02 | 3.06 | ug/L | 10.00 | U | 36.1 | 32-129 | 0.0277 | 20 |
| 1,2-Diphenylhydrazine as Azobenzene | 7.48 | | 0.660 | 1.98 | ug/L | 10.00 | U | 74.8 | 40-140 | 1.68 | 20 |
| 1,3-Dichlorobenzene | 3.51 | I | 1.24 | 3.72 | ug/L | 10.00 | U | 35.1 | 0-172 | 0.370 | 20 |
| 1,4-Dichlorobenzene | 3.65 | | 1.18 | 3.54 | ug/L | 10.00 | U | 36.5 | 20-124 | 0.109 | 20 |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1602018-MSD1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 2,4,5-Trichlorophenol | 8.44 | | 0.680 | 2.04 | ug/L | 10.00 | U | 84.4 | 46-131 | 2.99 | 30 |
| 2,4,6-Trichlorophenol | 8.78 | | 0.560 | 1.68 | ug/L | 10.00 | U | 87.8 | 37-144 | 0.217 | 20 |
| 2,4-Dichlorophenol | 7.54 | | 0.630 | 1.89 | ug/L | 10.00 | U | 75.4 | 39-135 | 0.977 | 20 |
| 2,4-Dimethylphenol | 7.37 | | 0.490 | 1.47 | ug/L | 10.00 | U | 73.7 | 32-119 | 1.28 | 20 |
| 2,4-Dinitrophenol | 6.62 | | 0.160 | 0.480 | ug/L | 10.00 | U | 66.2 | 0-191 | 6.93 | 20 |
| 2,4-Dinitrotoluene | 7.00 | | 0.300 | 0.900 | ug/L | 10.00 | U | 70.0 | 39-139 | 0.257 | 20 |
| 2,6-Dichlorophenol | 7.58 | | 0.237 | 0.712 | ug/L | 10.00 | U | 75.8 | 35-145 | 0.423 | 30 |
| 2,6-Dinitrotoluene | 8.70 | | 0.520 | 1.56 | ug/L | 10.00 | U | 87.0 | 50-158 | 3.13 | 20 |
| 2-Chloronaphthalene | 5.85 | J-3, | 0.550 | 1.65 | ug/L | 10.00 | U | 58.5 | 60-118 | 0.851 | 20 |
| 2-Chlorophenol | 7.81 | | 0.890 | 2.67 | ug/L | 10.00 | U | 78.1 | 23-134 | 0.956 | 20 |
| 2-Methylnaphthalene | 5.28 | | 0.0240 | 0.0720 | ug/L | 10.00 | U | 52.8 | 36-128 | 0.437 | 30 |
| 2-Methylphenol | 7.40 | | 0.820 | 2.46 | ug/L | 10.00 | U | 74.0 | 52-113 | 0.391 | 30 |
| 2-Nitrophenol | 6.52 | | 0.880 | 2.64 | ug/L | 10.00 | U | 65.2 | 29-182 | 0.565 | 20 |
| 3,3'-Dichlorobenzidine | 18.8 | | 0.310 | 0.930 | ug/L | 10.00 | U | 188 | 0-262 | 2.12 | 20 |
| 4,6-Dinitro-2-methylphenol | 6.75 | | 0.270 | 0.810 | ug/L | 10.00 | U | 67.5 | 0-181 | 0.767 | 20 |
| 4-Bromophenyl phenyl ether | 7.62 | | 0.530 | 1.59 | ug/L | 10.00 | U | 76.2 | 53-127 | 0.223 | 20 |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

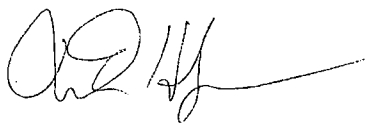
## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1602018-MSD1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| 4-Chloro-3-methylphenol | 7.53 | | 0.930 | 2.79 | ug/L | 10.00 | U | 75.3 | 22-147 | 1.08 | 20 |
| 4-Chlorophenyl phenyl ether | 7.74 | | 0.580 | 1.74 | ug/L | 10.00 | U | 77.4 | 25-158 | 0.622 | 20 |
| 4-Nitrophenol | 4.20 | | 0.700 | 2.10 | ug/L | 10.00 | U | 42.0 | 0-132 | 1.27 | 20 |
| Acenaphthene | 6.65 | | 0.490 | 1.47 | ug/L | 10.00 | U | 66.5 | 47-145 | 0.0602 | 20 |
| Acenaphthylene | 7.33 | | 0.640 | 1.92 | ug/L | 10.00 | U | 73.3 | 33-145 | 1.50 | 20 |
| Aniline | 8.10 | | 0.890 | 2.67 | ug/L | 10.00 | U | 81.0 | 40-147 | 1.50 | 30 |
| Anthracene | 8.27 | | 0.500 | 1.50 | ug/L | 10.00 | U | 82.7 | 27-133 | 0.497 | 20 |
| Benzo (a) anthracene | 7.30 | | 0.180 | 0.540 | ug/L | 10.00 | U | 73.0 | 33-143 | 0.165 | 20 |
| Benzo (a) pyrene | 9.06 | | 0.280 | 0.840 | ug/L | 10.00 | U | 90.6 | 17-163 | 0.539 | 20 |
| Benzo (b) fluoranthene | 11.1 | | 0.260 | 0.780 | ug/L | 10.00 | U | 111 | 24-159 | 0.208 | 20 |
| Benzo (g,h,i) perylene | 5.29 | | 0.210 | 0.630 | ug/L | 10.00 | U | 52.9 | 0-219 | 4.35 | 20 |
| Benzo (k) fluoranthene | 10.3 | | 0.480 | 1.44 | ug/L | 10.00 | U | 103 | 11-162 | 0.621 | 20 |
| Bis(2-chloroethoxy)methane | 6.96 | | 0.580 | 1.74 | ug/L | 10.00 | U | 69.6 | 33-184 | 0.576 | 20 |
| Bis(2-chloroethyl)ether | 6.87 | | 0.820 | 2.46 | ug/L | 10.00 | U | 68.7 | 12-158 | 0.970 | 20 |
| Bis(2-chloroisopropyl)ether | 6.59 | | 0.970 | 2.91 | ug/L | 10.00 | U | 65.9 | 36-166 | 0.424 | 20 |
| Bis(2-ethylhexyl)phthalate | 10.4 | | 1.32 | 3.96 | ug/L | 10.00 | U | 104 | 8-158 | 0.376 | 20 |

Serial #: 02092016115140

FPL Central Lab



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## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1602018-MSD1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Butyl benzyl phthalate | 9.35 | | 0.190 | 0.570 | ug/L | 10.00 | U | 93.5 | 0-152 | 0.881 | 20 |
| Chrysene | 7.62 | | 0.300 | 0.900 | ug/L | 10.00 | U | 76.2 | 17-168 | 1.23 | 20 |
| Dibenz (a,h) anthracene | 5.81 | | 0.160 | 0.580 | ug/L | 10.00 | U | 58.1 | 0-227 | 0.847 | 20 |
| Dibenzofuran | 7.45 | | 0.480 | 1.44 | ug/L | 10.00 | U | 74.5 | 43-136 | 0.390 | 30 |
| Diethyl phthalate | 6.98 | | 0.200 | 0.600 | ug/L | 10.00 | U | 69.8 | 0-114 | 1.25 | 20 |
| Dimethyl phthalate | 3.89 | | 0.290 | 0.870 | ug/L | 10.00 | U | 38.9 | 0-112 | 1.79 | 20 |
| Di-n-butyl phthalate | 9.13 | | 0.240 | 0.720 | ug/L | 10.00 | U | 91.3 | 1-118 | 0.439 | 20 |
| Di-n-octyl phthalate | 20.9 | J-2, | 0.170 | 0.510 | ug/L | 10.00 | U | 209 | 4-146 | 1.19 | 20 |
| Fluoranthene | 8.38 | | 0.280 | 0.840 | ug/L | 10.00 | U | 83.8 | 26-137 | 1.02 | 20 |
| Fluorene | 7.77 | | 0.520 | 1.56 | ug/L | 10.00 | U | 77.7 | 59-121 | 0.632 | 20 |
| Hexachlorobenzene | 7.71 | | 0.520 | 1.56 | ug/L | 10.00 | U | 77.1 | 0-152 | 0.156 | 20 |
| Hexachlorobutadiene | 3.10 | | 0.530 | 1.59 | ug/L | 10.00 | U | 31.0 | 24-116 | 1.38 | 20 |
| Hexachloroethane | 2.92 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | U | 29.2 | 40-113 | 1.35 | 20 |
| Indeno (1,2,3-cd) pyrene | 5.54 | | 0.150 | 0.450 | ug/L | 10.00 | U | 55.4 | 0-171 | 0.162 | 20 |
| Isophorone | 7.48 | | 0.680 | 2.04 | ug/L | 10.00 | U | 74.8 | 21-196 | 0.630 | 20 |
| m,p Cresol | 7.08 | | 0.329 | 0.987 | ug/L | 10.00 | U | 70.8 | 53-110 | 0.141 | 30 |

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## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1602018-MSD1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Naphthalene | 4.90 | | 0.700 | 2.10 | ug/L | 10.00 | U | 49.0 | 21-133 | 0.944 | 20 |
| Nitrobenzene | 5.85 | | 0.770 | 2.31 | ug/L | 10.00 | U | 58.5 | 35-180 | 0.0856 | 20 |
| N-Nitrosodimethylamine | 5.80 | | 1.11 | 3.33 | ug/L | 10.00 | U | 58.0 | 40-140 | 5.22 | 20 |
| N-Nitrosodi-n-propylamine | 7.80 | | 1.10 | 3.30 | ug/L | 10.00 | U | 78.0 | 0-230 | 0.525 | 20 |
| N-Nitrosodiphenylamine | 7.99 | | 0.380 | 1.14 | ug/L | 10.00 | U | 79.9 | 40-140 | 0.741 | 20 |
| Pentachlorophenol | 6.64 | | 0.320 | 0.960 | ug/L | 10.00 | U | 66.4 | 14-176 | 0.121 | 20 |
| Phenanthrene | 7.88 | | 0.450 | 1.35 | ug/L | 10.00 | U | 78.8 | 54-120 | 0.649 | 20 |
| Phenol | 4.15 | | 0.580 | 1.74 | ug/L | 10.00 | U | 41.5 | 5-112 | 2.66 | 20 |
| Pyrene | 9.70 | | 0.220 | 0.660 | ug/L | 10.00 | U | 97.0 | 52-115 | 0.0618 | 20 |
| Pyridine | 4.72 | | 0.530 | 1.59 | ug/L | 10.00 | U | 47.2 | 40-110 | 0.489 | 30 |
| *Surrogate: 2,4,6-Tribromophenol* | *43.7* | | | | ug/L | *50.00* | | *87.4* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *16.4* | | | | ug/L | *25.00* | | *65.4* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *28.2* | | | | ug/L | *50.00* | | *56.5* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *16.4* | | | | ug/L | *25.00* | | *65.7* | *50-150* | | |
| *Surrogate: Phenol-d6* | *19.4* | | | | ug/L | *50.00* | | *38.8* | *30-110* | | |

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02/09/2016 11:51

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602018 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1602018-MSD1)** | **Source: 16B0008-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| *Surrogate: p-Terphenyl* | *18.3* | | | | ug/L | *25.00* | | *73.3* | *50-150* | | |

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**Reported:**
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Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Blank (1602036-BLK1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | U | | 0.0840 | 0.237 | ug/L | | | | - | | |
| 1,1,1-Trichloroethane | U | | 0.0380 | 0.113 | ug/L | | | | - | | |
| 1,1,2,2-Tetrachloroethane | U | | 0.0690 | 0.207 | ug/L | | | | - | | |
| 1,1,2-Trichloroethane | U | | 0.0750 | 0.226 | ug/L | | | | - | | |
| 1,1-Dichloroethane | U | | 0.204 | 0.612 | ug/L | | | | - | | |
| 1,1-Dichloroethene | U | | 0.0590 | 0.176 | ug/L | | | | - | | |
| 1,1-Dichloropropene | U | | 0.120 | 0.359 | ug/L | | | | - | | |
| 1,2,3-Trichlorobenzene | U | | 0.250 | 0.751 | ug/L | | | | - | | |
| 1,2,3-Trichloropropane | U | | 0.122 | 0.366 | ug/L | | | | - | | |
| 1,2,4-Trichlorobenzene | U | | 0.248 | 0.745 | ug/L | | | | - | | |
| 1,2,4-Trimethylbenzene | U | | 0.211 | 0.633 | ug/L | | | | - | | |
| 1,2-Dibromo-3-chloropropane | U | | 0.236 | 0.708 | ug/L | | | | - | | |
| 1,2-Dibromoethane (EDB) | U | | 0.0710 | 0.213 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | U | | 0.193 | 0.580 | ug/L | | | | - | | |
| 1,2-Dichloroethane | U | | 0.0360 | 0.109 | ug/L | | | | - | | |
| 1,2-Dichloropropane | U | | 0.0450 | 0.136 | ug/L | | | | - | | |

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**Reported:**
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Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Blank (1602036-BLK1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,3,5-Trimethylbenzene | U | | 0.135 | 0.405 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | U | | 0.195 | 0.585 | ug/L | | | | - | | |
| 1,3-Dichloropropane | U | | 0.0730 | 0.220 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | U | | 0.257 | 0.770 | ug/L | | | | - | | |
| 2,2-Dichloropropane | U | | 0.401 | 1.20 | ug/L | | | | - | | |
| 2-Butanone (Methyl Ethyl Ketone) | U | | 0.299 | 0.898 | ug/L | | | | - | | |
| 2-Chloroethylvinyl ether | U | | 0.745 | 2.24 | ug/L | | | | - | | |
| 2-Chlorotoluene | U | | 0.129 | 0.388 | ug/L | | | | - | | |
| 2-Hexanone | U | | 0.445 | 1.34 | ug/L | | | | - | | |
| 4-Chlorotoluene | U | | 0.140 | 0.420 | ug/L | | | | - | | |
| 4-Methyl-2-pentanone | U | | 0.135 | 0.405 | ug/L | | | | - | | |
| Acetone | U | | 0.277 | 0.832 | ug/L | | | | - | | |
| Acrolein | U | | 0.303 | 0.909 | ug/L | | | | - | | |
| Acrylonitrile | U | | 0.160 | 0.479 | ug/L | | | | - | | |
| Benzene | U | | 0.0300 | 0.0900 | ug/L | | | | - | | |
| Bromobenzene | U | | 0.113 | 0.340 | ug/L | | | | - | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Blank (1602036-BLK1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Bromochloromethane | U | | 0.0570 | 0.172 | ug/L | | | | - | | |
| Bromodichloromethane | U | | 0.0860 | 0.258 | ug/L | | | | - | | |
| Bromoform | U | | 0.138 | 0.414 | ug/L | | | | - | | |
| Bromomethane | U | | 0.132 | 0.397 | ug/L | | | | - | | |
| Carbon Tetrachloride | U | | 0.0520 | 0.156 | ug/L | | | | - | | |
| Chlorobenzene | U | | 0.0790 | 0.237 | ug/L | | | | - | | |
| Chloroethane | U | | 0.308 | 0.924 | ug/L | | | | - | | |
| Chloroform | U | | 0.0770 | 0.232 | ug/L | | | | - | | |
| Chloromethane | U | | 0.0480 | 0.144 | ug/L | | | | - | | |
| cis-1,2-Dichloroethene | U | | 0.213 | 0.639 | ug/L | | | | - | | |
| cis-1,3-Dichloropropene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Dibromochloromethane | U | | 0.0660 | 0.199 | ug/L | | | | - | | |
| Dibromomethane | U | | 0.0570 | 0.171 | ug/L | | | | - | | |
| Dichlorodifluoromethane | U | | 0.0940 | 0.283 | ug/L | | | | - | | |
| Ethyl Benzene | U | | 0.0840 | 0.252 | ug/L | | | | - | | |
| Hexachlorobutadiene | U | | 0.141 | 0.424 | ug/L | | | | - | | |

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**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Blank (1602036-BLK1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Isopropylbenzene | U | | 0.116 | 0.348 | ug/L | | | | - | | |
| m,p-Xylene | U | | 0.168 | 0.505 | ug/L | | | | - | | |
| Methylene Chloride | U | | 0.751 | 2.25 | ug/L | | | | - | | |
| Methyl-tert-butyl ether | U | | 0.0860 | 0.257 | ug/L | | | | - | | |
| Naphthalene | U | | 0.579 | 1.74 | ug/L | | | | - | | |
| n-Butyl Benzene | U | | 0.266 | 0.798 | ug/L | | | | - | | |
| n-Propylbenzene | U | | 0.109 | 0.328 | ug/L | | | | - | | |
| o-Xylene | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| p-Isopropyltoluene | U | | 0.197 | 0.592 | ug/L | | | | - | | |
| sec-Butyl Benzene | U | | 0.177 | 0.531 | ug/L | | | | - | | |
| Styrene | U | | 0.0960 | 0.287 | ug/L | | | | - | | |
| tert-Butylbenzene | U | | 0.193 | 0.578 | ug/L | | | | - | | |
| Tetrachloroethene | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| Toluene | U | | 0.0350 | 0.104 | ug/L | | | | - | | |
| trans-1,2-Dichloroethene | U | | 0.107 | 0.320 | ug/L | | | | - | | |
| trans-1,3-Dichloropropene | U | | 0.250 | 0.751 | ug/L | | | | - | | |

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**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Blank (1602036-BLK1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Trichloroethene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Trichlorofluoromethane | U | | 0.0700 | 0.211 | ug/L | | | | - | | |
| Vinyl chloride | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.52* | | | | ug/L | *5.000* | | *70.4* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *4.35* | | | | ug/L | *5.000* | | *87.0* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *4.40* | | | | ug/L | *5.000* | | *88.0* | *46-125* | | |
| **LCS (1602036-BS1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 19.5 | | 0.0840 | 0.237 | ug/L | 20.00 | | 97.4 | 70-130 | | |
| 1,1,1-Trichloroethane | 24.1 | | 0.0380 | 0.113 | ug/L | 20.00 | | 120 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 14.7 | | 0.0690 | 0.207 | ug/L | 20.00 | | 73.6 | 46-157 | | |
| 1,1,2-Trichloroethane | 18.8 | | 0.0750 | 0.226 | ug/L | 20.00 | | 94.0 | 52-150 | | |
| 1,1-Dichloroethane | 17.9 | | 0.204 | 0.612 | ug/L | 20.00 | | 89.4 | 59-155 | | |
| 1,1-Dichloroethene | 13.8 | | 0.0590 | 0.176 | ug/L | 20.00 | | 69.0 | 0-234 | | |
| 1,1-Dichloropropene | 20.8 | | 0.120 | 0.359 | ug/L | 20.00 | | 104 | 70-130 | | |
| 1,2,3-Trichlorobenzene | 15.5 | | 0.250 | 0.751 | ug/L | 20.00 | | 77.6 | 70-130 | | |

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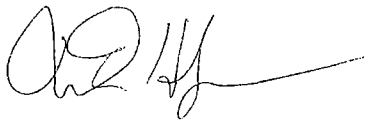
FPL Central Lab



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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **LCS (1602036-BS1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,2,3-Trichloropropane | 17.0 | | 0.122 | 0.366 | ug/L | 20.00 | | 84.8 | 70-130 | | |
| 1,2,4-Trichlorobenzene | 19.6 | | 0.248 | 0.745 | ug/L | 20.00 | | 97.8 | 70-130 | | |
| 1,2,4-Trimethylbenzene | 18.7 | | 0.211 | 0.633 | ug/L | 20.00 | | 93.6 | 70-130 | | |
| 1,2-Dibromo-3-chloropropane | 14.2 | | 0.236 | 0.708 | ug/L | 20.00 | | 71.1 | 70-130 | | |
| 1,2-Dibromoethane (EDB) | 17.6 | | 0.0710 | 0.213 | ug/L | 20.00 | | 88.2 | 70-130 | | |
| 1,2-Dichlorobenzene | 17.8 | | 0.193 | 0.580 | ug/L | 20.00 | | 89.2 | 18-190 | | |
| 1,2-Dichloroethane | 19.4 | | 0.0360 | 0.109 | ug/L | 20.00 | | 97.2 | 49-155 | | |
| 1,2-Dichloropropane | 17.6 | | 0.0450 | 0.136 | ug/L | 20.00 | | 88.1 | 0-210 | | |
| 1,3,5-Trimethylbenzene | 19.5 | | 0.135 | 0.405 | ug/L | 20.00 | | 97.6 | 70-130 | | |
| 1,3-Dichlorobenzene | 19.7 | | 0.195 | 0.585 | ug/L | 20.00 | | 98.4 | 59-156 | | |
| 1,3-Dichloropropane | 17.2 | | 0.0730 | 0.220 | ug/L | 20.00 | | 85.8 | 70-130 | | |
| 1,4-Dichlorobenzene | 19.2 | | 0.257 | 0.770 | ug/L | 20.00 | | 96.0 | 18-190 | | |
| 2,2-Dichloropropane | 26.3 | J-2, | 0.401 | 1.20 | ug/L | 20.00 | | 132 | 70-130 | | |
| 2-Butanone (Methyl Ethyl Ketone) | 19.3 | | 0.299 | 0.898 | ug/L | 20.00 | | 96.6 | 70-130 | | |
| 2-Chloroethylvinyl ether | 14.5 | | 0.745 | 2.24 | ug/L | 20.00 | | 72.6 | 0-305 | | |
| 2-Chlorotoluene | 19.2 | | 0.129 | 0.388 | ug/L | 20.00 | | 96.1 | 70-130 | | |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **LCS (1602036-BS1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 2-Hexanone | 13.7 | J-2, | 0.445 | 1.34 | ug/L | 20.00 | | 68.3 | 70-130 | | |
| 4-Chlorotoluene | 18.8 | | 0.140 | 0.420 | ug/L | 20.00 | | 93.8 | 70-130 | | |
| 4-Methyl-2-pentanone | 15.5 | | 0.135 | 0.405 | ug/L | 20.00 | | 77.6 | 70-130 | | |
| Acetone | 75.3 | | 0.277 | 0.832 | ug/L | 100.0 | | 75.3 | 70-130 | | |
| Acrolein | 66.7 | J-2, | 0.303 | 0.909 | ug/L | 100.0 | | 66.7 | 70-130 | | |
| Acrylonitrile | 16.1 | | 0.160 | 0.479 | ug/L | 20.00 | | 80.3 | 70-130 | | |
| Benzene | 20.3 | | 0.0300 | 0.0900 | ug/L | 20.00 | | 101 | 37-151 | | |
| Bromobenzene | 18.4 | | 0.113 | 0.340 | ug/L | 20.00 | | 91.9 | 70-130 | | |
| Bromochloromethane | 14.2 | | 0.0570 | 0.172 | ug/L | 20.00 | | 71.2 | 70-130 | | |
| Bromodichloromethane | 18.4 | | 0.0860 | 0.258 | ug/L | 20.00 | | 91.8 | 35-155 | | |
| Bromoform | 16.0 | | 0.138 | 0.414 | ug/L | 20.00 | | 80.0 | 45-169 | | |
| Bromomethane | 16.1 | | 0.132 | 0.397 | ug/L | 20.00 | | 80.6 | 0-242 | | |
| Carbon Tetrachloride | 21.0 | | 0.0520 | 0.156 | ug/L | 20.00 | | 105 | 70-140 | | |
| Chlorobenzene | 19.8 | | 0.0790 | 0.237 | ug/L | 20.00 | | 99.2 | 37-160 | | |
| Chloroethane | 19.6 | | 0.308 | 0.924 | ug/L | 20.00 | | 98.0 | 14-230 | | |
| Chloroform | 14.0 | | 0.0770 | 0.232 | ug/L | 20.00 | | 70.2 | 51-138 | | |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **LCS (1602036-BS1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Chloromethane | 15.1 | | 0.0480 | 0.144 | ug/L | 20.00 | | 75.6 | 0-273 | | |
| cis-1,2-Dichloroethene | 14.2 | | 0.213 | 0.639 | ug/L | 20.00 | | 70.8 | 70-130 | | |
| cis-1,3-Dichloropropene | 19.0 | | 0.0500 | 0.151 | ug/L | 20.00 | | 94.8 | 0-227 | | |
| Dibromochloromethane | 17.9 | | 0.0660 | 0.199 | ug/L | 20.00 | | 89.6 | 53-149 | | |
| Dibromomethane | 19.9 | | 0.0570 | 0.171 | ug/L | 20.00 | | 99.6 | 70-130 | | |
| Dichlorodifluoromethane | 19.6 | | 0.0940 | 0.283 | ug/L | 20.00 | | 98.2 | 70-130 | | |
| Ethyl Benzene | 19.6 | | 0.0840 | 0.252 | ug/L | 20.00 | | 97.8 | 37-162 | | |
| Hexachlorobutadiene | 22.5 | | 0.141 | 0.424 | ug/L | 20.00 | | 112 | 70-130 | | |
| Isopropylbenzene | 19.3 | | 0.116 | 0.348 | ug/L | 20.00 | | 96.6 | 70-130 | | |
| m,p-Xylene | 39.8 | | 0.168 | 0.505 | ug/L | 40.00 | | 99.4 | 70-130 | | |
| Methylene Chloride | 14.1 | | 0.751 | 2.25 | ug/L | 20.00 | | 70.4 | 0-221 | | |
| Methyl-tert-butyl ether | 23.2 | | 0.0860 | 0.257 | ug/L | 20.00 | | 116 | 70-130 | | |
| Naphthalene | 16.3 | | 0.579 | 1.74 | ug/L | 20.00 | | 81.4 | 70-130 | | |
| n-Butyl Benzene | 18.4 | | 0.266 | 0.798 | ug/L | 20.00 | | 92.0 | 70-130 | | |
| n-Propylbenzene | 19.3 | | 0.109 | 0.328 | ug/L | 20.00 | | 96.6 | 70-130 | | |
| o-Xylene | 18.8 | | 0.0840 | 0.253 | ug/L | 20.00 | | 93.8 | 70-130 | | |

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Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **LCS (1602036-BS1)** | | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| p-Isopropyltoluene | 19.8 | | 0.197 | 0.592 | ug/L | 20.00 | | 98.9 | 70-130 | | |
| sec-Butyl Benzene | 20.2 | | 0.177 | 0.531 | ug/L | 20.00 | | 101 | 70-130 | | |
| Styrene | 21.7 | | 0.0960 | 0.287 | ug/L | 20.00 | | 109 | 70-130 | | |
| tert-Butylbenzene | 20.4 | | 0.193 | 0.578 | ug/L | 20.00 | | 102 | 70-130 | | |
| Tetrachloroethene | 23.1 | | 0.0840 | 0.253 | ug/L | 20.00 | | 116 | 64-148 | | |
| Toluene | 20.0 | | 0.0350 | 0.104 | ug/L | 20.00 | | 100 | 47-150 | | |
| trans-1,2-Dichloroethene | 16.7 | | 0.107 | 0.320 | ug/L | 20.00 | | 83.6 | 54-156 | | |
| trans-1,3-Dichloropropene | 16.8 | | 0.250 | 0.751 | ug/L | 20.00 | | 84.0 | 17-183 | | |
| Trichloroethene | 19.4 | | 0.0500 | 0.151 | ug/L | 20.00 | | 97.1 | 71-157 | | |
| Trichlorofluoromethane | 17.2 | | 0.0700 | 0.211 | ug/L | 20.00 | | 85.8 | 17-181 | | |
| Vinyl chloride | 17.9 | | 0.0840 | 0.253 | ug/L | 20.00 | | 89.6 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.21* | | | | ug/L | *5.000* | | *124* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *10.4* | | | | ug/L | *5.000* | | *207* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *7.20* | | | | ug/L | *5.000* | | *144* | *46-125* | | |
| **Matrix Spike (1602036-MS1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |

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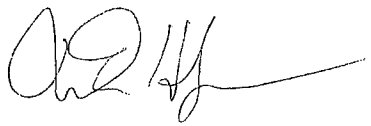
## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1602036-MS1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 493 | | 1.68 | 4.74 | ug/L | 400.0 | U | 123 | 70-130 | | |
| 1,1,1-Trichloroethane | 442 | | 0.760 | 2.26 | ug/L | 400.0 | U | 110 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 323 | | 1.38 | 4.14 | ug/L | 400.0 | U | 80.8 | 46-157 | | |
| 1,1,2-Trichloroethane | 425 | | 1.50 | 4.52 | ug/L | 400.0 | U | 106 | 52-150 | | |
| 1,1-Dichloroethane | 371 | | 4.08 | 12.2 | ug/L | 400.0 | U | 92.6 | 59-155 | | |
| 1,1-Dichloroethene | 442 | | 1.18 | 3.52 | ug/L | 400.0 | U | 111 | 0-234 | | |
| 1,1-Dichloropropene | 378 | | 2.40 | 7.18 | ug/L | 400.0 | U | 94.6 | 70-130 | | |
| 1,2,3-Trichlorobenzene | 312 | | 5.00 | 15.0 | ug/L | 400.0 | U | 77.9 | 70-130 | | |
| 1,2,3-Trichloropropane | 429 | | 2.44 | 7.32 | ug/L | 400.0 | U | 107 | 70-130 | | |
| 1,2,4-Trichlorobenzene | 440 | | 4.96 | 14.9 | ug/L | 400.0 | U | 110 | 70-130 | | |
| 1,2,4-Trimethylbenzene | 468 | | 4.22 | 12.7 | ug/L | 400.0 | U | 117 | 70-130 | | |
| 1,2-Dibromo-3-chloropropane | 337 | | 4.72 | 14.2 | ug/L | 400.0 | U | 84.2 | 70-130 | | |
| 1,2-Dibromoethane (EDB) | 429 | | 1.42 | 4.26 | ug/L | 400.0 | U | 107 | 70-130 | | |
| 1,2-Dichlorobenzene | 371 | | 3.86 | 11.6 | ug/L | 400.0 | U | 92.8 | 18-190 | | |
| 1,2-Dichloroethane | 391 | | 0.720 | 2.18 | ug/L | 400.0 | U | 97.6 | 49-155 | | |
| 1,2-Dichloropropane | 318 | | 0.900 | 2.72 | ug/L | 400.0 | U | 79.4 | 0-210 | | |

Serial #: 02092016115140

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1602036-MS1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,3,5-Trimethylbenzene | 461 | | 2.70 | 8.10 | ug/L | 400.0 | U | 115 | 70-130 | | |
| 1,3-Dichlorobenzene | 477 | | 3.90 | 11.7 | ug/L | 400.0 | U | 119 | 59-156 | | |
| 1,3-Dichloropropane | 406 | | 1.46 | 4.40 | ug/L | 400.0 | U | 102 | 70-130 | | |
| 1,4-Dichlorobenzene | 461 | | 5.14 | 15.4 | ug/L | 400.0 | U | 115 | 18-190 | | |
| 2,2-Dichloropropane | 455 | J-2, | 8.02 | 24.0 | ug/L | 400.0 | U | 114 | 70-130 | | |
| 2-Butanone (Methyl Ethyl Ketone) | 362 | | 5.98 | 18.0 | ug/L | 400.0 | U | 90.4 | 70-130 | | |
| 2-Chloroethylvinyl ether | U | | 14.9 | 44.7 | ug/L | 400.0 | U | | 0-305 | | |
| 2-Chlorotoluene | 465 | | 2.58 | 7.76 | ug/L | 400.0 | U | 116 | 70-130 | | |
| 2-Hexanone | 340 | J-2, | 8.90 | 26.7 | ug/L | 400.0 | U | 85.0 | 70-130 | | |
| 4-Chlorotoluene | 446 | | 2.80 | 8.40 | ug/L | 400.0 | U | 112 | 70-130 | | |
| 4-Methyl-2-pentanone | 327 | | 2.70 | 8.10 | ug/L | 400.0 | U | 81.8 | 70-130 | | |
| Acetone | 1530 | | 5.54 | 16.6 | ug/L | 2000 | U | 76.4 | 70-130 | | |
| Acrolein | 2580 | J-2, | 6.06 | 18.2 | ug/L | 2000 | U | 129 | 70-130 | | |
| Acrylonitrile | 315 | | 3.20 | 9.58 | ug/L | 400.0 | U | 78.8 | 70-130 | | |
| Benzene | 402 | | 0.600 | 1.80 | ug/L | 400.0 | U | 100 | 37-151 | | |
| Bromobenzene | 439 | | 2.26 | 6.80 | ug/L | 400.0 | U | 110 | 70-130 | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1602036-MS1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Bromochloromethane | 302 | | 1.14 | 3.44 | ug/L | 400.0 | U | 75.4 | 70-130 | | |
| Bromodichloromethane | 352 | | 1.72 | 5.16 | ug/L | 400.0 | U | 87.9 | 35-155 | | |
| Bromoform | 342 | | 2.76 | 8.28 | ug/L | 400.0 | U | 85.4 | 45-169 | | |
| Bromomethane | 409 | | 2.64 | 7.94 | ug/L | 400.0 | U | 102 | 0-242 | | |
| Carbon Tetrachloride | 381 | | 1.04 | 3.12 | ug/L | 400.0 | U | 95.2 | 70-140 | | |
| Chlorobenzene | 486 | | 1.58 | 4.74 | ug/L | 400.0 | U | 121 | 37-160 | | |
| Chloroethane | 422 | | 6.16 | 18.5 | ug/L | 400.0 | U | 106 | 14-230 | | |
| Chloroform | 385 | | 1.54 | 4.64 | ug/L | 400.0 | U | 96.4 | 51-138 | | |
| Chloromethane | 337 | | 0.960 | 2.88 | ug/L | 400.0 | U | 84.2 | 0-273 | | |
| cis-1,2-Dichloroethene | 338 | | 4.26 | 12.8 | ug/L | 400.0 | U | 84.4 | 70-130 | | |
| cis-1,3-Dichloropropene | 293 | | 1.00 | 3.02 | ug/L | 400.0 | U | 73.3 | 0-227 | | |
| Dibromochloromethane | 421 | | 1.32 | 3.98 | ug/L | 400.0 | U | 105 | 53-149 | | |
| Dibromomethane | 402 | | 1.14 | 3.42 | ug/L | 400.0 | U | 100 | 70-130 | | |
| Dichlorodifluoromethane | 375 | | 1.88 | 5.66 | ug/L | 400.0 | U | 93.8 | 70-130 | | |
| Ethyl Benzene | 468 | | 1.68 | 5.04 | ug/L | 400.0 | U | 117 | 37-162 | | |
| Hexachlorobutadiene | 373 | | 2.82 | 8.48 | ug/L | 400.0 | U | 93.2 | 70-130 | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1602036-MS1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Isopropylbenzene | 430 | | 2.32 | 6.96 | ug/L | 400.0 | U | 108 | 70-130 | | |
| m,p-Xylene | 962 | | 3.36 | 10.1 | ug/L | 800.0 | U | 120 | 70-130 | | |
| Methylene Chloride | 310 | | 15.0 | 45.1 | ug/L | 400.0 | U | 77.4 | 0-221 | | |
| Methyl-tert-butyl ether | 472 | | 1.72 | 5.14 | ug/L | 400.0 | U | 118 | 70-130 | | |
| Naphthalene | 370 | | 11.6 | 34.8 | ug/L | 400.0 | U | 92.6 | 70-130 | | |
| n-Butyl Benzene | 365 | | 5.32 | 16.0 | ug/L | 400.0 | U | 91.2 | 70-130 | | |
| n-Propylbenzene | 441 | | 2.18 | 6.56 | ug/L | 400.0 | U | 110 | 70-130 | | |
| o-Xylene | 459 | | 1.68 | 5.06 | ug/L | 400.0 | U | 115 | 70-130 | | |
| p-Isopropyltoluene | 445 | | 3.94 | 11.8 | ug/L | 400.0 | U | 111 | 70-130 | | |
| sec-Butyl Benzene | 432 | | 3.54 | 10.6 | ug/L | 400.0 | U | 108 | 70-130 | | |
| Styrene | 522 | | 1.92 | 5.74 | ug/L | 400.0 | U | 130 | 70-130 | | |
| tert-Butylbenzene | 450 | | 3.86 | 11.6 | ug/L | 400.0 | U | 113 | 70-130 | | |
| Tetrachloroethene | 450 | | 1.68 | 5.06 | ug/L | 400.0 | U | 113 | 64-148 | | |
| Toluene | 396 | | 0.700 | 2.08 | ug/L | 400.0 | 0.750 | 98.9 | 47-150 | | |
| trans-1,2-Dichloroethene | 348 | | 2.14 | 6.40 | ug/L | 400.0 | U | 86.9 | 54-156 | | |
| trans-1,3-Dichloropropene | 321 | | 5.00 | 15.0 | ug/L | 400.0 | U | 80.3 | 17-183 | | |

Serial #: 02092016115140

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1602036-MS1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Trichloroethene | 377 | | 1.00 | 3.02 | ug/L | 400.0 | U | 94.3 | 71-157 | | |
| Trichlorofluoromethane | 443 | | 1.40 | 4.22 | ug/L | 400.0 | U | 111 | 17-181 | | |
| Vinyl chloride | 447 | | 1.68 | 5.06 | ug/L | 400.0 | U | 112 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *131* | | | | ug/L | *100.0* | | *131* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *208* | | | | ug/L | *100.0* | | *208* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *176* | | | | ug/L | *100.0* | | *176* | *46-125* | | |
| **Matrix Spike Dup (1602036-MSD1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 375 | | 1.68 | 4.74 | ug/L | 400.0 | U | 93.8 | 70-130 | 27.1 | 30 |
| 1,1,1-Trichloroethane | 459 | | 0.760 | 2.26 | ug/L | 400.0 | U | 115 | 52-162 | 3.82 | 30 |
| 1,1,2,2-Tetrachloroethane | 308 | | 1.38 | 4.14 | ug/L | 400.0 | U | 76.9 | 46-157 | 4.88 | 30 |
| 1,1,2-Trichloroethane | 370 | | 1.50 | 4.52 | ug/L | 400.0 | U | 92.4 | 52-150 | 14.0 | 30 |
| 1,1-Dichloroethane | 331 | | 4.08 | 12.2 | ug/L | 400.0 | U | 82.8 | 59-155 | 11.3 | 30 |
| 1,1-Dichloroethene | 322 | | 1.18 | 3.52 | ug/L | 400.0 | U | 80.4 | 0-234 | 31.6 | 30 |
| 1,1-Dichloropropene | 395 | | 2.40 | 7.18 | ug/L | 400.0 | U | 98.7 | 70-130 | 4.24 | 30 |
| 1,2,3-Trichlorobenzene | 400 | | 5.00 | 15.0 | ug/L | 400.0 | U | 99.9 | 70-130 | 24.7 | 30 |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1602036-MSD1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 1,2,3-Trichloropropane | 342 | | 2.44 | 7.32 | ug/L | 400.0 | U | 85.6 | 70-130 | 22.5 | 30 |
| 1,2,4-Trichlorobenzene | 459 | | 4.96 | 14.9 | ug/L | 400.0 | U | 115 | 70-130 | 4.32 | 30 |
| 1,2,4-Trimethylbenzene | 353 | | 4.22 | 12.7 | ug/L | 400.0 | U | 88.2 | 70-130 | 28.0 | 30 |
| 1,2-Dibromo-3-chloropropane | 324 | | 4.72 | 14.2 | ug/L | 400.0 | U | 81.0 | 70-130 | 4.00 | 30 |
| 1,2-Dibromoethane (EDB) | 350 | | 1.42 | 4.26 | ug/L | 400.0 | U | 87.4 | 70-130 | 20.5 | 30 |
| 1,2-Dichlorobenzene | 358 | | 3.86 | 11.6 | ug/L | 400.0 | U | 89.6 | 18-190 | 3.56 | 30 |
| 1,2-Dichloroethane | 389 | | 0.720 | 2.18 | ug/L | 400.0 | U | 97.2 | 49-155 | 0.410 | 30 |
| 1,2-Dichloropropane | 343 | | 0.900 | 2.72 | ug/L | 400.0 | U | 85.8 | 0-210 | 7.69 | 30 |
| 1,3,5-Trimethylbenzene | 358 | | 2.70 | 8.10 | ug/L | 400.0 | U | 89.5 | 70-130 | 25.2 | 30 |
| 1,3-Dichlorobenzene | 372 | | 3.90 | 11.7 | ug/L | 400.0 | U | 93.0 | 59-156 | 24.7 | 30 |
| 1,3-Dichloropropane | 341 | | 1.46 | 4.40 | ug/L | 400.0 | U | 85.2 | 70-130 | 17.6 | 30 |
| 1,4-Dichlorobenzene | 363 | | 5.14 | 15.4 | ug/L | 400.0 | U | 90.7 | 18-190 | 23.9 | 30 |
| 2,2-Dichloropropane | 336 | J-2, | 8.02 | 24.0 | ug/L | 400.0 | U | 84.0 | 70-130 | 30.1 | 30 |
| 2-Butanone (Methyl Ethyl Ketone) | 393 | | 5.98 | 18.0 | ug/L | 400.0 | U | 98.2 | 70-130 | 8.22 | 30 |
| 2-Chloroethylvinyl ether | U | | 14.9 | 44.7 | ug/L | 400.0 | U | | 0-305 | | 30 |
| 2-Chlorotoluene | 362 | | 2.58 | 7.76 | ug/L | 400.0 | U | 90.4 | 70-130 | 24.9 | 30 |

Serial #: 02092016115140

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16B0097

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1602036-MSD1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| 2-Hexanone | 285 | J-2, | 8.90 | 26.7 | ug/L | 400.0 | U | 71.2 | 70-130 | 17.8 | 30 |
| 4-Chlorotoluene | 350 | | 2.80 | 8.40 | ug/L | 400.0 | U | 87.4 | 70-130 | 24.2 | 30 |
| 4-Methyl-2-pentanone | 310 | | 2.70 | 8.10 | ug/L | 400.0 | U | 77.6 | 70-130 | 5.27 | 30 |
| Acetone | 1430 | | 5.54 | 16.6 | ug/L | 2000 | U | 71.7 | 70-130 | 6.35 | 30 |
| Acrolein | 1710 | J-2, | 6.06 | 18.2 | ug/L | 2000 | U | 85.5 | 70-130 | 40.5 | 30 |
| Acrylonitrile | 317 | | 3.20 | 9.58 | ug/L | 400.0 | U | 79.2 | 70-130 | 0.633 | 30 |
| Benzene | 393 | | 0.600 | 1.80 | ug/L | 400.0 | U | 98.4 | 37-151 | 2.11 | 30 |
| Bromobenzene | 346 | | 2.26 | 6.80 | ug/L | 400.0 | U | 86.4 | 70-130 | 23.8 | 30 |
| Bromochloromethane | 331 | | 1.14 | 3.44 | ug/L | 400.0 | U | 82.8 | 70-130 | 9.29 | 30 |
| Bromodichloromethane | 361 | | 1.72 | 5.16 | ug/L | 400.0 | U | 90.2 | 35-155 | 2.53 | 30 |
| Bromoform | 324 | | 2.76 | 8.28 | ug/L | 400.0 | U | 81.0 | 45-169 | 5.41 | 30 |
| Bromomethane | 296 | | 2.64 | 7.94 | ug/L | 400.0 | U | 73.9 | 0-242 | 32.1 | 30 |
| Carbon Tetrachloride | 412 | | 1.04 | 3.12 | ug/L | 400.0 | U | 103 | 70-140 | 7.77 | 30 |
| Chlorobenzene | 372 | | 1.58 | 4.74 | ug/L | 400.0 | U | 93.0 | 37-160 | 26.5 | 30 |
| Chloroethane | 302 | | 6.16 | 18.5 | ug/L | 400.0 | U | 75.6 | 14-230 | 33.0 | 30 |
| Chloroform | 402 | | 1.54 | 4.64 | ug/L | 400.0 | U | 101 | 51-138 | 4.32 | 30 |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1602036-MSD1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| Chloromethane | 297 | | 0.960 | 2.88 | ug/L | 400.0 | U | 74.2 | 0-273 | 12.7 | 30 |
| cis-1,2-Dichloroethene | 308 | | 4.26 | 12.8 | ug/L | 400.0 | U | 77.0 | 70-130 | 9.23 | 30 |
| cis-1,3-Dichloropropene | 280 | | 1.00 | 3.02 | ug/L | 400.0 | U | 70.0 | 0-227 | 4.61 | 30 |
| Dibromochloromethane | 353 | | 1.32 | 3.98 | ug/L | 400.0 | U | 88.3 | 53-149 | 17.5 | 30 |
| Dibromomethane | 389 | | 1.14 | 3.42 | ug/L | 400.0 | U | 97.3 | 70-130 | 3.24 | 30 |
| Dichlorodifluoromethane | 439 | | 1.88 | 5.66 | ug/L | 400.0 | U | 110 | 70-130 | 15.8 | 30 |
| Ethyl Benzene | 359 | | 1.68 | 5.04 | ug/L | 400.0 | U | 89.7 | 37-162 | 26.3 | 30 |
| Hexachlorobutadiene | 429 | | 2.82 | 8.48 | ug/L | 400.0 | U | 107 | 70-130 | 14.1 | 30 |
| Isopropylbenzene | 339 | | 2.32 | 6.96 | ug/L | 400.0 | U | 84.8 | 70-130 | 23.6 | 30 |
| m,p-Xylene | 734 | | 3.36 | 10.1 | ug/L | 800.0 | U | 91.7 | 70-130 | 26.9 | 30 |
| Methylene Chloride | 288 | | 15.0 | 45.1 | ug/L | 400.0 | U | 72.0 | 0-221 | 7.22 | 30 |
| Methyl-tert-butyl ether | 413 | | 1.72 | 5.14 | ug/L | 400.0 | U | 103 | 70-130 | 13.2 | 30 |
| Naphthalene | 454 | | 11.6 | 34.8 | ug/L | 400.0 | U | 113 | 70-130 | 20.2 | 30 |
| n-Butyl Benzene | 341 | | 5.32 | 16.0 | ug/L | 400.0 | U | 85.2 | 70-130 | 6.69 | 30 |
| n-Propylbenzene | 348 | | 2.18 | 6.56 | ug/L | 400.0 | U | 87.0 | 70-130 | 23.6 | 30 |
| o-Xylene | 347 | | 1.68 | 5.06 | ug/L | 400.0 | U | 86.8 | 70-130 | 27.7 | 30 |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602036 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1602036-MSD1)** | **Source: 16B0097-01** | | Prepared: 02/01/2016 Analyzed: 02/02/2016 | | | | | | | | |
| p-Isopropyltoluene | 348 | | 3.94 | 11.8 | ug/L | 400.0 | U | 87.0 | 70-130 | 24.4 | 30 |
| sec-Butyl Benzene | 351 | | 3.54 | 10.6 | ug/L | 400.0 | U | 87.8 | 70-130 | 20.6 | 30 |
| Styrene | 405 | | 1.92 | 5.74 | ug/L | 400.0 | U | 101 | 70-130 | 25.2 | 30 |
| tert-Butylbenzene | 361 | | 3.86 | 11.6 | ug/L | 400.0 | U | 90.2 | 70-130 | 22.1 | 30 |
| Tetrachloroethene | 429 | | 1.68 | 5.06 | ug/L | 400.0 | U | 107 | 64-148 | 4.87 | 30 |
| Toluene | 376 | | 0.700 | 2.08 | ug/L | 400.0 | 0.750 | 93.8 | 47-150 | 5.30 | 30 |
| trans-1,2-Dichloroethene | 326 | | 2.14 | 6.40 | ug/L | 400.0 | U | 81.6 | 54-156 | 6.35 | 30 |
| trans-1,3-Dichloropropene | 311 | | 5.00 | 15.0 | ug/L | 400.0 | U | 77.7 | 17-183 | 3.29 | 30 |
| Trichloroethene | 364 | | 1.00 | 3.02 | ug/L | 400.0 | U | 91.1 | 71-157 | 3.45 | 30 |
| Trichlorofluoromethane | 368 | | 1.40 | 4.22 | ug/L | 400.0 | U | 92.1 | 17-181 | 18.5 | 30 |
| Vinyl chloride | 399 | | 1.68 | 5.06 | ug/L | 400.0 | U | 99.8 | 0-251 | 11.3 | 30 |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *130* | | | | ug/L | *100.0* | | *130* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *206* | | | | ug/L | *100.0* | | *206* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *141* | | | | ug/L | *100.0* | | *141* | *46-125* | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601733 - TOC SM 5310C** | | | | | | | | | | | |
| **Blank (1601733-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Total Organic Carbon | U | | 0.168 | 0.504 | mg/L | | | | - | | |
| **LCS (1601733-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Total Organic Carbon | 4.99 | | 0.168 | 0.504 | mg/L | 5.000 | | 99.8 | 80-120 | | |
| **Duplicate (1601733-DUP1)** | **Source: 16A0691-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Total Organic Carbon | U | | 0.168 | 0.504 | mg/L | | U | | - | | 20 |
| **Matrix Spike (1601733-MS1)** | **Source: 16A0691-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Total Organic Carbon | 5.15 | | 0.168 | 0.504 | mg/L | 5.000 | U | 103 | 80-120 | | |
| **Matrix Spike Dup (1601733-MSD1)** | **Source: 16A0691-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Total Organic Carbon | 5.10 | | 0.168 | 0.504 | mg/L | 5.000 | U | 102 | 80-120 | 0.976 | 20 |
| **Batch 1601744 - SM 2120B** | | | | | | | | | | | |
| **Blank (1601744-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Color | 0/5.62 | | 1.00 | 3.00 | Pt-Co | | | | - | | |

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02/09/2016 11:51

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601744 - SM 2120B** | | | | | | | | | | | |
| **LCS (1601744-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Color | 20/1.49 | | 1.00 | 3.00 | Pt-Co | 20.00 | | 100 | 90-110 | | |
| **Duplicate (1601744-DUP1)** | **Source: 16A0756-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Color | 0/8.80 | | 1.00 | 3.00 | Pt-Co | | 0/8.76 | | - | | 20 |
| **Batch 1601757 - EPA 410.4** | | | | | | | | | | | |
| **Blank (1601757-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Chemical Oxygen Demand | U | | 7.00 | 21.0 | mg/L | | | | - | | |
| **LCS (1601757-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Chemical Oxygen Demand | 505 | | 7.00 | 21.0 | mg/L | 500.0 | | 101 | 90-110 | | |
| **Duplicate (1601757-DUP1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Chemical Oxygen Demand | 18.7 | I | 7.00 | 21.0 | mg/L | | 18.7 | | - | 0.00 | 20 |
| **Matrix Spike (1601757-MS1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Chemical Oxygen Demand | 514 | | 7.00 | 21.0 | mg/L | 500.0 | 18.7 | 99.1 | 90-110 | | |

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**Reported:**
02/09/2016 11:51

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601786 - SM5540C** | | | | | | | | | | | |
| **Blank (1601786-BLK1)** | | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | U | | 0.0603 | 0.181 | mg/L | | | | - | | |
| **LCS (1601786-BS1)** | | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.490 | | 0.0603 | 0.181 | mg/L | 0.5000 | | 98.0 | 90-110 | | |
| **Duplicate (1601786-DUP1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | U | | 0.0603 | 0.181 | mg/L | | U | | - | | 20 |
| **Matrix Spike (1601786-MS1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.499 | | 0.0603 | 0.181 | mg/L | 0.5000 | U | 99.8 | 90-110 | | |
| **Matrix Spike Dup (1601786-MSD1)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.504 | | 0.0603 | 0.181 | mg/L | 0.5000 | U | 101 | 90-110 | 0.997 | 20 |
| **Batch 1601787 - EPA 300.0** | | | | | | | | | | | |
| **Blank (1601787-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Bromide | U | | 0.0690 | 0.206 | mg/L | | | | - | | |
| Fluoride | U | | 0.0210 | 0.0630 | mg/L | | | | - | | |

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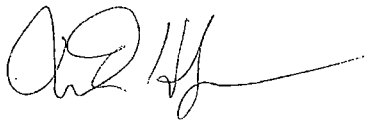

Tom Helton For Phoebe Brown, Central Lab Manager

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601787 - EPA 300.0** | | | | | | | | | | | |
| **Blank (1601787-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Nitrate as N | U | | 0.0870 | 0.260 | mg/L | | | | - | | |
| Nitrite as N | U | | 0.0480 | 0.150 | mg/L | | | | - | | |
| Sulfate | U | | 0.335 | 1.00 | mg/L | | | | - | | |
| **LCS (1601787-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Bromide | 4.69 | | 0.0690 | 0.206 | mg/L | 5.000 | | 93.8 | 90-110 | | |
| Fluoride | 2.49 | | 0.0210 | 0.0630 | mg/L | 2.500 | | 99.6 | 90-110 | | |
| Nitrate as N | 7.48 | | 0.0870 | 0.260 | mg/L | 7.500 | | 100 | 90-110 | | |
| Nitrite as N | 7.40 | | 0.0480 | 0.150 | mg/L | 7.500 | | 98.7 | 90-110 | | |
| Sulfate | 49.7 | | 0.335 | 1.00 | mg/L | 50.00 | | 99.4 | 90-110 | | |
| **Duplicate (1601787-DUP1)** | **Source: 16A0774-02** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Bromide | U | | 0.0690 | 0.206 | mg/L | | U | | - | | 20 |
| Fluoride | 0.108 | | 0.0210 | 0.0630 | mg/L | | 0.0990 | | - | 8.70 | 20 |
| Nitrate as N | 0.176 | I | 0.0870 | 0.260 | mg/L | | 0.172 | | - | 2 | 20 |
| Nitrite as N | U | | 0.0480 | 0.150 | mg/L | | U | | - | | 20 |
| Sulfate | 9.79 | | 0.335 | 1.00 | mg/L | | 9.86 | | - | 0.712 | 20 |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16B0097

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
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## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601787 - EPA 300.0** | | | | | | | | | | | |
| **Matrix Spike (1601787-MS1)** | **Source: 16A0774-02** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Bromide | 4.82 | | 0.0690 | 0.206 | mg/L | 5.000 | U | 96.4 | 90-110 | | |
| Fluoride | 5.20 | | 0.0210 | 0.0630 | mg/L | 5.000 | 0.0990 | 102 | 90-110 | | |
| Nitrate as N | 5.10 | | 0.0870 | 0.260 | mg/L | 5.000 | 0.172 | 99 | 90-110 | | |
| Nitrite as N | 5.08 | | 0.0480 | 0.150 | mg/L | 5.000 | U | 102 | 90-110 | | |
| Sulfate | 59.7 | | 0.335 | 1.00 | mg/L | 50.00 | 9.86 | 99.7 | 90-110 | | |
| **Matrix Spike (1601787-MS2)** | **Source: 16A0777-04** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Bromide | 9.68 | | 0.138 | 0.412 | mg/L | 10.00 | U | 96.8 | 90-110 | | |
| Fluoride | 10.5 | | 0.0420 | 0.126 | mg/L | 10.00 | 0.177 | 103 | 90-110 | | |
| Nitrate as N | 10.1 | | 0.174 | 0.520 | mg/L | 10.00 | 0.196 | 99 | 90-110 | | |
| Nitrite as N | 10.1 | | 0.0960 | 0.300 | mg/L | 10.00 | U | 101 | 90-110 | | |
| Sulfate | 117 | | 0.670 | 2.01 | mg/L | 100.0 | 15.0 | 102 | 90-110 | | |
| **Batch 1601790 - TSS SM 2540D** | | | | | | | | | | | |
| **Blank (1601790-BLK1)** | | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |
| Total Suspended Solids | U | | 1.00 | 3.00 | mg/L | | | | - | | |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601790 - TSS SM 2540D** | | | | | | | | | | | |
| **LCS (1601790-BS1)** | | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |
| Total Suspended Solids | 96.0 | | 1.00 | 3.00 | mg/L | 100.0 | | 96.0 | 70-130 | | |
| **Duplicate (1601790-DUP1)** | **Source: 16A0753-02** | | Prepared: 01/28/2016 Analyzed: 01/29/2016 | | | | | | | | |
| Total Suspended Solids | 50.0 | | 1.00 | 3.00 | mg/L | | 56.0 | | - | 11.3 | 20 |
| **Duplicate (1601790-DUP2)** | **Source: 16A0588-01** | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Total Suspended Solids | 6.50 | | 1.00 | 3.00 | mg/L | | 7.00 | | - | 7.41 | 20 |
| **Batch 1601793 - EPA 335.4** | | | | | | | | | | | |
| **Blank (1601793-BLK1)** | | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | U | | 0.00230 | 0.00690 | mg/L | | | | - | | |
| **LCS (1601793-BS1)** | | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.187 | | 0.00230 | 0.00690 | mg/L | 0.2000 | | 93.5 | 90-110 | | |
| **Duplicate (1601793-DUP1)** | **Source: 16A0561-01** | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.00320 | I | 0.00230 | 0.00690 | mg/L | | 0.00290 | | - | 9.84 | 20 |

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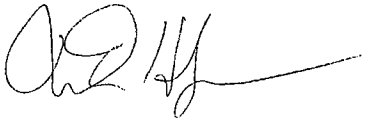
FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601793 - EPA 335.4** | | | | | | | | | | | |
| **Matrix Spike (1601793-MS1)** | **Source: 16A0561-01** | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.197 | | 0.00230 | 0.00690 | mg/L | 0.2000 | 0.00290 | 97.0 | 90-110 | | |
| **Matrix Spike (1601793-MS2)** | **Source: 16B0097-01** | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.192 | | 0.00230 | 0.00690 | mg/L | 0.2000 | U | 96.0 | 90-110 | | |
| **Batch 1602051 - EPA 120.1** | | | | | | | | | | | |
| **Blank (1602051-BLK1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Conductivity | U | | 1.00 | 3.00 | uS/cm | | | | - | | |
| **LCS (1602051-BS1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Conductivity | 1950 | | 1.00 | 3.00 | uS/cm | 2000 | | 97.5 | 90-110 | | |
| **Duplicate (1602051-DUP1)** | **Source: 16B0016-01** | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Conductivity | 2980 | | 1.00 | 3.00 | uS/cm | | 2980 | | - | 0.00 | 20 |
| **Batch 1602091 - EPA 350.1** | | | | | | | | | | | |
| **Blank (1602091-BLK1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |

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FPL Central Lab

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**Reported:**
02/09/2016 11:51

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602091 - EPA 350.1** | | | | | | | | | | | |
| **Blank (1602091-BLK1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Ammonia as N | U | | 0.0140 | 0.0420 | mg/L | | | | - | | |
| **LCS (1602091-BS1)** | | | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Ammonia as N | 0.907 | | 0.0140 | 0.0420 | mg/L | 1.000 | | 90.7 | 90-110 | | |
| **Duplicate (1602091-DUP1)** | | **Source: 16A0740-05** | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Ammonia as N | 0.0863 | | 0.0140 | 0.0420 | mg/L | | 0.105 | | - | 19.6 | 20 |
| **Matrix Spike (1602091-MS1)** | | **Source: 16A0740-05** | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Ammonia as N | 1.15 | | 0.0140 | 0.0420 | mg/L | 1.000 | 0.105 | 104 | 90-110 | | |
| **Matrix Spike (1602091-MS2)** | | **Source: 16A0777-01** | Prepared & Analyzed: 02/02/2016 | | | | | | | | |
| Ammonia as N | 0.990 | | 0.0140 | 0.0420 | mg/L | 1.000 | U | 99.0 | 90-110 | | |
| **Batch 1602138 - EPA 365.4** | | | | | | | | | | | |
| **Blank (1602138-BLK1)** | | | Prepared & Analyzed: 02/03/2016 | | | | | | | | |
| Phosphorus-Total | U | | 0.0640 | 0.192 | mg/L | | | | - | | |
| Total Kjeldahl Nitrogen | U | | 0.0700 | 0.210 | mg/L | | | | - | | |

Serial #: 02092016115140

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16B0097

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602138 - EPA 351.2** | | | | | | | | | | | |
| **LCS (1602138-BS1)** | | | Prepared & Analyzed: 02/03/2016 | | | | | | | | |
| Phosphorus-Total | 2.34 | | 0.0640 | 0.192 | mg/L | 2.500 | | 93.6 | 90-110 | | |
| Total Kjeldahl Nitrogen | 4.93 | | 0.0700 | 0.210 | mg/L | 5.000 | | 99 | 90-110 | | |
| **Duplicate (1602138-DUP1)** | **Source: 16A0740-05** | | Prepared & Analyzed: 02/03/2016 | | | | | | | | |
| Phosphorus-Total | 0.177 | I | 0.0640 | 0.192 | mg/L | | 0.177 | | - | 0.00 | 20 |
| Total Kjeldahl Nitrogen | 1.82 | | 0.0700 | 0.210 | mg/L | | 1.84 | | - | 1 | 20 |
| **Matrix Spike (1602138-MS1)** | **Source: 16A0740-05** | | Prepared & Analyzed: 02/03/2016 | | | | | | | | |
| Phosphorus-Total | 2.65 | | 0.0640 | 0.192 | mg/L | 2.500 | 0.177 | 98.9 | 90-110 | | |
| Total Kjeldahl Nitrogen | 6.91 | | 0.0700 | 0.210 | mg/L | 5.000 | 1.84 | 101 | 90-110 | | |
| **Matrix Spike (1602138-MS2)** | **Source: 16A0777-01** | | Prepared & Analyzed: 02/03/2016 | | | | | | | | |
| Phosphorus-Total | 2.52 | | 0.0640 | 0.192 | mg/L | 2.500 | U | 101 | 90-110 | | |
| Total Kjeldahl Nitrogen | 6.66 | J-3, | 0.0700 | 0.210 | mg/L | 5.000 | 0.544 | 122 | 90-110 | | |

Serial #: 02092016115140

FPL Central Lab

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **16B0097-01 I-003 (LRW)** | | |
| | A | 40 mL Voa Vial - HCl |
| | B | 40 mL Voa Vial - HCl |
| | C | 40mL Amber H3PO4+CuSO4 |
| | D | 40mL Clear NaOH |
| | E | 500mL Clear Glass - Unpres |
| | F | Amber H2SO4 - 1000mL |
| | G | Amber H2SO4 - 1000mL |
| | H | Amber Unpres - 1000mL |
| | I | Amber Unpres - 1000mL |
| | J | Plastic 250 mL - HN03 |
| | K | Poly H2SO4 - 250mL |
| | L | Poly HNO3 - 250 mL |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

| | |
|---|---|
| M | Poly HNO3 - 500mL |
| N | Poly Unpres - 1000mL |
| O | Poly Unpres - 500mL |
| P | VOA Vial - H2SO4 |
| Q | VOA Vial - H2SO4 |

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:51

Attn: Chrissi-lee Williams

## Notes and Definitions

| | |
|---|---|
| J-3 | The matrix spike recovery exceeded method acceptance limits indicating matrix interference. |
| J-2 | The laboratory control sample recovery exceeded method acceptance limits. |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 02092016115140

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS – OUTFALL I-005

(FORM 2CS)

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| Antimony | U | | | 1.94 | 5.82 | ug/L | 1 | 1601559 | 1/22/2016 10:15 | MAZ | 1/22/2016 12:04 | EPA 200.7 | |
| **Boron** | **2.03** | I | | 0.800 | 2.40 | ug/L | 1 | 1601559 | 1/22/2016 10:15 | MAZ | 1/22/2016 12:04 | EPA 200.7 | |
| Molybdenum | U | | | 1.09 | 3.27 | ug/L | 1 | 1601559 | 1/22/2016 10:15 | MAZ | 1/22/2016 12:04 | EPA 200.7 | |
| Tin | U | | | 7.97 | 23.9 | ug/L | 1 | 1601623 | 1/25/2016 8:00 | IN | 1/25/2016 11:30 | EPA 200.7 | |
| Titanium | U | | | 0.120 | 0.360 | ug/L | 1 | 1601559 | 1/22/2016 10:15 | MAZ | 1/22/2016 12:04 | EPA 200.7 | |
| **Microbiology** | | | | | | | | | | | | | |
| **Carbonaceous BOD** | **12.1** | | | 2.00 | 6.00 | mg/L | 1 | 1601668 | 1/22/2016 15:30 | SC | 1/27/2016 15:30 | CBOD SM5210B | |
| **Radiochemical** | | | | | | | | | | | | | |
| **Gross Alpha** | **0.79±0.24** | I | | 0.79 | 2.37 | pCi/L | 1 | 1602134 | 2/2/2016 11:00 | IN | 2/8/2016 11:35 | EPA 900.0 | |
| **Gross Beta** | **1.56±0.47** | I | | 1.56 | 4.68 | pCi/L | 1 | 1602134 | 2/2/2016 11:00 | IN | 2/8/2016 11:35 | EPA 900.0 | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |

Serial #: 02092016111339

FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | | 1.30 | 3.89 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 1,2-Dichlorobenzene | U | | | 1.04 | 3.12 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | | 0.673 | 2.02 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 1,3-Dichlorobenzene | U | | | 1.27 | 3.80 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 1,4-Dichlorobenzene | U | | | 1.20 | 3.61 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,3-Dichloroaniline | U | | | 0.520 | 1.56 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,4,5-Trichlorophenol | U | | | 0.694 | 2.08 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,4,6-Trichlorophenol | U | | | 0.571 | 1.71 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,4-Dichlorophenol | U | | | 0.643 | 1.93 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,4-Dimethylphenol | U | | | 0.500 | 1.50 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,4-Dinitrophenol | U | | | 0.163 | 0.490 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,4-Dinitrotoluene | U | | | 0.306 | 0.918 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 2,6-Dichlorophenol | U | | | 0.242 | 0.727 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2,6-Dinitrotoluene | U | | | 0.531 | 1.59 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2-Chloronaphthalene | U | | | 0.561 | 1.68 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2-Chlorophenol | U | | | 0.908 | 2.72 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2-Methylnaphthalene | U | | | 0.0245 | 0.0735 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2-Methylphenol | U | | | 0.837 | 2.51 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 2-Nitrophenol | U | | | 0.898 | 2.69 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 3,3'-Dichlorobenzidine | U | | | 0.316 | 0.949 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 4,6-Dinitro-2-methylphenol | U | | | 0.276 | 0.827 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 4-Bromophenyl phenyl ether | U | | | 0.541 | 1.62 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 4-Chloro-3-methylphenol | U | | | 0.949 | 2.85 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| 4-Chlorophenyl phenyl ether | U | | | 0.592 | 1.78 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| 4-Nitrophenol | U | | | 0.714 | 2.14 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Acenaphthene | U | | | 0.500 | 1.50 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Acenaphthylene | U | | | 0.653 | 1.96 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Aniline | U | | | 0.908 | 2.72 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Anthracene | U | | | 0.510 | 1.53 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| a-Terpineol | U | | | 0.343 | 1.03 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Benzidine | U | | | 0.265 | 0.796 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Benzo (a) anthracene | U | | | 0.184 | 0.551 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Benzo (a) pyrene | U | | | 0.286 | 0.857 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Benzo (b) fluoranthene | U | | | 0.265 | 0.796 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Benzo (g,h,i) perylene | U | | | 0.214 | 0.643 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Benzo (k) fluoranthene | U | | | 0.490 | 1.47 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| Bis(2-chloroethoxy)methane | U | | | 0.592 | 1.78 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Bis(2-chloroethyl)ether | U | | | 0.837 | 2.51 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Bis(2-chloroisopropyl)ether | U | | | 0.990 | 2.97 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| **Bis(2-ethylhexyl)phthalate** | **10.5** | | | 1.35 | 4.04 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Butyl benzyl phthalate | U | | | 0.194 | 0.582 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Chrysene | U | | | 0.306 | 0.918 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Dibenz (a,h) anthracene | U | | | 0.163 | 0.592 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Dibenzofuran | U | | | 0.490 | 1.47 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Diethyl phthalate | U | | | 0.204 | 0.612 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Dimethyl phthalate | U | | | 0.296 | 0.888 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Di-n-butyl phthalate | U | | | 0.245 | 0.735 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Di-n-octyl phthalate | U | | | 0.173 | 0.520 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| Fluoranthene | U | | | 0.286 | 0.857 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Fluorene | U | | | 0.531 | 1.59 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Hexachlorobenzene | U | | | 0.531 | 1.59 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Hexachlorobutadiene | U | | | 0.541 | 1.62 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Hexachlorocyclopentadiene | U | | | 0.704 | 2.11 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Hexachloroethane | U | | | 0.827 | 2.48 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Indeno (1,2,3-cd) pyrene | U | | | 0.153 | 0.459 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Isophorone | U | | | 0.694 | 2.08 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| m,p Cresol | U | | | 0.336 | 1.01 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Naphthalene | U | | | 0.714 | 2.14 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| n-Decane | U | | | 0.249 | 0.748 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Nitrobenzene | U | | | 0.786 | 2.36 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |

Serial #: 02092016111339

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| N-Nitrosodimethylamine | U | | | 1.13 | 3.40 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| N-Nitrosodi-n-propylamine | U | | | 1.12 | 3.37 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| N-Nitrosodiphenylamine | U | | | 0.388 | 1.16 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| n-Octadecane | U | | | 1.63 | 4.88 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Pentachlorophenol | U | | | 0.327 | 0.980 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Phenanthrene | U | | | 0.459 | 1.38 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Phenol | U | | | 0.592 | 1.78 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Pyrene | U | | | 0.224 | 0.673 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| Pyridine | U | | | 0.541 | 1.62 | ug/L | 1 | 1601746 | 1/28/2016 9:10 | AC | 1/29/2016 2:22 | EPA 625 | |
| *Surrogate: 2,4,6-Tribromophenol* | | | | | *78.7 %* | | *50-150* | *1601746* | *1/28/2016 9:10* | | *1/29/2016 2:22* | *EPA 625* | |
| *Surrogate: 2-Fluorobiphenyl* | | | | | *71.8 %* | | *50-150* | *1601746* | *1/28/2016 9:10* | | *1/29/2016 2:22* | *EPA 625* | |
| *Surrogate: 2-Fluorophenol* | | | | | *54.0 %* | | *30-110* | *1601746* | *1/28/2016 9:10* | | *1/29/2016 2:22* | *EPA 625* | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **SemiVolatile GC-MS** | | | | | | | | | | | | | |
| *Surrogate: Nitrobenzene-d5* | | | | | *66.8 %* | | *50-150* | *1601746* | *1/28/2016 9:10* | | *1/29/2016 2:22* | *EPA 625* | |
| *Surrogate: Phenol-d6* | | | | | *34.7 %* | | *30-110* | *1601746* | *1/28/2016 9:10* | | *1/29/2016 2:22* | *EPA 625* | |
| *Surrogate: p-Terphenyl* | | | | | *73.1 %* | | *50-150* | *1601746* | *1/28/2016 9:10* | | *1/29/2016 2:22* | *EPA 625* | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | U | | | 0.0840 | 0.237 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,1,1-Trichloroethane | U | | | 0.0380 | 0.113 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,1,2,2-Tetrachloroethane | U | | | 0.0690 | 0.207 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,1,2-Trichloroethane | U | | | 0.0750 | 0.226 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,1-Dichloroethane | U | | | 0.204 | 0.612 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,1-Dichloroethene | U | | | 0.0590 | 0.176 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,1-Dichloropropene | U | | | 0.120 | 0.359 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2,3-Trichlorobenzene | U | | | 0.250 | 0.751 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,2,3-Trichloropropane | U | | | 0.122 | 0.366 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2,4-Trichlorobenzene | U | | | 0.248 | 0.745 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2,4-Trimethylbenzene | U | | | 0.211 | 0.633 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2-Dibromo-3-chloropropane | U | | | 0.236 | 0.708 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2-Dibromoethane (EDB) | U | | | 0.0710 | 0.213 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2-Dichlorobenzene | U | | | 0.193 | 0.580 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2-Dichloroethane | U | | | 0.0360 | 0.109 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,2-Dichloropropane | U | | | 0.0450 | 0.136 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,3,5-Trimethylbenzene | U | | | 0.135 | 0.405 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,3-Dichlorobenzene | U | | | 0.195 | 0.585 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,3-Dichloropropane | U | | | 0.0730 | 0.220 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 1,4-Dichlorobenzene | U | | | 0.257 | 0.770 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 2,2-Dichloropropane | U | | | 0.401 | 1.20 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 2-Butanone (Methyl Ethyl Ketone) | U | | | 0.299 | 0.898 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 2-Chloroethylvinyl ether | U | | | 0.745 | 2.24 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 2-Chlorotoluene | U | | | 0.129 | 0.388 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 2-Hexanone | U | J-2 | | 0.445 | 1.34 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 4-Chlorotoluene | U | | | 0.140 | 0.420 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| 4-Methyl-2-pentanone | U | | | 0.135 | 0.405 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Acetone | U | | | 0.277 | 0.832 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Acrolein | U | | | 0.303 | 0.909 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Acrylonitrile | U | | | 0.160 | 0.479 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Benzene | U | | | 0.0300 | 0.0900 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Bromobenzene | U | | | 0.113 | 0.340 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Bromochloromethane | U | | | 0.0570 | 0.172 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Bromodichloromethane | U | | | 0.0860 | 0.258 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Bromoform | U | | | 0.138 | 0.414 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Bromomethane | U | | | 0.132 | 0.397 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Carbon Tetrachloride | U | | | 0.0520 | 0.156 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Chlorobenzene | U | | | 0.0790 | 0.237 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Chloroethane | U | | | 0.308 | 0.924 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Chloroform | U | | | 0.0770 | 0.232 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Chloromethane | U | | | 0.0480 | 0.144 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| cis-1,2-Dichloroethene | U | | | 0.213 | 0.639 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| cis-1,3-Dichloropropene | U | | | 0.0500 | 0.151 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Dibromochloromethane | U | | | 0.0660 | 0.199 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Dibromomethane | U | | | 0.0570 | 0.171 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Dichlorodifluoromethane | U | | | 0.0940 | 0.283 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Ethyl Benzene | U | | | 0.0840 | 0.252 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Hexachlorobutadiene | U | | | 0.141 | 0.424 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Isopropylbenzene | U | | | 0.116 | 0.348 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| m,p-Xylene | U | | | 0.168 | 0.505 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Methylene Chloride | U | | | 0.751 | 2.25 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Methyl-tert-butyl ether | U | | | 0.0860 | 0.257 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Naphthalene | U | J-2 | | 0.579 | 1.74 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| n-Butyl Benzene | U | | | 0.266 | 0.798 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| n-Propylbenzene | U | | | 0.109 | 0.328 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| o-Xylene | U | | | 0.0840 | 0.253 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |

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FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| p-Isopropyltoluene | U | | | 0.197 | 0.592 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| sec-Butyl Benzene | U | | | 0.177 | 0.531 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Styrene | U | | | 0.0960 | 0.287 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| tert-Butylbenzene | U | | | 0.193 | 0.578 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Tetrachloroethene | U | | | 0.0840 | 0.253 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Toluene | U | | | 0.0350 | 0.104 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| trans-1,2-Dichloroethene | U | | | 0.107 | 0.320 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| trans-1,3-Dichloropropene | U | | | 0.250 | 0.751 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Trichloroethene | U | | | 0.0500 | 0.151 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Trichlorofluoromethane | U | | | 0.0700 | 0.211 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| Vinyl chloride | U | | | 0.0840 | 0.253 | ug/L | 1 | 1601587 | 1/22/2016 16:32 | BBL | 1/22/2016 19:34 | EPA 624 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | | | *66.0 %* | | *50-110* | *1601587* | *1/22/2016 16:32* | | *1/22/2016 19:34* | *EPA 624* | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental TNI #: 86006** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| *Surrogate: 2-Bromo-1-chloropropane* | | | | | *67.8 %* | | *74-110* | *1601587* | *1/22/2016 16:32* | | *1/22/2016 19:34* | *EPA 624* | |
| *Surrogate: 4-Bromofluorobenzene* | | | | | *69.8 %* | | *46-125* | *1601587* | *1/22/2016 16:32* | | *1/22/2016 19:34* | *EPA 624* | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| Cyanide (total) | U | | | 0.00230 | 0.00690 | mg/L | 1 | 1601793 | 1/29/2016 16:45 | SA | 1/29/2016 17:38 | EPA 335.4 | |
| **Total Organic Carbon** | **4.82** | | | 0.168 | 0.504 | mg/L | 1 | 1601556 | 1/22/2016 11:44 | SA | 1/22/2016 13:41 | TOC SM 5310C | |
| **Analyzed at: Florida-Spectrum TNI #: E87671** | | | | | | | | | | | | | |
| **Subcontracted Analyses** | | | | | | | | | | | | | |
| Phenolics | U | | | 0.0340 | 0.102 | mg/L | 1 | 42954 | 1/25/2016 16:01 | SUB | 2/3/2016 16:01 | EPA 420.1 | |

Serial #: 02092016111339

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02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Ammonia as N** | **6.62** | V | J | 0.0500 | 0.200 | mg/L | 5 | F16A264 | 1/23/2016 8:36 | CMS | 1/25/2016 10:47 | EPA 350.1 | NELAC |
| **Chemical Oxygen Demand** | **18** | | J | 3.1 | 12 | mg/L | 1 | F16B002 | 2/1/2016 7:46 | MV | 2/1/2016 14:32 | SM5220D | NELAC |
| **Nitrate/Nitrite as N** | **0.22** | | N | 0.012 | 0.050 | mg/L | 1 | F16A203 | 1/22/2016 14:54 | TEH | 1/22/2016 14:54 | SM4500NO3-F | NELAC |
| Oil & Grease (HEM) | U | A | F | 1.0 | 4.1 | mg/L | 1 | F16A266 | 1/23/2016 0:00 | CMS | 1/23/2016 0:00 | EPA 1664A | NELAC |
| Phosphorus-Total | U | J1 | J | 0.0034 | 0.025 | mg/L | 1 | F16A316 | 1/27/2016 16:33 | mv | 1/27/2016 16:33 | SM4500-P F | NELAC |
| **Specific conductance** | **28** | | N | 1.0 | 1.0 | umhos/cm | 1 | F16A311 | 1/26/2016 15:54 | CMS | 1/26/2016 15:54 | EPA 120.1 | NELAC |
| **Total Kjeldahl Nitrogen** | **8.4** | J2 | J | 0.92 | 3.8 | mg/L | 5 | F16A312 | 1/27/2016 7:23 | mv | 1/27/2016 15:13 | EPA 351.2 | NELAC |
| **Total Nitrogen** | **8.7** | | | 0.94 | 3.8 | mg/L | 5 | [CALC] | 1/27/2016 7:23 | mv | 1/27/2016 15:13 | Calc. | |
| Total Suspended Solids | U | | N | 3.0 | 12 | mg/L | 1 | F16A292 | 1/26/2016 13:00 | CMS | 1/26/2016 13:00 | SM2540 D | NELAC |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Metals (Total)** | | | | | | | | | | | | | |
| Arsenic | U | | K | 3.6 | 10 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| Beryllium | U | | K | 0.11 | 1.0 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| Cadmium | U | | K | 0.10 | 1.0 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| **Chromium** | **0.28** | I | K | 0.19 | 1.0 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| **Copper** | **0.65** | I | K | 0.40 | 2.0 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| **Iron** | **3.4** | I,V | K | 2.7 | 10 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| Lead | U | | K | 1.6 | 5.0 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| **Magnesium** | **0.033** | I | K | 0.028 | 0.10 | mg/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| Nickel | U | | K | 0.58 | 2.0 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| Selenium | U | | K | 3.7 | 10 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| Silver | U | | K | 0.82 | 5.0 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| Thallium | U | | K | 1.5 | 10 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |

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**Client Sample ID: I005 Steam Generator Blowdown**
**Client Sample ID (cont):**
**Sampled: 1/21/2016 12:30:00PM Received: 1/21/2016 3:25:00PM**
**Lab Sample #: 16A0398-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Metals (Total)** | | | | | | | | | | | | | |
| **Zinc** | **4.7** | I,V | K | 0.39 | 10 | ug/L | 1 | F16A265 | 1/23/2016 9:04 | MV | 1/25/2016 13:16 | EPA 200.7 | NELAC |
| **Analyzed at: Jupiter Environmental Labs TNI # E86546** | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| **Mercury** | **0.00126** | | | 0.000250 | 0.00100 | ug/L | 1 | MHG1813 | 1/22/2016 16:38 | SUB | 1/25/2016 14:21 | EPA 1631E | |

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**Reported:**
02/09/2016 11:13

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A203 - SM4500NO3-F** | | | | | | | | | | | |
| **Blank (F16A203-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate/Nitrite as N | U | | 0.012 | 0.050 | mg/L | | | | | | |
| **LCS (F16A203-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate/Nitrite as N | 5.79 | | | | mg/L | 6.290 | | 92 | 90-110 | | |
| **LCS Dup (F16A203-BSD1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate/Nitrite as N | 6.42 | | | | mg/L | 6.290 | | 102 | 90-110 | 10 | 20 |
| **Matrix Spike (F16A203-MS1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate/Nitrite as N | 0.998 | | 0.012 | 0.050 | mg/L | 1.000 | U | 100 | 90-110 | | |
| **Matrix Spike Dup (F16A203-MSD1)** | **Source: 16A0377-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Nitrate/Nitrite as N | 0.957 | | 0.012 | 0.050 | mg/L | 1.000 | U | 96 | 90-110 | 4 | 20 |
| **Batch F16A264 - EPA 350.1** | | | | | | | | | | | |
| **Blank (F16A264-BLK1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 0.0209 | I | 0.0100 | 0.0400 | mg/L | | | | | | |

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**Reported:**
02/09/2016 11:13

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A264 - EPA 350.1** | | | | | | | | | | | |
| **LCS (F16A264-BS1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 10.6 | | | | mg/L | 10.40 | | 102 | 90-110 | | |
| **Duplicate (F16A264-DUP1)** | | **Source: 16A0032-01** | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 0.0564 | | 0.0100 | 0.0400 | mg/L | | 0.0618 | | | 9 | 20 |
| **Matrix Spike (F16A264-MS1)** | | **Source: 16A0032-01** | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Ammonia as N | 1.02 | | 0.0100 | 0.0400 | mg/L | 0.9990 | 0.0618 | 96 | 90-110 | | |
| **Batch F16A266 - EPA 1664A** | | | | | | | | | | | |
| **Blank (F16A266-BLK1)** | | | Prepared & Analyzed: 01/23/2016 | | | | | | | | |
| Oil & Grease (HEM) | U | | 1.0 | 4.1 | mg/L | | | | | | |
| **LCS (F16A266-BS1)** | | | Prepared & Analyzed: 01/23/2016 | | | | | | | | |
| Oil & Grease (HEM) | 38.6 | | | | mg/L | 40.00 | | 96 | 78-114 | | |
| **LCS Dup (F16A266-BSD1)** | | | Prepared & Analyzed: 01/23/2016 | | | | | | | | |
| Oil & Grease (HEM) | 37.6 | | | | mg/L | 40.00 | | 94 | 78-114 | 3 | 18 |

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02/09/2016 11:13

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A292 - SM2540 D** | | | | | | | | | | | |
| **Blank (F16A292-BLK1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Total Suspended Solids | U | | 3.0 | 12 | mg/L | | | | | | |
| **LCS (F16A292-BS1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Total Suspended Solids | 81.0 | | | | mg/L | 78.30 | | 103 | 80-120 | | |
| **LCS Dup (F16A292-BSD1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Total Suspended Solids | 81.0 | | | | mg/L | 78.30 | | 103 | 80-120 | 0 | 20 |
| **Duplicate (F16A292-DUP1)** | | **Source: 16A0398-01** | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Total Suspended Solids | U | | 3.0 | 12 | mg/L | | U | | | | 5 |
| **Batch F16A311 - EPA 120.1** | | | | | | | | | | | |
| **Blank (F16A311-BLK1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | U | | 1.0 | 1.0 | umhos/cm | | | | | | |
| **LCS (F16A311-BS1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | 245 | | | | umhos/cm | 234.0 | | 105 | 80-120 | | |

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02/09/2016 11:13

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A311 - EPA 120.1** | | | | | | | | | | | |
| **LCS Dup (F16A311-BSD1)** | | | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | 244 | | | | umhos/cm | 234.0 | | 104 | 80-120 | 0.4 | 20 |
| **Duplicate (F16A311-DUP1)** | | **Source: 16A0377-01** | Prepared & Analyzed: 01/26/2016 | | | | | | | | |
| Specific conductance | 51900 | | 1.0 | 1.0 | umhos/cm | | 51800 | | | 0.2 | 20 |
| **Batch F16A312 - EPA 351.2** | | | | | | | | | | | |
| **Blank (F16A312-BLK1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | U | | 0.18 | 0.75 | mg/L | | | | | | |
| **LCS (F16A312-BS1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 1.91 | | 0.18 | 0.75 | mg/L | 1.998 | | 96 | 90-110 | | |
| **Matrix Spike (F16A312-MS1)** | | **Source: 16A0398-01** | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 11.3 | J2, | 0.92 | 3.8 | mg/L | 1.998 | 8.42 | 146 | 90-110 | | |
| **Matrix Spike Dup (F16A312-MSD1)** | | **Source: 16A0398-01** | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 11.4 | J2, | 0.92 | 3.8 | mg/L | 1.998 | 8.42 | 148 | 90-110 | 0.4 | 20 |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A316 - SM4500-P F** | | | | | | | | | | | |
| **Blank (F16A316-BLK1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | U | | 0.0034 | 0.025 | mg/L | | | | | | |
| **LCS (F16A316-BS1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.260 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 105 | 90-110 | | |
| **LCS Dup (F16A316-BSD1)** | | | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.264 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 106 | 90-110 | 2 | 20 |
| **Matrix Spike (F16A316-MS1)** | | **Source: 16A0398-01** | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.278 | J1, | 0.0034 | 0.025 | mg/L | 0.2480 | U | 112 | 90-110 | | |
| **Matrix Spike Dup (F16A316-MSD1)** | | **Source: 16A0398-01** | Prepared & Analyzed: 01/27/2016 | | | | | | | | |
| Phosphorus-Total | 0.290 | J1, | 0.0034 | 0.025 | mg/L | 0.2480 | U | 117 | 90-110 | 4 | 20 |
| **Batch F16B002 - SM5220D** | | | | | | | | | | | |
| **Blank (F16B002-BLK1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Chemical Oxygen Demand | U | | 3.1 | 12 | mg/L | | | | | | |

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02/09/2016 11:13

Attn: Chrissi-lee Williams

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16B002 - SM5220D** | | | | | | | | | | | |
| **LCS (F16B002-BS1)** | | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Chemical Oxygen Demand | 50.5 | | | | mg/L | 52.80 | | 96 | 95-105 | | |
| **Matrix Spike (F16B002-MS1)** | **Source: 16A0398-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Chemical Oxygen Demand | 37.0 | J1, | 3.1 | 12 | mg/L | 26.40 | 18.2 | 71 | 95-105 | | |
| **Matrix Spike Dup (F16B002-MSD1)** | **Source: 16A0398-01** | | Prepared & Analyzed: 02/01/2016 | | | | | | | | |
| Chemical Oxygen Demand | 36.9 | J1, | 3.1 | 12 | mg/L | 26.40 | 18.2 | 71 | 95-105 | 0.3 | 20 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Blank (F16A265-BLK1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | U | | 3.6 | 10 | ug/L | | | | | | |
| Beryllium | U | | 0.11 | 1.0 | ug/L | | | | | | |
| Cadmium | U | | 0.10 | 1.0 | ug/L | | | | | | |
| Chromium | U | | 0.19 | 1.0 | ug/L | | | | | | |
| Copper | U | | 0.40 | 2.0 | ug/L | | | | | | |
| Iron | 3.55 | I | 2.7 | 10 | ug/L | | | | | | |
| Lead | 1.91 | I | 1.6 | 5.0 | ug/L | | | | | | |
| Magnesium | U | | 0.028 | 0.10 | mg/L | | | | | | |
| Nickel | U | | 0.58 | 2.0 | ug/L | | | | | | |
| Selenium | U | | 3.7 | 10 | ug/L | | | | | | |
| Silver | U | | 0.82 | 5.0 | ug/L | | | | | | |
| Thallium | U | | 1.5 | 10 | ug/L | | | | | | |
| Zinc | 0.616 | I | 0.39 | 10 | ug/L | | | | | | |
| **LCS (F16A265-BS1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 98.7 | | 3.6 | 10 | ug/L | 100.0 | | 99 | 85-115 | | |

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**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **LCS (F16A265-BS1)** | | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Beryllium | 103 | | 0.11 | 1.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Cadmium | 98.2 | | 0.10 | 1.0 | ug/L | 100.0 | | 98 | 85-115 | | |
| Chromium | 99.0 | | 0.19 | 1.0 | ug/L | 100.0 | | 99 | 85-115 | | |
| Copper | 103 | | 0.40 | 2.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Iron | 1020 | | 2.7 | 10 | ug/L | 1000 | | 102 | 85-115 | | |
| Lead | 100 | | 1.6 | 5.0 | ug/L | 100.0 | | 100 | 85-115 | | |
| Magnesium | 1.03 | | 0.028 | 0.10 | mg/L | 1.000 | | 103 | 85-115 | | |
| Nickel | 101 | | 0.58 | 2.0 | ug/L | 100.0 | | 101 | 85-115 | | |
| Selenium | 95.9 | | 3.7 | 10 | ug/L | 100.0 | | 96 | 85-115 | | |
| Silver | 95.6 | | 0.82 | 5.0 | ug/L | 100.0 | | 96 | 85-115 | | |
| Thallium | 96.1 | | 1.5 | 10 | ug/L | 100.0 | | 96 | 85-115 | | |
| Zinc | 98.0 | | 0.39 | 10 | ug/L | 100.0 | | 98 | 85-115 | | |
| **Matrix Spike (F16A265-MS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 110 | | 3.6 | 10 | ug/L | 100.0 | U | 110 | 70-130 | | |
| Beryllium | 101 | | 0.11 | 1.0 | ug/L | 100.0 | U | 101 | 70-130 | | |

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NELAC Certification #: E56078

**Reported:**
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## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (F16A265-MS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Cadmium | 98.6 | | 0.10 | 1.0 | ug/L | 100.0 | 0.215 | 98 | 70-130 | | |
| Chromium | 102 | | 0.19 | 1.0 | ug/L | 100.0 | 1.12 | 101 | 70-130 | | |
| Copper | 132 | | 0.40 | 2.0 | ug/L | 100.0 | 31.6 | 100 | 70-130 | | |
| Iron | 1150 | | 2.7 | 10 | ug/L | 1000 | 171 | 98 | 70-130 | | |
| Lead | 96.3 | | 1.6 | 5.0 | ug/L | 100.0 | U | 96 | 70-130 | | |
| Magnesium | 56.4 | J2, | 0.028 | 0.10 | mg/L | 1.000 | 56.2 | 21 | 70-130 | | |
| Nickel | 113 | | 0.58 | 2.0 | ug/L | 100.0 | 14.2 | 98 | 70-130 | | |
| Selenium | 105 | | 3.7 | 10 | ug/L | 100.0 | U | 105 | 70-130 | | |
| Silver | 52.7 | J1, | 0.82 | 5.0 | ug/L | 100.0 | U | 53 | 70-130 | | |
| Thallium | 89.4 | | 1.5 | 10 | ug/L | 100.0 | U | 89 | 70-130 | | |
| Zinc | 176 | | 0.39 | 10 | ug/L | 100.0 | 78.2 | 98 | 70-130 | | |
| **Matrix Spike (F16A265-MS2)** | **Source: 16A0333-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 107 | | 3.6 | 10 | ug/L | 100.0 | U | 107 | 70-130 | | |
| Beryllium | 102 | | 0.11 | 1.0 | ug/L | 100.0 | U | 102 | 70-130 | | |
| Cadmium | 100 | | 0.10 | 1.0 | ug/L | 100.0 | 0.248 | 100 | 70-130 | | |

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (F16A265-MS2)** | **Source: 16A0333-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Chromium | 102 | | 0.19 | 1.0 | ug/L | 100.0 | 0.266 | 102 | 70-130 | | |
| Copper | 121 | | 0.40 | 2.0 | ug/L | 100.0 | 14.1 | 107 | 70-130 | | |
| Iron | 1020 | | 2.7 | 10 | ug/L | 1000 | 25.5 | 99 | 70-130 | | |
| Lead | 98.8 | | 1.6 | 5.0 | ug/L | 100.0 | 2.04 | 97 | 70-130 | | |
| Magnesium | 33.4 | J2, | 0.028 | 0.10 | mg/L | 1.000 | 31.9 | 151 | 70-130 | | |
| Nickel | 106 | | 0.58 | 2.0 | ug/L | 100.0 | 4.29 | 102 | 70-130 | | |
| Selenium | 105 | | 3.7 | 10 | ug/L | 100.0 | U | 105 | 70-130 | | |
| Silver | 54.1 | J1, | 0.82 | 5.0 | ug/L | 100.0 | U | 54 | 70-130 | | |
| Thallium | 91.9 | | 1.5 | 10 | ug/L | 100.0 | U | 92 | 70-130 | | |
| Zinc | 111 | | 0.39 | 10 | ug/L | 100.0 | 9.45 | 101 | 70-130 | | |
| **Matrix Spike Dup (F16A265-MSD1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 110 | | 3.6 | 10 | ug/L | 100.0 | U | 110 | 70-130 | 0.3 | 20 |
| Beryllium | 103 | | 0.11 | 1.0 | ug/L | 100.0 | U | 103 | 70-130 | 2 | 20 |
| Cadmium | 101 | | 0.10 | 1.0 | ug/L | 100.0 | 0.215 | 101 | 70-130 | 3 | 20 |
| Chromium | 104 | | 0.19 | 1.0 | ug/L | 100.0 | 1.12 | 103 | 70-130 | 2 | 20 |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (F16A265-MSD1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Copper | 139 | | 0.40 | 2.0 | ug/L | 100.0 | 31.6 | 107 | 70-130 | 5 | 20 |
| Iron | 1170 | | 2.7 | 10 | ug/L | 1000 | 171 | 100 | 70-130 | 2 | 20 |
| Lead | 99.1 | | 1.6 | 5.0 | ug/L | 100.0 | U | 99 | 70-130 | 3 | 20 |
| Magnesium | 56.9 | | 0.028 | 0.10 | mg/L | 1.000 | 56.2 | 72 | 70-130 | 0.9 | 20 |
| Nickel | 116 | | 0.58 | 2.0 | ug/L | 100.0 | 14.2 | 102 | 70-130 | 3 | 20 |
| Selenium | 112 | | 3.7 | 10 | ug/L | 100.0 | U | 112 | 70-130 | 6 | 20 |
| Silver | 54.1 | J1, | 0.82 | 5.0 | ug/L | 100.0 | U | 54 | 70-130 | 3 | 20 |
| Thallium | 93.3 | | 1.5 | 10 | ug/L | 100.0 | U | 93 | 70-130 | 4 | 20 |
| Zinc | 181 | | 0.39 | 10 | ug/L | 100.0 | 78.2 | 102 | 70-130 | 2 | 20 |
| **Post Spike (F16A265-PS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Arsenic | 219 | | 3.6 | 10 | ug/L | 200.0 | U | 110 | 90-110 | | |
| Beryllium | 206 | | 0.11 | 1.0 | ug/L | 200.0 | U | 103 | 90-110 | | |
| Cadmium | 201 | | 0.10 | 1.0 | ug/L | 200.0 | 0.215 | 101 | 90-110 | | |
| Chromium | 208 | | 0.19 | 1.0 | ug/L | 200.0 | 1.12 | 103 | 90-110 | | |
| Copper | 248 | | 0.40 | 2.0 | ug/L | 200.0 | 31.6 | 108 | 90-110 | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A265 - EPA 200.7** | | | | | | | | | | | |
| **Post Spike (F16A265-PS1)** | **Source: 16A0332-01** | | Prepared: 01/23/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Iron | 2160 | | 2.7 | 10 | ug/L | 2000 | 171 | 99 | 90-110 | | |
| Lead | 200 | | 1.6 | 5.0 | ug/L | 200.0 | U | 100 | 90-110 | | |
| Magnesium | 58.3 | | 0.028 | 0.10 | mg/L | 2.000 | 56.2 | 104 | 90-110 | | |
| Nickel | 217 | | 0.58 | 2.0 | ug/L | 200.0 | 14.2 | 102 | 90-110 | | |
| Selenium | 213 | | 3.7 | 10 | ug/L | 200.0 | U | 106 | 90-110 | | |
| Silver | 104 | | 0.82 | 5.0 | ug/L | 200.0 | U | 52 | 90-110 | | |
| Thallium | 187 | | 1.5 | 10 | ug/L | 200.0 | U | 94 | 90-110 | | |
| Zinc | 282 | | 0.39 | 10 | ug/L | 200.0 | 78.2 | 102 | 90-110 | | |

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601559 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601559-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Antimony | U | | 1.94 | 5.82 | ug/L | | | | - | | |
| Boron | U | | 0.800 | 2.40 | ug/L | | | | - | | |
| Molybdenum | U | | 1.09 | 3.27 | ug/L | | | | - | | |
| Titanium | U | | 0.120 | 0.360 | ug/L | | | | - | | |
| **LCS (1601559-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Antimony | 975.1 | | 1.94 | 5.82 | ug/L | 1000 | | 97.5 | 85-115 | | |
| Boron | 1006 | | 0.800 | 2.40 | ug/L | 1000 | | 101 | 85-115 | | |
| Molybdenum | 1038 | | 1.09 | 3.27 | ug/L | 1000 | | 104 | 85-115 | | |
| Titanium | 975.8 | | 0.120 | 0.360 | ug/L | 1000 | | 97.6 | 85-115 | | |
| **Matrix Spike (1601559-MS1)** | | **Source: 16A0551-02** | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Antimony | 992.9 | | 1.94 | 5.82 | ug/L | 1000 | U | 99.3 | 70-130 | | |
| Boron | 1376 | | 0.800 | 2.40 | ug/L | 1000 | 383.0 | 99.3 | 70-130 | | |
| Molybdenum | 1025 | | 1.09 | 3.27 | ug/L | 1000 | U | 103 | 70-130 | | |
| Titanium | 965.1 | | 0.120 | 0.360 | ug/L | 1000 | 8.320 | 95.7 | 70-130 | | |

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**Reported:**
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## Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601559 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (1601559-MSD1)** | **Source: 16A0551-02** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Antimony | 988.6 | | 1.94 | 5.82 | ug/L | 1000 | U | 98.9 | 70-130 | 0.437 | 20 |
| Boron | 1372 | | 0.800 | 2.40 | ug/L | 1000 | 383.0 | 98.9 | 70-130 | 0.408 | 20 |
| Molybdenum | 1039 | | 1.09 | 3.27 | ug/L | 1000 | U | 104 | 70-130 | 1.29 | 20 |
| Titanium | 962.4 | | 0.120 | 0.360 | ug/L | 1000 | 8.320 | 95.4 | 70-130 | 0.282 | 20 |
| **Batch 1601623 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1601623-BLK1)** | | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | U | | 7.97 | 23.9 | ug/L | | | | - | | |
| **LCS (1601623-BS1)** | | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | 1000 | | 7.97 | 23.9 | ug/L | 1000 | | 100 | 85-115 | | |
| **Matrix Spike (1601623-MS1)** | **Source: 16A0595-01** | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | 937 | | 7.97 | 23.9 | ug/L | 1000 | U | 93.7 | 70-130 | | |
| **Matrix Spike Dup (1601623-MSD1)** | **Source: 16A0595-01** | | Prepared & Analyzed: 01/25/2016 | | | | | | | | |
| Tin | 937 | | 7.97 | 23.9 | ug/L | 1000 | U | 93.7 | 70-130 | 0.00 | 20 |

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**Reported:**
02/09/2016 11:13

## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601668 - CBOD SM5210B** | | | | | | | | | | | |
| **Blank (1601668-BLK1)** | | | Prepared: 01/22/2016 Analyzed: 01/27/2016 | | | | | | | | |
| Carbonaceous BOD | U | | 2.00 | 6.00 | mg/L | | | | - | | |
| **LCS (1601668-BS1)** | | | Prepared: 01/22/2016 Analyzed: 01/27/2016 | | | | | | | | |
| Carbonaceous BOD | 200 | | 2.00 | 6.00 | mg/L | 198.0 | | 101 | 85-115 | | |
| **LCS Dup (1601668-BSD1)** | | | Prepared: 01/22/2016 Analyzed: 01/27/2016 | | | | | | | | |
| Carbonaceous BOD | 185 | | 2.00 | 6.00 | mg/L | 198.0 | | 93.4 | 85-115 | 7.79 | 20 |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Radiochemical - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602134 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1602134-BLK1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | U | | 1.14 | 3.42 | pCi/L | | | | - | | |
| Gross Beta | U | | 1.57 | 4.71 | pCi/L | | | | - | | |
| **LCS (1602134-BS1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 795 | | 2.34 | 7.02 | pCi/L | 1000 | | 79.5 | 60-125 | | |
| Gross Beta | 958 | | 4.03 | 12.1 | pCi/L | 1000 | | 95.8 | 0-200 | | |
| **LCS Dup (1602134-BSD1)** | | | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 766 | | 2.52 | 7.56 | pCi/L | 1000 | | 76.6 | 60-125 | 3.72 | 25 |
| Gross Beta | 999 | | 4.29 | 12.9 | pCi/L | 1000 | | 99.9 | 0-200 | 4.19 | 200 |
| **Matrix Spike (1602134-MS1)** | | **Source: 16A0398-01** | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 827 | | 2.21 | 6.63 | pCi/L | 1000 | 0.79±0.24 | 82.7 | 60-125 | | |
| Gross Beta | 237 | | 3.58 | 10.7 | pCi/L | 250.0 | 1.56±0.47 | 94.8 | 0-200 | | |
| **Matrix Spike Dup (1602134-MSD1)** | | **Source: 16A0398-01** | Prepared: 02/02/2016 Analyzed: 02/08/2016 | | | | | | | | |
| Gross Alpha | 731 | | 1.86 | 5.58 | pCi/L | 1000 | 0.79±0.24 | 73.1 | 60-125 | 12.3 | 25 |
| Gross Beta | 211 | | 3.72 | 11.2 | pCi/L | 250.0 | 1.56±0.47 | 84.4 | 0-200 | 11.6 | 200 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Radiochemical - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1602134 - EPA 900.0** | | | | | | | | | | | |

Serial #: 02092016111339

FPL Central Lab

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Blank (1601746-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | 1.27 | 3.81 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | U | | 1.02 | 3.06 | ug/L | | | | - | | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | 0.660 | 1.98 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | U | | 1.24 | 3.72 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | U | | 1.18 | 3.54 | ug/L | | | | - | | |
| 2,3-Dichloroaniline | U | | 0.510 | 1.53 | ug/L | | | | - | | |
| 2,4,5-Trichlorophenol | U | | 0.680 | 2.04 | ug/L | | | | - | | |
| 2,4,6-Trichlorophenol | U | | 0.560 | 1.68 | ug/L | | | | - | | |
| 2,4-Dichlorophenol | U | | 0.630 | 1.89 | ug/L | | | | - | | |
| 2,4-Dimethylphenol | U | | 0.490 | 1.47 | ug/L | | | | - | | |
| 2,4-Dinitrophenol | U | | 0.160 | 0.480 | ug/L | | | | - | | |
| 2,4-Dinitrotoluene | U | | 0.300 | 0.900 | ug/L | | | | - | | |
| 2,6-Dichlorophenol | U | | 0.237 | 0.712 | ug/L | | | | - | | |
| 2,6-Dinitrotoluene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| 2-Chloronaphthalene | U | | 0.550 | 1.65 | ug/L | | | | - | | |
| 2-Chlorophenol | U | | 0.890 | 2.67 | ug/L | | | | - | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Blank (1601746-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 2-Methylnaphthalene | U | | 0.0240 | 0.0720 | ug/L | | | | - | | |
| 2-Methylphenol | U | | 0.820 | 2.46 | ug/L | | | | - | | |
| 2-Nitrophenol | U | | 0.880 | 2.64 | ug/L | | | | - | | |
| 3,3'-Dichlorobenzidine | U | | 0.310 | 0.930 | ug/L | | | | - | | |
| 4,6-Dinitro-2-methylphenol | U | | 0.270 | 0.810 | ug/L | | | | - | | |
| 4-Bromophenyl phenyl ether | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| 4-Chloro-3-methylphenol | U | | 0.930 | 2.79 | ug/L | | | | - | | |
| 4-Chlorophenyl phenyl ether | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| 4-Nitrophenol | U | | 0.700 | 2.10 | ug/L | | | | - | | |
| Acenaphthene | U | | 0.490 | 1.47 | ug/L | | | | - | | |
| Acenaphthylene | U | | 0.640 | 1.92 | ug/L | | | | - | | |
| Aniline | U | | 0.890 | 2.67 | ug/L | | | | - | | |
| Anthracene | U | | 0.500 | 1.50 | ug/L | | | | - | | |
| a-Terpineol | U | | 0.336 | 1.01 | ug/L | | | | - | | |
| Benzidine | U | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (a) anthracene | U | | 0.180 | 0.540 | ug/L | | | | - | | |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Blank (1601746-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Benzo (a) pyrene | U | | 0.280 | 0.840 | ug/L | | | | - | | |
| Benzo (b) fluoranthene | U | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (g,h,i) perylene | U | | 0.210 | 0.630 | ug/L | | | | - | | |
| Benzo (k) fluoranthene | U | | 0.480 | 1.44 | ug/L | | | | - | | |
| Bis(2-chloroethoxy)methane | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| Bis(2-chloroethyl)ether | U | | 0.820 | 2.46 | ug/L | | | | - | | |
| Bis(2-chloroisopropyl)ether | U | | 0.970 | 2.91 | ug/L | | | | - | | |
| Bis(2-ethylhexyl)phthalate | U | | 1.32 | 3.96 | ug/L | | | | - | | |
| Butyl benzyl phthalate | U | | 0.190 | 0.570 | ug/L | | | | - | | |
| Chrysene | U | | 0.300 | 0.900 | ug/L | | | | - | | |
| Dibenz (a,h) anthracene | U | | 0.160 | 0.580 | ug/L | | | | - | | |
| Dibenzofuran | U | | 0.480 | 1.44 | ug/L | | | | - | | |
| Diethyl phthalate | U | | 0.200 | 0.600 | ug/L | | | | - | | |
| Dimethyl phthalate | U | | 0.290 | 0.870 | ug/L | | | | - | | |
| Di-n-butyl phthalate | U | | 0.240 | 0.720 | ug/L | | | | - | | |
| Di-n-octyl phthalate | U | | 0.170 | 0.510 | ug/L | | | | - | | |

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Blank (1601746-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Fluoranthene | U | | 0.280 | 0.840 | ug/L | | | | - | | |
| Fluorene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobenzene | U | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobutadiene | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| Hexachlorocyclopentadiene | U | | 0.690 | 2.07 | ug/L | | | | - | | |
| Hexachloroethane | U | | 0.810 | 2.43 | ug/L | | | | - | | |
| Indeno (1,2,3-cd) pyrene | U | | 0.150 | 0.450 | ug/L | | | | - | | |
| Isophorone | U | | 0.680 | 2.04 | ug/L | | | | - | | |
| m,p Cresol | U | | 0.329 | 0.987 | ug/L | | | | - | | |
| Naphthalene | U | | 0.700 | 2.10 | ug/L | | | | - | | |
| n-Decane | U | | 0.244 | 0.733 | ug/L | | | | - | | |
| Nitrobenzene | U | | 0.770 | 2.31 | ug/L | | | | - | | |
| N-Nitrosodimethylamine | U | | 1.11 | 3.33 | ug/L | | | | - | | |
| N-Nitrosodi-n-propylamine | U | | 1.10 | 3.30 | ug/L | | | | - | | |
| N-Nitrosodiphenylamine | U | | 0.380 | 1.14 | ug/L | | | | - | | |
| n-Octadecane | U | | 1.59 | 4.78 | ug/L | | | | - | | |

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Blank (1601746-BLK1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Pentachlorophenol | U | | 0.320 | 0.960 | ug/L | | | | - | | |
| Phenanthrene | U | | 0.450 | 1.35 | ug/L | | | | - | | |
| Phenol | U | | 0.580 | 1.74 | ug/L | | | | - | | |
| Pyrene | U | | 0.220 | 0.660 | ug/L | | | | - | | |
| Pyridine | U | | 0.530 | 1.59 | ug/L | | | | - | | |
| *Surrogate: 2,4,6-Tribromophenol* | *44.0* | | | | ug/L | *50.00* | | *88.0* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *22.5* | | | | ug/L | *25.00* | | *90.0* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *51.9* | | | | ug/L | *50.00* | | *104* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *20.6* | | | | ug/L | *25.00* | | *82.3* | *50-150* | | |
| *Surrogate: Phenol-d6* | *51.1* | | | | ug/L | *50.00* | | *102* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *21.4* | | | | ug/L | *25.00* | | *85.5* | *50-150* | | |
| **LCS (1601746-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 9.03 | | 1.27 | 3.81 | ug/L | 10.00 | | 90.3 | 44-142 | | |
| 1,2-Dichlorobenzene | 8.73 | | 1.02 | 3.06 | ug/L | 10.00 | | 87.3 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 9.22 | | 0.660 | 1.98 | ug/L | 10.00 | | 92.2 | 40-140 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Jensen Beach FL, 34957

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NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **LCS (1601746-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 1,3-Dichlorobenzene | 9.30 | | 1.24 | 3.72 | ug/L | 10.00 | | 93.0 | 0-172 | | |
| 1,4-Dichlorobenzene | 9.22 | | 1.18 | 3.54 | ug/L | 10.00 | | 92.2 | 20-124 | | |
| 2,4,5-Trichlorophenol | 10.6 | | 0.680 | 2.04 | ug/L | 10.00 | | 106 | 42-131 | | |
| 2,4,6-Trichlorophenol | 10.8 | | 0.560 | 1.68 | ug/L | 10.00 | | 108 | 37-144 | | |
| 2,4-Dichlorophenol | 9.28 | | 0.630 | 1.89 | ug/L | 10.00 | | 92.8 | 39-135 | | |
| 2,4-Dimethylphenol | 9.38 | | 0.490 | 1.47 | ug/L | 10.00 | | 93.8 | 32-119 | | |
| 2,4-Dinitrophenol | 7.10 | | 0.160 | 0.480 | ug/L | 10.00 | | 71.0 | 0-191 | | |
| 2,4-Dinitrotoluene | 8.57 | | 0.300 | 0.900 | ug/L | 10.00 | | 85.7 | 39-139 | | |
| 2,6-Dichlorophenol | 9.25 | | 0.237 | 0.712 | ug/L | 10.00 | | 92.5 | 37-136 | | |
| 2,6-Dinitrotoluene | 10.4 | | 0.520 | 1.56 | ug/L | 10.00 | | 104 | 50-158 | | |
| 2-Chloronaphthalene | 10.1 | | 0.550 | 1.65 | ug/L | 10.00 | | 101 | 60-118 | | |
| 2-Chlorophenol | 9.83 | | 0.890 | 2.67 | ug/L | 10.00 | | 98.3 | 23-134 | | |
| 2-Methylnaphthalene | 10.2 | | 0.0240 | 0.0720 | ug/L | 10.00 | | 102 | 34-129 | | |
| 2-Methylphenol | 9.92 | | 0.820 | 2.46 | ug/L | 10.00 | | 99.2 | 52-109 | | |
| 2-Nitrophenol | 7.07 | | 0.880 | 2.64 | ug/L | 10.00 | | 70.7 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 24.8 | | 0.310 | 0.930 | ug/L | 10.00 | | 248 | 0-262 | | |

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **LCS (1601746-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | 7.10 | | 0.270 | 0.810 | ug/L | 10.00 | | 71.0 | 0-181 | | |
| 4-Bromophenyl phenyl ether | 9.56 | | 0.530 | 1.59 | ug/L | 10.00 | | 95.6 | 53-127 | | |
| 4-Chloro-3-methylphenol | 9.53 | | 0.930 | 2.79 | ug/L | 10.00 | | 95.3 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 10.8 | | 0.580 | 1.74 | ug/L | 10.00 | | 108 | 25-158 | | |
| 4-Nitrophenol | 8.69 | | 0.700 | 2.10 | ug/L | 10.00 | | 86.9 | 0-132 | | |
| Acenaphthene | 10.1 | | 0.490 | 1.47 | ug/L | 10.00 | | 101 | 47-145 | | |
| Acenaphthylene | 10.9 | | 0.640 | 1.92 | ug/L | 10.00 | | 109 | 33-145 | | |
| Aniline | 14.5 | J-2, | 0.890 | 2.67 | ug/L | 10.00 | | 145 | 40-138 | | |
| Anthracene | 10.1 | | 0.500 | 1.50 | ug/L | 10.00 | | 101 | 27-133 | | |
| Benzidine | 26.7 | J-2, | 0.260 | 0.780 | ug/L | 10.00 | | 267 | 40-140 | | |
| Benzo (a) anthracene | 9.27 | | 0.180 | 0.540 | ug/L | 10.00 | | 92.7 | 33-143 | | |
| Benzo (a) pyrene | 11.9 | | 0.280 | 0.840 | ug/L | 10.00 | | 119 | 17-163 | | |
| Benzo (b) fluoranthene | 13.7 | | 0.260 | 0.780 | ug/L | 10.00 | | 137 | 24-159 | | |
| Benzo (g,h,i) perylene | 7.38 | | 0.210 | 0.630 | ug/L | 10.00 | | 73.8 | 0-219 | | |
| Benzo (k) fluoranthene | 13.1 | | 0.480 | 1.44 | ug/L | 10.00 | | 131 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 9.08 | | 0.580 | 1.74 | ug/L | 10.00 | | 90.8 | 33-184 | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **LCS (1601746-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Bis(2-chloroethyl)ether | 9.27 | | 0.820 | 2.46 | ug/L | 10.00 | | 92.7 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 9.43 | | 0.970 | 2.91 | ug/L | 10.00 | | 94.3 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 11.5 | | 1.32 | 3.96 | ug/L | 10.00 | | 115 | 8-158 | | |
| Butyl benzyl phthalate | 11.3 | | 0.190 | 0.570 | ug/L | 10.00 | | 113 | 0-152 | | |
| Chrysene | 9.64 | | 0.300 | 0.900 | ug/L | 10.00 | | 96.4 | 17-168 | | |
| Dibenz (a,h) anthracene | 8.39 | | 0.160 | 0.580 | ug/L | 10.00 | | 83.9 | 0-227 | | |
| Dibenzofuran | 10.8 | | 0.480 | 1.44 | ug/L | 10.00 | | 108 | 46-127 | | |
| Diethyl phthalate | 10.9 | | 0.200 | 0.600 | ug/L | 10.00 | | 109 | 0-114 | | |
| Dimethyl phthalate | 10.7 | | 0.290 | 0.870 | ug/L | 10.00 | | 107 | 0-112 | | |
| Di-n-butyl phthalate | 10.6 | | 0.240 | 0.720 | ug/L | 10.00 | | 106 | 1-118 | | |
| Di-n-octyl phthalate | 21.9 | J-2, | 0.170 | 0.510 | ug/L | 10.00 | | 219 | 4-146 | | |
| Fluoranthene | 10.3 | | 0.280 | 0.840 | ug/L | 10.00 | | 103 | 26-137 | | |
| Fluorene | 10.9 | | 0.520 | 1.56 | ug/L | 10.00 | | 109 | 59-121 | | |
| Hexachlorobenzene | 9.50 | | 0.520 | 1.56 | ug/L | 10.00 | | 95.0 | 0-152 | | |
| Hexachlorobutadiene | 9.10 | | 0.530 | 1.59 | ug/L | 10.00 | | 91.0 | 24-116 | | |
| Hexachlorocyclopentadiene | 3.57 | J-2, | 0.690 | 2.07 | ug/L | 10.00 | | 35.7 | 40-140 | | |

Serial #: 02092016111339

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **LCS (1601746-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Hexachloroethane | 7.24 | | 0.810 | 2.43 | ug/L | 10.00 | | 72.4 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 8.12 | | 0.150 | 0.450 | ug/L | 10.00 | | 81.2 | 0-171 | | |
| Isophorone | 9.59 | | 0.680 | 2.04 | ug/L | 10.00 | | 95.9 | 21-196 | | |
| m,p Cresol | 10.2 | | 0.329 | 0.987 | ug/L | 10.00 | | 102 | 48-110 | | |
| Naphthalene | 9.08 | | 0.700 | 2.10 | ug/L | 10.00 | | 90.8 | 21-133 | | |
| Nitrobenzene | 8.08 | | 0.770 | 2.31 | ug/L | 10.00 | | 80.8 | 35-180 | | |
| N-Nitrosodimethylamine | 10.4 | | 1.11 | 3.33 | ug/L | 10.00 | | 104 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 10.7 | | 1.10 | 3.30 | ug/L | 10.00 | | 107 | 0-230 | | |
| N-Nitrosodiphenylamine | 9.70 | | 0.380 | 1.14 | ug/L | 10.00 | | 97.0 | 40-140 | | |
| Pentachlorophenol | 8.35 | | 0.320 | 0.960 | ug/L | 10.00 | | 83.5 | 14-176 | | |
| Phenanthrene | 9.71 | | 0.450 | 1.35 | ug/L | 10.00 | | 97.1 | 54-120 | | |
| Phenol | 9.56 | | 0.580 | 1.74 | ug/L | 10.00 | | 95.6 | 5-112 | | |
| Pyrene | 11.4 | | 0.220 | 0.660 | ug/L | 10.00 | | 114 | 52-115 | | |
| Pyridine | 9.31 | | 0.530 | 1.59 | ug/L | 10.00 | | 93.1 | 10-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *45.4* | | | | ug/L | *50.00* | | *90.8* | *50-150* | | |

Serial #: 02092016111339

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **LCS (1601746-BS1)** | | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| *Surrogate: 2-Fluorobiphenyl* | *20.6* | | | | ug/L | *25.00* | | *82.4* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *45.3* | | | | ug/L | *50.00* | | *90.6* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *20.0* | | | | ug/L | *25.00* | | *79.9* | *50-150* | | |
| *Surrogate: Phenol-d6* | *45.1* | | | | ug/L | *50.00* | | *90.3* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *18.2* | | | | ug/L | *25.00* | | *72.6* | *50-150* | | |
| **Matrix Spike (1601746-MS1)** | | **Source: 16A0757-01** | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 9.19 | | 1.27 | 3.81 | ug/L | 10.00 | U | 91.9 | 44-142 | | |
| 1,2-Dichlorobenzene | 9.04 | | 1.02 | 3.06 | ug/L | 10.00 | U | 90.4 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 9.78 | | 0.660 | 1.98 | ug/L | 10.00 | U | 97.8 | 40-140 | | |
| 1,3-Dichlorobenzene | 9.69 | | 1.24 | 3.72 | ug/L | 10.00 | U | 96.9 | 0-172 | | |
| 1,4-Dichlorobenzene | 9.61 | | 1.18 | 3.54 | ug/L | 10.00 | U | 96.1 | 20-124 | | |
| 2,4,5-Trichlorophenol | 11.8 | | 0.680 | 2.04 | ug/L | 10.00 | U | 118 | 46-131 | | |
| 2,4,6-Trichlorophenol | 11.9 | | 0.560 | 1.68 | ug/L | 10.00 | U | 119 | 37-144 | | |
| 2,4-Dichlorophenol | 9.77 | | 0.630 | 1.89 | ug/L | 10.00 | U | 97.7 | 39-135 | | |
| 2,4-Dimethylphenol | 9.79 | | 0.490 | 1.47 | ug/L | 10.00 | U | 97.9 | 32-119 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601746-MS1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 2,4-Dinitrophenol | 6.94 | | 0.160 | 0.480 | ug/L | 10.00 | U | 69.4 | 0-191 | | |
| 2,4-Dinitrotoluene | 9.10 | | 0.300 | 0.900 | ug/L | 10.00 | U | 91.0 | 39-139 | | |
| 2,6-Dichlorophenol | 9.68 | | 0.237 | 0.712 | ug/L | 10.00 | U | 96.8 | 35-145 | | |
| 2,6-Dinitrotoluene | 11.4 | | 0.520 | 1.56 | ug/L | 10.00 | U | 114 | 50-158 | | |
| 2-Chloronaphthalene | 11.0 | | 0.550 | 1.65 | ug/L | 10.00 | U | 110 | 60-118 | | |
| 2-Chlorophenol | 10.3 | | 0.890 | 2.67 | ug/L | 10.00 | U | 103 | 23-134 | | |
| 2-Methylnaphthalene | 11.0 | | 0.0240 | 0.0720 | ug/L | 10.00 | U | 110 | 36-128 | | |
| 2-Methylphenol | 10.5 | | 0.820 | 2.46 | ug/L | 10.00 | U | 105 | 52-113 | | |
| 2-Nitrophenol | 7.50 | | 0.880 | 2.64 | ug/L | 10.00 | U | 75.0 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 25.9 | | 0.310 | 0.930 | ug/L | 10.00 | U | 259 | 0-262 | | |
| 4,6-Dinitro-2-methylphenol | 6.37 | | 0.270 | 0.810 | ug/L | 10.00 | U | 63.7 | 0-181 | | |
| 4-Bromophenyl phenyl ether | 10.2 | | 0.530 | 1.59 | ug/L | 10.00 | U | 102 | 53-127 | | |
| 4-Chloro-3-methylphenol | 10.1 | | 0.930 | 2.79 | ug/L | 10.00 | U | 101 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 11.7 | | 0.580 | 1.74 | ug/L | 10.00 | U | 117 | 25-158 | | |
| 4-Nitrophenol | 6.15 | | 0.700 | 2.10 | ug/L | 10.00 | U | 61.5 | 0-132 | | |
| Acenaphthene | 10.8 | | 0.490 | 1.47 | ug/L | 10.00 | U | 108 | 47-145 | | |

Serial #: 02092016111339

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601746-MS1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Acenaphthylene | 11.9 | | 0.640 | 1.92 | ug/L | 10.00 | U | 119 | 33-145 | | |
| Aniline | 9.18 | J-2, | 0.890 | 2.67 | ug/L | 10.00 | U | 91.8 | 40-147 | | |
| Anthracene | 10.6 | | 0.500 | 1.50 | ug/L | 10.00 | U | 106 | 27-133 | | |
| Benzidine | 26.7 | J-2, J-3, | 0.260 | 0.780 | ug/L | 10.00 | U | 267 | 40-140 | | |
| Benzo (a) anthracene | 9.89 | | 0.180 | 0.540 | ug/L | 10.00 | U | 98.9 | 33-143 | | |
| Benzo (a) pyrene | 12.6 | | 0.280 | 0.840 | ug/L | 10.00 | U | 126 | 17-163 | | |
| Benzo (b) fluoranthene | 14.9 | | 0.260 | 0.780 | ug/L | 10.00 | U | 149 | 24-159 | | |
| Benzo (g,h,i) perylene | 7.50 | | 0.210 | 0.630 | ug/L | 10.00 | U | 75.0 | 0-219 | | |
| Benzo (k) fluoranthene | 14.2 | | 0.480 | 1.44 | ug/L | 10.00 | U | 142 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 9.40 | | 0.580 | 1.74 | ug/L | 10.00 | U | 94.0 | 33-184 | | |
| Bis(2-chloroethyl)ether | 9.51 | | 0.820 | 2.46 | ug/L | 10.00 | U | 95.1 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 9.77 | | 0.970 | 2.91 | ug/L | 10.00 | U | 97.7 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 12.2 | | 1.32 | 3.96 | ug/L | 10.00 | U | 122 | 8-158 | | |
| Butyl benzyl phthalate | 12.1 | | 0.190 | 0.570 | ug/L | 10.00 | U | 121 | 0-152 | | |
| Chrysene | 10.3 | | 0.300 | 0.900 | ug/L | 10.00 | U | 103 | 17-168 | | |
| Dibenz (a,h) anthracene | 8.86 | | 0.160 | 0.580 | ug/L | 10.00 | U | 88.6 | 0-227 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601746-MS1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Dibenzofuran | 11.6 | | 0.480 | 1.44 | ug/L | 10.00 | U | 116 | 43-136 | | |
| Diethyl phthalate | 11.6 | | 0.200 | 0.600 | ug/L | 10.00 | U | 116 | 0-114 | | |
| Dimethyl phthalate | 11.6 | | 0.290 | 0.870 | ug/L | 10.00 | U | 116 | 0-112 | | |
| Di-n-butyl phthalate | 10.9 | | 0.240 | 0.720 | ug/L | 10.00 | U | 109 | 1-118 | | |
| Di-n-octyl phthalate | 23.6 | J-2, J-3, | 0.170 | 0.510 | ug/L | 10.00 | U | 236 | 4-146 | | |
| Fluoranthene | 10.9 | | 0.280 | 0.840 | ug/L | 10.00 | U | 109 | 26-137 | | |
| Fluorene | 11.7 | | 0.520 | 1.56 | ug/L | 10.00 | U | 117 | 59-121 | | |
| Hexachlorobenzene | 10.1 | | 0.520 | 1.56 | ug/L | 10.00 | U | 101 | 0-152 | | |
| Hexachlorobutadiene | 9.38 | | 0.530 | 1.59 | ug/L | 10.00 | U | 93.8 | 24-116 | | |
| Hexachlorocyclopentadiene | 3.78 | J-2, J-3, | 0.690 | 2.07 | ug/L | 10.00 | U | 37.8 | 40-140 | | |
| Hexachloroethane | 7.51 | | 0.810 | 2.43 | ug/L | 10.00 | U | 75.1 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 8.48 | | 0.150 | 0.450 | ug/L | 10.00 | U | 84.8 | 0-171 | | |
| Isophorone | 9.91 | | 0.680 | 2.04 | ug/L | 10.00 | U | 99.1 | 21-196 | | |
| m,p Cresol | 10.9 | | 0.329 | 0.987 | ug/L | 10.00 | U | 109 | 53-110 | | |
| Naphthalene | 9.38 | | 0.700 | 2.10 | ug/L | 10.00 | U | 93.8 | 21-133 | | |
| Nitrobenzene | 8.28 | | 0.770 | 2.31 | ug/L | 10.00 | U | 82.8 | 35-180 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1601746-MS1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| N-Nitrosodimethylamine | 9.26 | | 1.11 | 3.33 | ug/L | 10.00 | U | 92.6 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 11.1 | | 1.10 | 3.30 | ug/L | 10.00 | U | 111 | 0-230 | | |
| N-Nitrosodiphenylamine | 10.3 | | 0.380 | 1.14 | ug/L | 10.00 | U | 103 | 40-140 | | |
| Pentachlorophenol | 8.73 | | 0.320 | 0.960 | ug/L | 10.00 | U | 87.3 | 14-176 | | |
| Phenanthrene | 10.2 | | 0.450 | 1.35 | ug/L | 10.00 | U | 102 | 54-120 | | |
| Phenol | 10.0 | | 0.580 | 1.74 | ug/L | 10.00 | U | 100 | 5-112 | | |
| Pyrene | 12.2 | J-3, | 0.220 | 0.660 | ug/L | 10.00 | U | 122 | 52-115 | | |
| Pyridine | 9.29 | | 0.530 | 1.59 | ug/L | 10.00 | U | 92.9 | 40-110 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *47.6* | | | | ug/L | *50.00* | | *95.1* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *21.5* | | | | ug/L | *25.00* | | *85.8* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *46.9* | | | | ug/L | *50.00* | | *93.9* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *20.5* | | | | ug/L | *25.00* | | *82.0* | *50-150* | | |
| *Surrogate: Phenol-d6* | *47.2* | | | | ug/L | *50.00* | | *94.4* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *19.3* | | | | ug/L | *25.00* | | *77.2* | *50-150* | | |
| **Matrix Spike Dup (1601746-MSD1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601746-MSD1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 9.02 | | 1.27 | 3.81 | ug/L | 10.00 | U | 90.2 | 44-142 | 1.83 | 20 |
| 1,2-Dichlorobenzene | 8.36 | | 1.02 | 3.06 | ug/L | 10.00 | U | 83.6 | 32-129 | 7.85 | 20 |
| 1,2-Diphenylhydrazine as Azobenzene | 9.41 | | 0.660 | 1.98 | ug/L | 10.00 | U | 94.1 | 40-140 | 3.91 | 20 |
| 1,3-Dichlorobenzene | 9.03 | | 1.24 | 3.72 | ug/L | 10.00 | U | 90.3 | 0-172 | 7.06 | 20 |
| 1,4-Dichlorobenzene | 9.10 | | 1.18 | 3.54 | ug/L | 10.00 | U | 91.0 | 20-124 | 5.44 | 20 |
| 2,4,5-Trichlorophenol | 10.9 | | 0.680 | 2.04 | ug/L | 10.00 | U | 109 | 46-131 | 7.97 | 30 |
| 2,4,6-Trichlorophenol | 10.9 | | 0.560 | 1.68 | ug/L | 10.00 | U | 109 | 37-144 | 8.15 | 20 |
| 2,4-Dichlorophenol | 9.39 | | 0.630 | 1.89 | ug/L | 10.00 | U | 93.9 | 39-135 | 3.98 | 20 |
| 2,4-Dimethylphenol | 9.45 | | 0.490 | 1.47 | ug/L | 10.00 | U | 94.5 | 32-119 | 3.55 | 20 |
| 2,4-Dinitrophenol | 7.25 | | 0.160 | 0.480 | ug/L | 10.00 | U | 72.5 | 0-191 | 4.30 | 20 |
| 2,4-Dinitrotoluene | 8.57 | | 0.300 | 0.900 | ug/L | 10.00 | U | 85.7 | 39-139 | 5.98 | 20 |
| 2,6-Dichlorophenol | 9.26 | | 0.237 | 0.712 | ug/L | 10.00 | U | 92.6 | 35-145 | 4.45 | 30 |
| 2,6-Dinitrotoluene | 10.7 | | 0.520 | 1.56 | ug/L | 10.00 | U | 107 | 50-158 | 6.80 | 20 |
| 2-Chloronaphthalene | 10.3 | | 0.550 | 1.65 | ug/L | 10.00 | U | 103 | 60-118 | 6.81 | 20 |
| 2-Chlorophenol | 9.59 | | 0.890 | 2.67 | ug/L | 10.00 | U | 95.9 | 23-134 | 7.11 | 20 |
| 2-Methylnaphthalene | 10.3 | | 0.0240 | 0.0720 | ug/L | 10.00 | U | 103 | 36-128 | 6.80 | 30 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601746-MSD1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| 2-Methylphenol | 9.76 | | 0.820 | 2.46 | ug/L | 10.00 | U | 97.6 | 52-113 | 6.88 | 30 |
| 2-Nitrophenol | 7.16 | | 0.880 | 2.64 | ug/L | 10.00 | U | 71.6 | 29-182 | 4.56 | 20 |
| 3,3'-Dichlorobenzidine | 24.6 | | 0.310 | 0.930 | ug/L | 10.00 | U | 246 | 0-262 | 5.49 | 20 |
| 4,6-Dinitro-2-methylphenol | 6.37 | | 0.270 | 0.810 | ug/L | 10.00 | U | 63.7 | 0-181 | 0.0157 | 20 |
| 4-Bromophenyl phenyl ether | 9.74 | | 0.530 | 1.59 | ug/L | 10.00 | U | 97.4 | 53-127 | 4.56 | 20 |
| 4-Chloro-3-methylphenol | 9.61 | | 0.930 | 2.79 | ug/L | 10.00 | U | 96.1 | 22-147 | 5.30 | 20 |
| 4-Chlorophenyl phenyl ether | 11.0 | | 0.580 | 1.74 | ug/L | 10.00 | U | 110 | 25-158 | 6.90 | 20 |
| 4-Nitrophenol | 5.67 | | 0.700 | 2.10 | ug/L | 10.00 | U | 56.7 | 0-132 | 8.07 | 20 |
| Acenaphthene | 10.1 | | 0.490 | 1.47 | ug/L | 10.00 | U | 101 | 47-145 | 6.69 | 20 |
| Acenaphthylene | 11.0 | | 0.640 | 1.92 | ug/L | 10.00 | U | 110 | 33-145 | 7.05 | 20 |
| Aniline | 13.7 | J-2, | 0.890 | 2.67 | ug/L | 10.00 | U | 137 | 40-147 | 39.5 | 30 |
| Anthracene | 10.3 | | 0.500 | 1.50 | ug/L | 10.00 | U | 103 | 27-133 | 3.55 | 20 |
| Benzidine | 23.7 | J-2, J-3, | 0.260 | 0.780 | ug/L | 10.00 | U | 237 | 40-140 | 11.9 | 20 |
| Benzo (a) anthracene | 9.38 | | 0.180 | 0.540 | ug/L | 10.00 | U | 93.8 | 33-143 | 5.30 | 20 |
| Benzo (a) pyrene | 11.7 | | 0.280 | 0.840 | ug/L | 10.00 | U | 117 | 17-163 | 7.62 | 20 |
| Benzo (b) fluoranthene | 13.7 | | 0.260 | 0.780 | ug/L | 10.00 | U | 137 | 24-159 | 8.01 | 20 |

Serial #: 02092016111339

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601746-MSD1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Benzo (g,h,i) perylene | 6.88 | | 0.210 | 0.630 | ug/L | 10.00 | U | 68.8 | 0-219 | 8.69 | 20 |
| Benzo (k) fluoranthene | 12.9 | | 0.480 | 1.44 | ug/L | 10.00 | U | 129 | 11-162 | 9.11 | 20 |
| Bis(2-chloroethoxy)methane | 9.04 | | 0.580 | 1.74 | ug/L | 10.00 | U | 90.4 | 33-184 | 3.82 | 20 |
| Bis(2-chloroethyl)ether | 9.23 | | 0.820 | 2.46 | ug/L | 10.00 | U | 92.3 | 12-158 | 3.03 | 20 |
| Bis(2-chloroisopropyl)ether | 9.18 | | 0.970 | 2.91 | ug/L | 10.00 | U | 91.8 | 36-166 | 6.14 | 20 |
| Bis(2-ethylhexyl)phthalate | 11.6 | | 1.32 | 3.96 | ug/L | 10.00 | U | 116 | 8-158 | 5.04 | 20 |
| Butyl benzyl phthalate | 11.5 | | 0.190 | 0.570 | ug/L | 10.00 | U | 115 | 0-152 | 5.09 | 20 |
| Chrysene | 9.85 | | 0.300 | 0.900 | ug/L | 10.00 | U | 98.5 | 17-168 | 4.74 | 20 |
| Dibenz (a,h) anthracene | 7.95 | | 0.160 | 0.580 | ug/L | 10.00 | U | 79.5 | 0-227 | 10.9 | 20 |
| Dibenzofuran | 10.7 | | 0.480 | 1.44 | ug/L | 10.00 | U | 107 | 43-136 | 8.00 | 30 |
| Diethyl phthalate | 11.0 | | 0.200 | 0.600 | ug/L | 10.00 | U | 110 | 0-114 | 6.13 | 20 |
| Dimethyl phthalate | 10.9 | | 0.290 | 0.870 | ug/L | 10.00 | U | 109 | 0-112 | 6.45 | 20 |
| Di-n-butyl phthalate | 10.7 | | 0.240 | 0.720 | ug/L | 10.00 | U | 107 | 1-118 | 2.51 | 20 |
| Di-n-octyl phthalate | 22.3 | J-2, J-3, | 0.170 | 0.510 | ug/L | 10.00 | U | 223 | 4-146 | 5.80 | 20 |
| Fluoranthene | 10.4 | | 0.280 | 0.840 | ug/L | 10.00 | U | 104 | 26-137 | 4.31 | 20 |
| Fluorene | 11.0 | | 0.520 | 1.56 | ug/L | 10.00 | U | 110 | 59-121 | 6.52 | 20 |

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Tom Helton For Phoebe Brown, Central Lab Manager

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NELAC Certification #: E56078

**Reported:**
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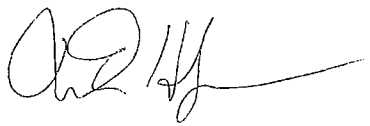
## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601746-MSD1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Hexachlorobenzene | 9.66 | | 0.520 | 1.56 | ug/L | 10.00 | U | 96.6 | 0-152 | 4.54 | 20 |
| Hexachlorobutadiene | 9.16 | | 0.530 | 1.59 | ug/L | 10.00 | U | 91.6 | 24-116 | 2.33 | 20 |
| Hexachlorocyclopentadiene | 3.26 | J-2, J-3, | 0.690 | 2.07 | ug/L | 10.00 | U | 32.6 | 40-140 | 14.9 | 20 |
| Hexachloroethane | 6.98 | | 0.810 | 2.43 | ug/L | 10.00 | U | 69.8 | 40-113 | 7.25 | 20 |
| Indeno (1,2,3-cd) pyrene | 7.52 | | 0.150 | 0.450 | ug/L | 10.00 | U | 75.2 | 0-171 | 12.0 | 20 |
| Isophorone | 9.61 | | 0.680 | 2.04 | ug/L | 10.00 | U | 96.1 | 21-196 | 3.05 | 20 |
| m,p Cresol | 10.2 | | 0.329 | 0.987 | ug/L | 10.00 | U | 102 | 53-110 | 6.90 | 30 |
| Naphthalene | 9.00 | | 0.700 | 2.10 | ug/L | 10.00 | U | 90.0 | 21-133 | 4.13 | 20 |
| Nitrobenzene | 7.96 | | 0.770 | 2.31 | ug/L | 10.00 | U | 79.6 | 35-180 | 4.03 | 20 |
| N-Nitrosodimethylamine | 9.96 | | 1.11 | 3.33 | ug/L | 10.00 | U | 99.6 | 40-140 | 7.29 | 20 |
| N-Nitrosodi-n-propylamine | 10.3 | | 1.10 | 3.30 | ug/L | 10.00 | U | 103 | 0-230 | 7.21 | 20 |
| N-Nitrosodiphenylamine | 9.92 | | 0.380 | 1.14 | ug/L | 10.00 | U | 99.2 | 40-140 | 3.89 | 20 |
| Pentachlorophenol | 8.36 | | 0.320 | 0.960 | ug/L | 10.00 | U | 83.6 | 14-176 | 4.34 | 20 |
| Phenanthrene | 9.86 | | 0.450 | 1.35 | ug/L | 10.00 | U | 98.6 | 54-120 | 3.36 | 20 |
| Phenol | 9.15 | | 0.580 | 1.74 | ug/L | 10.00 | U | 91.5 | 5-112 | 9.14 | 20 |
| Pyrene | 11.6 | J-3, | 0.220 | 0.660 | ug/L | 10.00 | U | 116 | 52-115 | 5.03 | 20 |

Serial #: 02092016111339

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## SemiVolatile GC-MS - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601746 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1601746-MSD1)** | **Source: 16A0757-01** | | Prepared & Analyzed: 01/28/2016 | | | | | | | | |
| Pyridine | 8.82 | | 0.530 | 1.59 | ug/L | 10.00 | U | 88.2 | 40-110 | 5.10 | 30 |
| *Surrogate: 2,4,6-Tribromophenol* | *45.7* | | | | ug/L | *50.00* | | *91.4* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *20.5* | | | | ug/L | *25.00* | | *81.9* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *43.6* | | | | ug/L | *50.00* | | *87.2* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *19.7* | | | | ug/L | *25.00* | | *78.7* | *50-150* | | |
| *Surrogate: Phenol-d6* | *43.8* | | | | ug/L | *50.00* | | *87.6* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *18.1* | | | | ug/L | *25.00* | | *72.4* | *50-150* | | |

Serial #: 02092016111339

FPL Central Lab

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Blank (1601587-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | U | | 0.0840 | 0.237 | ug/L | | | | - | | |
| 1,1,1-Trichloroethane | U | | 0.0380 | 0.113 | ug/L | | | | - | | |
| 1,1,2,2-Tetrachloroethane | U | | 0.0690 | 0.207 | ug/L | | | | - | | |
| 1,1,2-Trichloroethane | U | | 0.0750 | 0.226 | ug/L | | | | - | | |
| 1,1-Dichloroethane | U | | 0.204 | 0.612 | ug/L | | | | - | | |
| 1,1-Dichloroethene | U | | 0.0590 | 0.176 | ug/L | | | | - | | |
| 1,1-Dichloropropene | U | | 0.120 | 0.359 | ug/L | | | | - | | |
| 1,2,3-Trichlorobenzene | U | | 0.250 | 0.751 | ug/L | | | | - | | |
| 1,2,3-Trichloropropane | U | | 0.122 | 0.366 | ug/L | | | | - | | |
| 1,2,4-Trichlorobenzene | U | | 0.248 | 0.745 | ug/L | | | | - | | |
| 1,2,4-Trimethylbenzene | U | | 0.211 | 0.633 | ug/L | | | | - | | |
| 1,2-Dibromo-3-chloropropane | U | | 0.236 | 0.708 | ug/L | | | | - | | |
| 1,2-Dibromoethane (EDB) | U | | 0.0710 | 0.213 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | U | | 0.193 | 0.580 | ug/L | | | | - | | |
| 1,2-Dichloroethane | U | | 0.0360 | 0.109 | ug/L | | | | - | | |
| 1,2-Dichloropropane | U | | 0.0450 | 0.136 | ug/L | | | | - | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Blank (1601587-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,3,5-Trimethylbenzene | U | | 0.135 | 0.405 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | U | | 0.195 | 0.585 | ug/L | | | | - | | |
| 1,3-Dichloropropane | U | | 0.0730 | 0.220 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | U | | 0.257 | 0.770 | ug/L | | | | - | | |
| 2,2-Dichloropropane | U | | 0.401 | 1.20 | ug/L | | | | - | | |
| 2-Butanone (Methyl Ethyl Ketone) | U | | 0.299 | 0.898 | ug/L | | | | - | | |
| 2-Chloroethylvinyl ether | U | | 0.745 | 2.24 | ug/L | | | | - | | |
| 2-Chlorotoluene | U | | 0.129 | 0.388 | ug/L | | | | - | | |
| 2-Hexanone | U | | 0.445 | 1.34 | ug/L | | | | - | | |
| 4-Chlorotoluene | U | | 0.140 | 0.420 | ug/L | | | | - | | |
| 4-Methyl-2-pentanone | U | | 0.135 | 0.405 | ug/L | | | | - | | |
| Acetone | U | | 0.277 | 0.832 | ug/L | | | | - | | |
| Acrolein | U | | 0.303 | 0.909 | ug/L | | | | - | | |
| Acrylonitrile | U | | 0.160 | 0.479 | ug/L | | | | - | | |
| Benzene | U | | 0.0300 | 0.0900 | ug/L | | | | - | | |
| Bromobenzene | U | | 0.113 | 0.340 | ug/L | | | | - | | |

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**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Blank (1601587-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Bromochloromethane | U | | 0.0570 | 0.172 | ug/L | | | | - | | |
| Bromodichloromethane | U | | 0.0860 | 0.258 | ug/L | | | | - | | |
| Bromoform | U | | 0.138 | 0.414 | ug/L | | | | - | | |
| Bromomethane | U | | 0.132 | 0.397 | ug/L | | | | - | | |
| Carbon Tetrachloride | U | | 0.0520 | 0.156 | ug/L | | | | - | | |
| Chlorobenzene | U | | 0.0790 | 0.237 | ug/L | | | | - | | |
| Chloroethane | U | | 0.308 | 0.924 | ug/L | | | | - | | |
| Chloroform | U | | 0.0770 | 0.232 | ug/L | | | | - | | |
| Chloromethane | U | | 0.0480 | 0.144 | ug/L | | | | - | | |
| cis-1,2-Dichloroethene | U | | 0.213 | 0.639 | ug/L | | | | - | | |
| cis-1,3-Dichloropropene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Dibromochloromethane | U | | 0.0660 | 0.199 | ug/L | | | | - | | |
| Dibromomethane | U | | 0.0570 | 0.171 | ug/L | | | | - | | |
| Dichlorodifluoromethane | U | | 0.0940 | 0.283 | ug/L | | | | - | | |
| Ethyl Benzene | U | | 0.0840 | 0.252 | ug/L | | | | - | | |
| Hexachlorobutadiene | U | | 0.141 | 0.424 | ug/L | | | | - | | |

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## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Blank (1601587-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Isopropylbenzene | U | | 0.116 | 0.348 | ug/L | | | | - | | |
| m,p-Xylene | U | | 0.168 | 0.505 | ug/L | | | | - | | |
| Methylene Chloride | U | | 0.751 | 2.25 | ug/L | | | | - | | |
| Methyl-tert-butyl ether | U | | 0.0860 | 0.257 | ug/L | | | | - | | |
| Naphthalene | U | | 0.579 | 1.74 | ug/L | | | | - | | |
| n-Butyl Benzene | U | | 0.266 | 0.798 | ug/L | | | | - | | |
| n-Propylbenzene | U | | 0.109 | 0.328 | ug/L | | | | - | | |
| o-Xylene | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| p-Isopropyltoluene | U | | 0.197 | 0.592 | ug/L | | | | - | | |
| sec-Butyl Benzene | U | | 0.177 | 0.531 | ug/L | | | | - | | |
| Styrene | U | | 0.0960 | 0.287 | ug/L | | | | - | | |
| tert-Butylbenzene | U | | 0.193 | 0.578 | ug/L | | | | - | | |
| Tetrachloroethene | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| Toluene | U | | 0.0350 | 0.104 | ug/L | | | | - | | |
| trans-1,2-Dichloroethene | U | | 0.107 | 0.320 | ug/L | | | | - | | |
| trans-1,3-Dichloropropene | U | | 0.250 | 0.751 | ug/L | | | | - | | |

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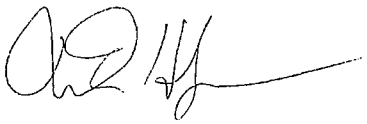
## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Blank (1601587-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Trichloroethene | U | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Trichlorofluoromethane | U | | 0.0700 | 0.211 | ug/L | | | | - | | |
| Vinyl chloride | U | | 0.0840 | 0.253 | ug/L | | | | - | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.52* | | | | ug/L | *5.000* | | *70.4* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *3.95* | | | | ug/L | *5.000* | | *79.0* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *4.25* | | | | ug/L | *5.000* | | *85.0* | *46-125* | | |
| **LCS (1601587-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 20.3 | | 0.0840 | 0.237 | ug/L | 20.00 | | 102 | 70-130 | | |
| 1,1,1-Trichloroethane | 16.6 | | 0.0380 | 0.113 | ug/L | 20.00 | | 83.0 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 17.8 | | 0.0690 | 0.207 | ug/L | 20.00 | | 89.2 | 46-157 | | |
| 1,1,2-Trichloroethane | 20.4 | | 0.0750 | 0.226 | ug/L | 20.00 | | 102 | 52-150 | | |
| 1,1-Dichloroethane | 21.7 | | 0.204 | 0.612 | ug/L | 20.00 | | 108 | 59-155 | | |
| 1,1-Dichloroethene | 22.6 | | 0.0590 | 0.176 | ug/L | 20.00 | | 113 | 0-234 | | |
| 1,1-Dichloropropene | 20.8 | | 0.120 | 0.359 | ug/L | 20.00 | | 104 | 70-130 | | |
| 1,2,3-Trichlorobenzene | 20.7 | | 0.250 | 0.751 | ug/L | 20.00 | | 103 | 70-130 | | |

Serial #: 02092016111339

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **LCS (1601587-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,2,3-Trichloropropane | 19.7 | | 0.122 | 0.366 | ug/L | 20.00 | | 98.4 | 70-130 | | |
| 1,2,4-Trichlorobenzene | 19.4 | | 0.248 | 0.745 | ug/L | 20.00 | | 96.8 | 70-130 | | |
| 1,2,4-Trimethylbenzene | 20.6 | | 0.211 | 0.633 | ug/L | 20.00 | | 103 | 70-130 | | |
| 1,2-Dibromo-3-chloropropane | 15.4 | | 0.236 | 0.708 | ug/L | 20.00 | | 76.9 | 70-130 | | |
| 1,2-Dibromoethane (EDB) | 19.2 | | 0.0710 | 0.213 | ug/L | 20.00 | | 95.8 | 70-130 | | |
| 1,2-Dichlorobenzene | 20.9 | | 0.193 | 0.580 | ug/L | 20.00 | | 105 | 18-190 | | |
| 1,2-Dichloroethane | 20.4 | | 0.0360 | 0.109 | ug/L | 20.00 | | 102 | 49-155 | | |
| 1,2-Dichloropropane | 17.1 | | 0.0450 | 0.136 | ug/L | 20.00 | | 85.3 | 0-210 | | |
| 1,3,5-Trimethylbenzene | 20.6 | | 0.135 | 0.405 | ug/L | 20.00 | | 103 | 70-130 | | |
| 1,3-Dichlorobenzene | 22.0 | | 0.195 | 0.585 | ug/L | 20.00 | | 110 | 59-156 | | |
| 1,3-Dichloropropane | 18.4 | | 0.0730 | 0.220 | ug/L | 20.00 | | 92.2 | 70-130 | | |
| 1,4-Dichlorobenzene | 21.2 | | 0.257 | 0.770 | ug/L | 20.00 | | 106 | 18-190 | | |
| 2,2-Dichloropropane | 24.2 | | 0.401 | 1.20 | ug/L | 20.00 | | 121 | 70-130 | | |
| 2-Butanone (Methyl Ethyl Ketone) | 16.6 | | 0.299 | 0.898 | ug/L | 20.00 | | 83.0 | 70-130 | | |
| 2-Chloroethylvinyl ether | 14.5 | | 0.745 | 2.24 | ug/L | 20.00 | | 72.6 | 0-305 | | |
| 2-Chlorotoluene | 20.2 | | 0.129 | 0.388 | ug/L | 20.00 | | 101 | 70-130 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **LCS (1601587-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 2-Hexanone | 12.8 | J-2, | 0.445 | 1.34 | ug/L | 20.00 | | 63.8 | 70-130 | | |
| 4-Chlorotoluene | 20.9 | | 0.140 | 0.420 | ug/L | 20.00 | | 105 | 70-130 | | |
| 4-Methyl-2-pentanone | 14.9 | | 0.135 | 0.405 | ug/L | 20.00 | | 74.6 | 70-130 | | |
| Acetone | 102 | | 0.277 | 0.832 | ug/L | 100.0 | | 102 | 70-130 | | |
| Acrolein | 114 | | 0.303 | 0.909 | ug/L | 100.0 | | 114 | 70-130 | | |
| Acrylonitrile | 19.3 | | 0.160 | 0.479 | ug/L | 20.00 | | 96.6 | 70-130 | | |
| Benzene | 20.6 | | 0.0300 | 0.0900 | ug/L | 20.00 | | 103 | 37-151 | | |
| Bromobenzene | 19.5 | | 0.113 | 0.340 | ug/L | 20.00 | | 97.3 | 70-130 | | |
| Bromochloromethane | 18.8 | | 0.0570 | 0.172 | ug/L | 20.00 | | 94.0 | 70-130 | | |
| Bromodichloromethane | 19.2 | | 0.0860 | 0.258 | ug/L | 20.00 | | 96.2 | 35-155 | | |
| Bromoform | 18.0 | | 0.138 | 0.414 | ug/L | 20.00 | | 90.0 | 45-169 | | |
| Bromomethane | 24.0 | | 0.132 | 0.397 | ug/L | 20.00 | | 120 | 0-242 | | |
| Carbon Tetrachloride | 17.0 | | 0.0520 | 0.156 | ug/L | 20.00 | | 84.8 | 70-140 | | |
| Chlorobenzene | 20.7 | | 0.0790 | 0.237 | ug/L | 20.00 | | 104 | 37-160 | | |
| Chloroethane | 22.6 | | 0.308 | 0.924 | ug/L | 20.00 | | 113 | 14-230 | | |
| Chloroform | 20.1 | | 0.0770 | 0.232 | ug/L | 20.00 | | 101 | 51-138 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **LCS (1601587-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Chloromethane | 15.6 | | 0.0480 | 0.144 | ug/L | 20.00 | | 78.0 | 0-273 | | |
| cis-1,2-Dichloroethene | 21.8 | | 0.213 | 0.639 | ug/L | 20.00 | | 109 | 70-130 | | |
| cis-1,3-Dichloropropene | 17.4 | | 0.0500 | 0.151 | ug/L | 20.00 | | 86.8 | 0-227 | | |
| Dibromochloromethane | 19.3 | | 0.0660 | 0.199 | ug/L | 20.00 | | 96.6 | 53-149 | | |
| Dibromomethane | 22.6 | | 0.0570 | 0.171 | ug/L | 20.00 | | 113 | 70-130 | | |
| Dichlorodifluoromethane | 16.3 | | 0.0940 | 0.283 | ug/L | 20.00 | | 81.6 | 70-130 | | |
| Ethyl Benzene | 20.6 | | 0.0840 | 0.252 | ug/L | 20.00 | | 103 | 37-162 | | |
| Hexachlorobutadiene | 22.4 | | 0.141 | 0.424 | ug/L | 20.00 | | 112 | 70-130 | | |
| Isopropylbenzene | 20.0 | | 0.116 | 0.348 | ug/L | 20.00 | | 100 | 70-130 | | |
| m,p-Xylene | 41.8 | | 0.168 | 0.505 | ug/L | 40.00 | | 104 | 70-130 | | |
| Methylene Chloride | 21.0 | | 0.751 | 2.25 | ug/L | 20.00 | | 105 | 0-221 | | |
| Methyl-tert-butyl ether | 21.2 | | 0.0860 | 0.257 | ug/L | 20.00 | | 106 | 70-130 | | |
| Naphthalene | 26.8 | J-2, | 0.579 | 1.74 | ug/L | 20.00 | | 134 | 70-130 | | |
| n-Butyl Benzene | 18.4 | | 0.266 | 0.798 | ug/L | 20.00 | | 91.8 | 70-130 | | |
| n-Propylbenzene | 20.2 | | 0.109 | 0.328 | ug/L | 20.00 | | 101 | 70-130 | | |
| o-Xylene | 19.1 | | 0.0840 | 0.253 | ug/L | 20.00 | | 95.6 | 70-130 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **LCS (1601587-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| p-Isopropyltoluene | 19.6 | | 0.197 | 0.592 | ug/L | 20.00 | | 97.8 | 70-130 | | |
| sec-Butyl Benzene | 20.4 | | 0.177 | 0.531 | ug/L | 20.00 | | 102 | 70-130 | | |
| Styrene | 20.0 | | 0.0960 | 0.287 | ug/L | 20.00 | | 100 | 70-130 | | |
| tert-Butylbenzene | 20.2 | | 0.193 | 0.578 | ug/L | 20.00 | | 101 | 70-130 | | |
| Tetrachloroethene | 23.0 | | 0.0840 | 0.253 | ug/L | 20.00 | | 115 | 64-148 | | |
| Toluene | 20.4 | | 0.0350 | 0.104 | ug/L | 20.00 | | 102 | 47-150 | | |
| trans-1,2-Dichloroethene | 21.8 | | 0.107 | 0.320 | ug/L | 20.00 | | 109 | 54-156 | | |
| trans-1,3-Dichloropropene | 16.7 | | 0.250 | 0.751 | ug/L | 20.00 | | 83.7 | 17-183 | | |
| Trichloroethene | 20.9 | | 0.0500 | 0.151 | ug/L | 20.00 | | 104 | 71-157 | | |
| Trichlorofluoromethane | 21.8 | | 0.0700 | 0.211 | ug/L | 20.00 | | 109 | 17-181 | | |
| Vinyl chloride | 16.2 | | 0.0840 | 0.253 | ug/L | 20.00 | | 80.8 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.95* | *J-1,* | | | ug/L | *5.000* | | *139* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *10.1* | *J-1,* | | | ug/L | *5.000* | | *201* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.63* | *J-1,* | | | ug/L | *5.000* | | *133* | *46-125* | | |
| **Matrix Spike (1601587-MS1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |

Serial #: 02092016111339

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601587-MS1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 38.8 | | 0.168 | 0.474 | ug/L | 40.00 | U | 97.0 | 70-130 | | |
| 1,1,1-Trichloroethane | 24.5 | | 0.0760 | 0.226 | ug/L | 40.00 | U | 61.2 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 38.8 | | 0.138 | 0.414 | ug/L | 40.00 | U | 97.0 | 46-157 | | |
| 1,1,2-Trichloroethane | 41.3 | | 0.150 | 0.452 | ug/L | 40.00 | U | 103 | 52-150 | | |
| 1,1-Dichloroethane | 40.0 | | 0.408 | 1.22 | ug/L | 40.00 | U | 100 | 59-155 | | |
| 1,1-Dichloroethene | 40.6 | | 0.118 | 0.352 | ug/L | 40.00 | U | 101 | 0-234 | | |
| 1,1-Dichloropropene | 41.1 | | 0.240 | 0.718 | ug/L | 40.00 | U | 103 | 70-130 | | |
| 1,2,3-Trichlorobenzene | 54.6 | J-3, | 0.500 | 1.50 | ug/L | 40.00 | U | 136 | 70-130 | | |
| 1,2,3-Trichloropropane | 44.7 | | 0.244 | 0.732 | ug/L | 40.00 | U | 112 | 70-130 | | |
| 1,2,4-Trichlorobenzene | 48.9 | | 0.496 | 1.49 | ug/L | 40.00 | U | 122 | 70-130 | | |
| 1,2,4-Trimethylbenzene | 38.4 | | 0.422 | 1.27 | ug/L | 40.00 | U | 96.0 | 70-130 | | |
| 1,2-Dibromo-3-chloropropane | 47.4 | | 0.472 | 1.42 | ug/L | 40.00 | U | 118 | 70-130 | | |
| 1,2-Dibromoethane (EDB) | 39.4 | | 0.142 | 0.426 | ug/L | 40.00 | U | 98.4 | 70-130 | | |
| 1,2-Dichlorobenzene | 37.7 | | 0.386 | 1.16 | ug/L | 40.00 | U | 94.2 | 18-190 | | |
| 1,2-Dichloroethane | 43.0 | | 0.0720 | 0.218 | ug/L | 40.00 | U | 108 | 49-155 | | |
| 1,2-Dichloropropane | 33.0 | | 0.0900 | 0.272 | ug/L | 40.00 | U | 82.6 | 0-210 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601587-MS1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,3,5-Trimethylbenzene | 38.4 | | 0.270 | 0.810 | ug/L | 40.00 | U | 96.0 | 70-130 | | |
| 1,3-Dichlorobenzene | 39.5 | | 0.390 | 1.17 | ug/L | 40.00 | U | 98.6 | 59-156 | | |
| 1,3-Dichloropropane | 36.9 | | 0.146 | 0.440 | ug/L | 40.00 | U | 92.2 | 70-130 | | |
| 1,4-Dichlorobenzene | 39.4 | | 0.514 | 1.54 | ug/L | 40.00 | U | 98.5 | 18-190 | | |
| 2,2-Dichloropropane | 39.0 | | 0.802 | 2.40 | ug/L | 40.00 | U | 97.6 | 70-130 | | |
| 2-Butanone (Methyl Ethyl Ketone) | 46.1 | | 0.598 | 1.80 | ug/L | 40.00 | U | 115 | 70-130 | | |
| 2-Chloroethylvinyl ether | 3.68 | I | 1.49 | 4.47 | ug/L | 40.00 | U | 9.20 | 0-305 | | |
| 2-Chlorotoluene | 36.6 | | 0.258 | 0.776 | ug/L | 40.00 | U | 91.6 | 70-130 | | |
| 2-Hexanone | 38.3 | J-2, | 0.890 | 2.67 | ug/L | 40.00 | U | 95.8 | 70-130 | | |
| 4-Chlorotoluene | 37.4 | | 0.280 | 0.840 | ug/L | 40.00 | U | 93.6 | 70-130 | | |
| 4-Methyl-2-pentanone | 40.3 | | 0.270 | 0.810 | ug/L | 40.00 | U | 101 | 70-130 | | |
| Acetone | 368 | J-3, | 0.554 | 1.66 | ug/L | 200.0 | 78.5 | 145 | 70-130 | | |
| Acrolein | 137 | | 0.606 | 1.82 | ug/L | 200.0 | U | 68.6 | 70-130 | | |
| Acrylonitrile | 46.0 | | 0.320 | 0.958 | ug/L | 40.00 | U | 115 | 70-130 | | |
| Benzene | 38.7 | | 0.0600 | 0.180 | ug/L | 40.00 | U | 96.6 | 37-151 | | |
| Bromobenzene | 35.7 | | 0.226 | 0.680 | ug/L | 40.00 | U | 89.2 | 70-130 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601587-MS1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Bromochloromethane | 34.2 | | 0.114 | 0.344 | ug/L | 40.00 | U | 85.4 | 70-130 | | |
| Bromodichloromethane | 37.6 | | 0.172 | 0.516 | ug/L | 40.00 | U | 94.1 | 35-155 | | |
| Bromoform | 37.4 | | 0.276 | 0.828 | ug/L | 40.00 | U | 93.6 | 45-169 | | |
| Bromomethane | 24.2 | | 0.264 | 0.794 | ug/L | 40.00 | U | 60.4 | 0-242 | | |
| Carbon Tetrachloride | 24.2 | | 0.104 | 0.312 | ug/L | 40.00 | U | 60.6 | 70-140 | | |
| Chlorobenzene | 38.4 | | 0.158 | 0.474 | ug/L | 40.00 | U | 96.1 | 37-160 | | |
| Chloroethane | 37.8 | | 0.616 | 1.85 | ug/L | 40.00 | U | 94.5 | 14-230 | | |
| Chloroform | 32.6 | | 0.154 | 0.464 | ug/L | 40.00 | 1.44 | 77.8 | 51-138 | | |
| Chloromethane | 37.0 | | 0.0960 | 0.288 | ug/L | 40.00 | U | 92.6 | 0-273 | | |
| cis-1,2-Dichloroethene | 38.6 | | 0.426 | 1.28 | ug/L | 40.00 | U | 96.6 | 70-130 | | |
| cis-1,3-Dichloropropene | 26.4 | | 0.100 | 0.302 | ug/L | 40.00 | U | 66.0 | 0-227 | | |
| Dibromochloromethane | 38.2 | | 0.132 | 0.398 | ug/L | 40.00 | U | 95.6 | 53-149 | | |
| Dibromomethane | 40.7 | | 0.114 | 0.342 | ug/L | 40.00 | U | 102 | 70-130 | | |
| Dichlorodifluoromethane | 38.2 | | 0.188 | 0.566 | ug/L | 40.00 | U | 95.4 | 70-130 | | |
| Ethyl Benzene | 38.1 | | 0.168 | 0.504 | ug/L | 40.00 | U | 95.2 | 37-162 | | |
| Hexachlorobutadiene | 49.8 | | 0.282 | 0.848 | ug/L | 40.00 | U | 125 | 70-130 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601587-MS1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Isopropylbenzene | 36.0 | | 0.232 | 0.696 | ug/L | 40.00 | U | 90.0 | 70-130 | | |
| m,p-Xylene | 75.7 | | 0.336 | 1.01 | ug/L | 80.00 | U | 94.6 | 70-130 | | |
| Methylene Chloride | 38.6 | | 1.50 | 4.51 | ug/L | 40.00 | U | 96.4 | 0-221 | | |
| Methyl-tert-butyl ether | 41.5 | | 0.172 | 0.514 | ug/L | 40.00 | U | 104 | 70-130 | | |
| Naphthalene | 108 | J-2, J-3, | 1.16 | 3.48 | ug/L | 40.00 | U | 270 | 70-130 | | |
| n-Butyl Benzene | 34.5 | | 0.532 | 1.60 | ug/L | 40.00 | U | 86.2 | 70-130 | | |
| n-Propylbenzene | 36.4 | | 0.218 | 0.656 | ug/L | 40.00 | U | 91.0 | 70-130 | | |
| o-Xylene | 35.0 | | 0.168 | 0.506 | ug/L | 40.00 | U | 87.6 | 70-130 | | |
| p-Isopropyltoluene | 35.6 | | 0.394 | 1.18 | ug/L | 40.00 | U | 89.1 | 70-130 | | |
| sec-Butyl Benzene | 36.6 | | 0.354 | 1.06 | ug/L | 40.00 | U | 91.4 | 70-130 | | |
| Styrene | 35.4 | | 0.192 | 0.574 | ug/L | 40.00 | U | 88.6 | 70-130 | | |
| tert-Butylbenzene | 36.3 | | 0.386 | 1.16 | ug/L | 40.00 | U | 90.6 | 70-130 | | |
| Tetrachloroethene | 42.9 | | 0.168 | 0.506 | ug/L | 40.00 | U | 107 | 64-148 | | |
| Toluene | 45.8 | | 0.0700 | 0.208 | ug/L | 40.00 | 7.96 | 94.5 | 47-150 | | |
| trans-1,2-Dichloroethene | 40.0 | | 0.214 | 0.640 | ug/L | 40.00 | U | 100 | 54-156 | | |
| trans-1,3-Dichloropropene | 33.2 | | 0.500 | 1.50 | ug/L | 40.00 | U | 83.0 | 17-183 | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1601587-MS1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Trichloroethene | 37.6 | | 0.100 | 0.302 | ug/L | 40.00 | U | 94.1 | 71-157 | | |
| Trichlorofluoromethane | 40.7 | | 0.140 | 0.422 | ug/L | 40.00 | U | 102 | 17-181 | | |
| Vinyl chloride | 38.1 | | 0.168 | 0.506 | ug/L | 40.00 | U | 95.3 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *13.6* | *J-1,* | | | ug/L | *10.00* | | *136* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *20.6* | *J-1,* | | | ug/L | *10.00* | | *206* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *13.9* | *J-1,* | | | ug/L | *10.00* | | *139* | *46-125* | | |
| **Matrix Spike Dup (1601587-MSD1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 42.8 | | 0.168 | 0.474 | ug/L | 40.00 | U | 107 | 70-130 | 9.71 | 30 |
| 1,1,1-Trichloroethane | 35.0 | | 0.0760 | 0.226 | ug/L | 40.00 | U | 87.6 | 52-162 | 35.5 | 30 |
| 1,1,2,2-Tetrachloroethane | 44.1 | | 0.138 | 0.414 | ug/L | 40.00 | U | 110 | 46-157 | 12.8 | 30 |
| 1,1,2-Trichloroethane | 46.3 | | 0.150 | 0.452 | ug/L | 40.00 | U | 116 | 52-150 | 11.3 | 30 |
| 1,1-Dichloroethane | 43.8 | | 0.408 | 1.22 | ug/L | 40.00 | U | 109 | 59-155 | 8.98 | 30 |
| 1,1-Dichloroethene | 42.4 | | 0.118 | 0.352 | ug/L | 40.00 | U | 106 | 0-234 | 4.34 | 30 |
| 1,1-Dichloropropene | 39.5 | | 0.240 | 0.718 | ug/L | 40.00 | U | 98.8 | 70-130 | 4.02 | 30 |
| 1,2,3-Trichlorobenzene | 62.8 | J-3, | 0.500 | 1.50 | ug/L | 40.00 | U | 157 | 70-130 | 14.0 | 30 |

Serial #: 02092016111339

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601587-MSD1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 1,2,3-Trichloropropane | 49.8 | | 0.244 | 0.732 | ug/L | 40.00 | U | 124 | 70-130 | 10.7 | 30 |
| 1,2,4-Trichlorobenzene | 56.4 | | 0.496 | 1.49 | ug/L | 40.00 | U | 141 | 70-130 | 14.1 | 30 |
| 1,2,4-Trimethylbenzene | 42.3 | | 0.422 | 1.27 | ug/L | 40.00 | U | 106 | 70-130 | 9.81 | 30 |
| 1,2-Dibromo-3-chloropropane | 55.1 | | 0.472 | 1.42 | ug/L | 40.00 | U | 138 | 70-130 | 15.1 | 30 |
| 1,2-Dibromoethane (EDB) | 42.7 | | 0.142 | 0.426 | ug/L | 40.00 | U | 107 | 70-130 | 8.09 | 30 |
| 1,2-Dichlorobenzene | 41.1 | | 0.386 | 1.16 | ug/L | 40.00 | U | 103 | 18-190 | 8.69 | 30 |
| 1,2-Dichloroethane | 42.1 | | 0.0720 | 0.218 | ug/L | 40.00 | U | 105 | 49-155 | 2.11 | 30 |
| 1,2-Dichloropropane | 38.7 | | 0.0900 | 0.272 | ug/L | 40.00 | U | 96.8 | 0-210 | 15.9 | 30 |
| 1,3,5-Trimethylbenzene | 41.7 | | 0.270 | 0.810 | ug/L | 40.00 | U | 104 | 70-130 | 8.19 | 30 |
| 1,3-Dichlorobenzene | 43.3 | | 0.390 | 1.17 | ug/L | 40.00 | U | 108 | 59-156 | 9.37 | 30 |
| 1,3-Dichloropropane | 40.9 | | 0.146 | 0.440 | ug/L | 40.00 | U | 102 | 70-130 | 10.4 | 30 |
| 1,4-Dichlorobenzene | 43.5 | | 0.514 | 1.54 | ug/L | 40.00 | U | 109 | 18-190 | 9.94 | 30 |
| 2,2-Dichloropropane | 45.7 | | 0.802 | 2.40 | ug/L | 40.00 | U | 114 | 70-130 | 15.8 | 30 |
| 2-Butanone (Methyl Ethyl Ketone) | 45.7 | | 0.598 | 1.80 | ug/L | 40.00 | U | 114 | 70-130 | 0.916 | 30 |
| 2-Chloroethylvinyl ether | U | | 1.49 | 4.47 | ug/L | 40.00 | U | | 0-305 | 200 | 30 |
| 2-Chlorotoluene | 40.4 | | 0.258 | 0.776 | ug/L | 40.00 | U | 101 | 70-130 | 9.76 | 30 |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 16A0398

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601587-MSD1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| 2-Hexanone | 46.1 | J-2, | 0.890 | 2.67 | ug/L | 40.00 | U | 115 | 70-130 | 18.4 | 30 |
| 4-Chlorotoluene | 41.1 | | 0.280 | 0.840 | ug/L | 40.00 | U | 103 | 70-130 | 9.47 | 30 |
| 4-Methyl-2-pentanone | 46.0 | | 0.270 | 0.810 | ug/L | 40.00 | U | 115 | 70-130 | 13.1 | 30 |
| Acetone | 401 | J-3, | 0.554 | 1.66 | ug/L | 200.0 | 78.5 | 161 | 70-130 | 10.9 | 30 |
| Acrolein | 145 | | 0.606 | 1.82 | ug/L | 200.0 | U | 72.6 | 70-130 | 5.68 | 30 |
| Acrylonitrile | 50.4 | | 0.320 | 0.958 | ug/L | 40.00 | U | 126 | 70-130 | 9.13 | 30 |
| Benzene | 41.7 | | 0.0600 | 0.180 | ug/L | 40.00 | U | 104 | 37-151 | 7.61 | 30 |
| Bromobenzene | 40.0 | | 0.226 | 0.680 | ug/L | 40.00 | U | 100 | 70-130 | 11.5 | 30 |
| Bromochloromethane | 39.1 | | 0.114 | 0.344 | ug/L | 40.00 | U | 97.8 | 70-130 | 13.5 | 30 |
| Bromodichloromethane | 40.2 | | 0.172 | 0.516 | ug/L | 40.00 | U | 100 | 35-155 | 6.53 | 30 |
| Bromoform | 40.3 | | 0.276 | 0.828 | ug/L | 40.00 | U | 101 | 45-169 | 7.26 | 30 |
| Bromomethane | 23.0 | | 0.264 | 0.794 | ug/L | 40.00 | U | 57.6 | 0-242 | 4.75 | 30 |
| Carbon Tetrachloride | 33.6 | | 0.104 | 0.312 | ug/L | 40.00 | U | 84.0 | 70-140 | 32.4 | 30 |
| Chlorobenzene | 41.8 | | 0.158 | 0.474 | ug/L | 40.00 | U | 104 | 37-160 | 8.37 | 30 |
| Chloroethane | 32.9 | | 0.616 | 1.85 | ug/L | 40.00 | U | 82.4 | 14-230 | 13.7 | 30 |
| Chloroform | 42.1 | | 0.154 | 0.464 | ug/L | 40.00 | 1.44 | 102 | 51-138 | 26.5 | 30 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601587-MSD1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Chloromethane | 37.8 | | 0.0960 | 0.288 | ug/L | 40.00 | U | 94.4 | 0-273 | 1.98 | 30 |
| cis-1,2-Dichloroethene | 44.8 | | 0.426 | 1.28 | ug/L | 40.00 | U | 112 | 70-130 | 14.9 | 30 |
| cis-1,3-Dichloropropene | 28.6 | | 0.100 | 0.302 | ug/L | 40.00 | U | 71.6 | 0-227 | 8.07 | 30 |
| Dibromochloromethane | 42.0 | | 0.132 | 0.398 | ug/L | 40.00 | U | 105 | 53-149 | 9.28 | 30 |
| Dibromomethane | 48.7 | | 0.114 | 0.342 | ug/L | 40.00 | U | 122 | 70-130 | 18.0 | 30 |
| Dichlorodifluoromethane | 38.7 | | 0.188 | 0.566 | ug/L | 40.00 | U | 96.7 | 70-130 | 1.35 | 30 |
| Ethyl Benzene | 41.0 | | 0.168 | 0.504 | ug/L | 40.00 | U | 103 | 37-162 | 7.49 | 30 |
| Hexachlorobutadiene | 63.6 | | 0.282 | 0.848 | ug/L | 40.00 | U | 159 | 70-130 | 24.4 | 30 |
| Isopropylbenzene | 39.6 | | 0.232 | 0.696 | ug/L | 40.00 | U | 99.1 | 70-130 | 9.62 | 30 |
| m,p-Xylene | 81.2 | | 0.336 | 1.01 | ug/L | 80.00 | U | 102 | 70-130 | 6.98 | 30 |
| Methylene Chloride | 42.6 | | 1.50 | 4.51 | ug/L | 40.00 | U | 106 | 0-221 | 9.86 | 30 |
| Methyl-tert-butyl ether | 46.9 | | 0.172 | 0.514 | ug/L | 40.00 | U | 117 | 70-130 | 12.1 | 30 |
| Naphthalene | 130 | J-2, J-3, | 1.16 | 3.48 | ug/L | 40.00 | U | 325 | 70-130 | 18.5 | 30 |
| n-Butyl Benzene | 39.7 | | 0.532 | 1.60 | ug/L | 40.00 | U | 99.4 | 70-130 | 14.1 | 30 |
| n-Propylbenzene | 39.6 | | 0.218 | 0.656 | ug/L | 40.00 | U | 99.0 | 70-130 | 8.48 | 30 |
| o-Xylene | 38.9 | | 0.168 | 0.506 | ug/L | 40.00 | U | 97.2 | 70-130 | 10.4 | 30 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601587 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1601587-MSD1)** | **Source: 16A0577-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| p-Isopropyltoluene | 40.7 | | 0.394 | 1.18 | ug/L | 40.00 | U | 102 | 70-130 | 13.4 | 30 |
| sec-Butyl Benzene | 41.4 | | 0.354 | 1.06 | ug/L | 40.00 | U | 104 | 70-130 | 12.5 | 30 |
| Styrene | 39.3 | | 0.192 | 0.574 | ug/L | 40.00 | U | 98.2 | 70-130 | 10.3 | 30 |
| tert-Butylbenzene | 40.2 | | 0.386 | 1.16 | ug/L | 40.00 | U | 100 | 70-130 | 10.3 | 30 |
| Tetrachloroethene | 46.2 | | 0.168 | 0.506 | ug/L | 40.00 | U | 115 | 64-148 | 7.37 | 30 |
| Toluene | 48.1 | | 0.0700 | 0.208 | ug/L | 40.00 | 7.96 | 100 | 47-150 | 6.00 | 30 |
| trans-1,2-Dichloroethene | 42.1 | | 0.214 | 0.640 | ug/L | 40.00 | U | 105 | 54-156 | 5.02 | 30 |
| trans-1,3-Dichloropropene | 36.0 | | 0.500 | 1.50 | ug/L | 40.00 | U | 89.9 | 17-183 | 8.04 | 30 |
| Trichloroethene | 41.2 | | 0.100 | 0.302 | ug/L | 40.00 | U | 103 | 71-157 | 8.98 | 30 |
| Trichlorofluoromethane | 38.1 | | 0.140 | 0.422 | ug/L | 40.00 | U | 95.2 | 17-181 | 6.75 | 30 |
| Vinyl chloride | 38.0 | | 0.168 | 0.506 | ug/L | 40.00 | U | 95.0 | 0-251 | 0.263 | 30 |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *13.9* | *J-1,* | | | ug/L | *10.00* | | *139* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *21.3* | *J-1,* | | | ug/L | *10.00* | | *213* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *14.0* | *J-1,* | | | ug/L | *10.00* | | *140* | *46-125* | | |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601556 - TOC SM 5310C** | | | | | | | | | | | |
| **Blank (1601556-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | U | | 0.168 | 0.504 | mg/L | | | | - | | |
| **LCS (1601556-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | 4.71 | | 0.168 | 0.504 | mg/L | 5.000 | | 94.2 | 80-120 | | |
| **Duplicate (1601556-DUP1)** | **Source: 16A0510-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | U | | 0.168 | 0.504 | mg/L | | U | | - | | 20 |
| **Matrix Spike (1601556-MS1)** | **Source: 16A0510-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | 5.57 | | 0.168 | 0.504 | mg/L | 5.000 | U | 111 | 80-120 | | |
| **Matrix Spike Dup (1601556-MSD1)** | **Source: 16A0510-01** | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Total Organic Carbon | 5.57 | | 0.168 | 0.504 | mg/L | 5.000 | U | 111 | 80-120 | 0.00 | 20 |
| **Batch 1601793 - EPA 335.4** | | | | | | | | | | | |
| **Blank (1601793-BLK1)** | | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | U | | 0.00230 | 0.00690 | mg/L | | | | - | | |

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental TNI #: 86006**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1601793 - EPA 335.4** | | | | | | | | | | | |
| **LCS (1601793-BS1)** | | | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.187 | | 0.00230 | 0.00690 | mg/L | 0.2000 | | 93.5 | 90-110 | | |
| **Duplicate (1601793-DUP1)** | | **Source: 16A0561-01** | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.00320 | I | 0.00230 | 0.00690 | mg/L | | 0.00290 | | - | 9.84 | 20 |
| **Matrix Spike (1601793-MS1)** | | **Source: 16A0561-01** | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.197 | | 0.00230 | 0.00690 | mg/L | 0.2000 | 0.00290 | 97.0 | 90-110 | | |
| **Matrix Spike (1601793-MS2)** | | **Source: 16A0758-01** | Prepared & Analyzed: 01/29/2016 | | | | | | | | |
| Cyanide (total) | 0.192 | | 0.00230 | 0.00690 | mg/L | 0.2000 | U | 96.0 | 90-110 | | |

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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

Attn: Chrissi-lee Williams

## Subcontracted Analyses - Quality Control

**Analyzed at: Florida-Spectrum TNI #: E87671**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 42954 - EPA 420.1** | | | | | | | | | | | |
| **Blank (42954-BLK1)** | | | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | U | | 0.0340 | 0.102 | mg/L | | | | - | | |
| **LCS (42954-BS1)** | | | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | 1 | | 0.0340 | 0.102 | mg/L | 1 | | 100 | 70-130 | | |
| **Matrix Spike (42954-MS1)** | **Source: 16A0595-01** | | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | 1 | | 0.0340 | 0.102 | mg/L | 1 | <0.034 | 100 | 70-130 | | |
| **Matrix Spike Dup (42954-MSD1)** | **Source: 16A0595-01** | | Prepared: 01/25/2016 Analyzed: 02/03/2016 | | | | | | | | |
| Phenolics | 1.01 | | 0.0340 | 0.102 | mg/L | 1 | <0.034 | 101 | 70-130 | 1 | 30 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 16A0398

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Metals - Quality Control

**Analyzed at: Jupiter Environmental Labs TNI # E86546**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch MHG1813 - EPA 1631E** | | | | | | | | | | | |
| **Blank (MHG1813-BLK1)** | | | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | U | | 0.00025 | 0.001 | ug/L | | | | - | | |
| **LCS (MHG1813-BS1)** | | | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | 0.0122 | | 0.00025 | 0.001 | ug/L | 0.01 | | 122 | 77-123 | | |
| **Matrix Spike (MHG1813-MS1)** | | **Source: 16A0377-01** | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | 0.00721 | | 0.00025 | 0.001 | ug/L | 0.005 | 0.0011 | 122 | 71-125 | | |
| **Matrix Spike Dup (MHG1813-MSD1)** | | **Source: 16A0377-01** | Prepared: 01/22/2016 Analyzed: 01/25/2016 | | | | | | | | |
| Mercury | 0.00697 | | 0.00025 | 0.001 | ug/L | 0.005 | 0.0011 | 117 | 71-125 | 3.39 | 24 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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**Reported:**
02/09/2016 11:13

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **16A0398-01 I005 Steam Generator Blowdown** | | |
| | A | 40 mL Voa Vial - HCl |
| | B | 40 mL Voa Vial - HCl |
| | C | 40mL Amber H3PO4+CuSO4 |
| | D | 40mL Clear NaOH |
| | E | 500mL Clear Glass - Unpres |
| | F | Amber Glass H2SO4 - 1000 mL |
| | G | Amber Unpres - 1000mL |
| | H | Amber Unpres - 1000mL |
| | I | Plastic 250 mL - HN03 |
| | J | Poly H2SO4 - 250mL |
| | K | Poly HNO3 - 250 mL |
| | L | Poly HNO3 - 500mL |

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**Reported:**
02/09/2016 11:13

| | | |
|---|---|---|
| | M | Poly Unpres - 1000mL |
| | N | Poly Unpres - 500mL |
| | O | VOA Vial - H2SO4 |
| | P | VOA Vial - H2SO4 |

**16A0398-02 SGB Grab - 1**

| | | |
|---|---|---|
| | A | 40 mL Voa Vial - HCl |
| | B | 40 mL Voa Vial - HCl |
| | C | 40 mL Voa Vial - HCl |
| | D | 40mL Amber H3PO4+CuSO4 |
| | E | 40mL Clear NaOH |
| | F | Amber Glass H2SO4 - 1000 mL |

**16A0398-03 SGB Grab - 2**

| | | |
|---|---|---|
| | A | 40 mL Voa Vial - HCl |
| | B | 40 mL Voa Vial - HCl |
| | C | 40 mL Voa Vial - HCl |

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

| | | |
|---|---|---|
| | D | 40mL Amber H3PO4+CuSO4 |
| | E | 40mL Clear NaOH |
| | F | Amber Glass H2SO4 - 1000 mL |

**16A0398-04 SGB Grab - 3**

| | | |
|---|---|---|
| | A | 40 mL Voa Vial - HCl |
| | B | 40 mL Voa Vial - HCl |
| | C | 40 mL Voa Vial - HCl |
| | D | 40mL Amber H3PO4+CuSO4 |
| | E | 40mL Clear NaOH |
| | F | Amber Glass H2SO4 - 1000 mL |

**16A0398-05 SGB Grab - 4**

| | | |
|---|---|---|
| | A | 40 mL Voa Vial - HCl |
| | B | 40 mL Voa Vial - HCl |
| | C | 40 mL Voa Vial - HCl |
| | D | 40mL Amber H3PO4+CuSO4 |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

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**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

| | |
|---|---|
| E | 40mL Clear NaOH |
| F | Amber Glass H2SO4 - 1000 mL |

Serial #: 02092016111339

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

## Notes and Definitions

| | |
|---|---|
| J-3 | The matrix spike recovery exceeded method acceptance limits indicating matrix interference. |
| J-2 | The laboratory control sample recovery exceeded method acceptance limits. |
| J2 | The MS/MSD failed to meet the established quality control criteria for either precision or accuracy due to high levels of target analytes;. However the Laboratory Control Spike is within QA/QC limits. |
| J-1 | Surrogate recovery limits have been exceeded. |
| J1 | The Matrix Spike and/or Matrix spike duplicate was outside control limits due to potential matrix interference. Batch is accepted on BKS/BSD recoveries within control limits. |
| A | Value reported is the arithmetic mean (average) of two or more determinations. This code shall be used if the reported value is the average of results for two or more discrete and separate samples. These samples shall have been processed and analyzed inde |
| J-3 | [Undefined] |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

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FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 16A0398

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
02/09/2016 11:13

V Analyte detected in the sample and the associated preparation blank

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

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Tom Helton For Phoebe Brown, Central Lab Manager

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** FSL - FPL St. Lucie Power Plant
**Project:** FSL - I005 Steam Blowdown Permit I
**Project Manager:** Chrissi-Ice Williams
**Project Number:** PSL Permit Renewal Project

16A0398

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I005 Steam Generator Blowdown | Water | Composite | 1/21/16 | 12:30 | [redacted] | 40 mL Voa Vial - HCl | 10 | EPA 624 |
| 01 | I005 Steam Generator Blowdown | Water | Composite | | | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 01 | I005 Steam Generator Blowdown | Water | Composite | | | | 40mL Clear NaOH | 1 | SUB Cyanide |
| 01 | I005 Steam Generator Blowdown | Water | Composite | | | | 500mL Clear Glass - Unpres | 1 | SUB Low Level Mercury |
| 01 | I005 Steam Generator Blowdown | Water | Composite | | | | Amber Glass H2SO4 - 1000 mL | 1 | Wet Chem - Oil and Grease |
| 01 | I005 Steam Generator Blowdown | Water | Composite | | | | Amber Unpres - 1000mL | 2 | EPA 625 |

**Lot Number of Preservative Used:** FSE0613-HNO3 **Amount Used:** .3mL **Lot Number of Preservative Used:** FSD2118-H2SO4 **Amount Used:** 1.0mL

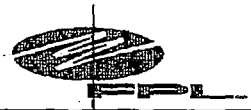
**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

Cert Clean Bottles Lot # FSJ2601 - Amber 1000mL
FSG2203 - 250mL
FSH0504 - 1000mL Poly

RECEIVED @ 1.4°C

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| [redacted] | 12/2/15 09:00 | [redacted] | 1/21/16 15:25 |
| Received By | Date/Time | Received By | Date/Time |
| [redacted] | 12/21/16 15:25 | | |

Document Control #: 453 revision 0



## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - I005 Steam Blowdown Permit I
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I005 Steam Generator Blowdown | Water | Composite | 1/21/16 | 12:30 | | Plastic 250 mL - HN03 | 1 | ME - Antimony by 200.7<br>ME - Boron by EPA 200.7<br>ME - Molybdenum by EPA 200.7<br>ME - Tin by EPA 200.7<br>ME - Titanium by EPA 200.7 |
| 01 | I005 Steam Generator Blowdown | Water | Composite | ↓ | ↓ | | Poly H2SO4 - 250mL | 1 | Wet Chem - Ammonia_Distilled by EPA 350.1<br>Wet Chem - COD<br>Wet Chem - Total Nitrogen<br>Wet Chem - Total Phosphorus by SM4500-P F |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - I005 Steam Blowdown Permit I
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I005 Steam Generator Blowdown | Water | Composite | 1/21/16 | 12:30 | DT | Poly HNO3 - 250 mL | 1 ✓ | ME - Arsenic by 200.7<br>ME - Beryllium by 200.7<br>ME - Cadmium by 200.7<br>ME - Chromium by 200.7<br>ME - Copper Total 200.7<br>ME - Iron by 200.7<br>ME - Lead by 200.7<br>ME - Magnesium by 200.7<br>ME - Nickel by 200.7<br>ME - Selenium by 200.7<br>ME - Silver by 200.7<br>ME - Thallium by EPA 200.7<br>ME - Zinc by 200.7 |
| 01 | I005 Steam Generator Blowdown | Water | Composite | 1/21/16 | 12:30 | | Poly HNO3 - 500mL | 1 ✓ | SUB - EPA 900 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

see page 1

Relinquished By | Date/Time | Relinquished By | Date/Time

Received By | Date/Time | Received By | Date/Time

**CHAIN OF CUSTODY / BOTTLE ORDER**

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West Palm Beach, FL 33407

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**Project:** PSL - I005 Steam Blowdown Permit I
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I005 Steam Generator Blowdown | Water | Composite | 1/21/16 | 12:30 | | Poly Unpres - 1000mL | 1 ✓ | SUB CBOD |
| 01 | I005 Steam Generator Blowdown | Water | Composite | ↓ | ↓ | | Poly Unpres - 500mL | 1 ✓ | Wet Chem - Conductivity<br>Wet Chem - TSS |
| 01 | I005 Steam Generator Blowdown | Water | Composite | ↓ | ↓ | | VOA Vial - H2SO4 | 2 ✓ | SUB - TOC |
| 02 | SGB Grab - 1 | Water | Grab | 1/19/16 | 16:00 | | 40 mL Voa Vial - HCl | 8 ✓ | EPA 624 |
| 02 | SGB Grab - 1 | Water | Grab | ↓ | ↓ | | 40mL Amber H3PO4+CuSO4 | 1 ✓ | SUB Phenols |
| 02 | SGB Grab - 1 | Water | Grab | ↓ | ↓ | | 40mL Clear NaOH | 1 ✓ | SUB Cyanide |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - I005 Steam Blowdown Permit I
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 02 | SGB Grab - 1 | Water | Grab | 1/19/16 | 16:00 | DT | Amber Glass H2SO4 - 1000 mL | 1 ✓ | Wet Chem - Oil and Grease |
| 03 | SGB Grab - 2 | Water | Grab | 1/19/16 | 22:00 | | 40 mL Voa Vial - HCl | 3 | EPA 624 |
| 03 | SGB Grab - 2 | Water | Grab | ↓ | ↓ | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 03 | SGB Grab - 2 | Water | Grab | | | | 40mL Clear NaOH | 1 | SUB Cyanide |
| 03 | SGB Grab - 2 | Water | Grab | ↓ | ↓ | | Amber Glass H2SO4 - 1000 mL | 1 | Wet Chem - Oil and Grease |
| 04 | SGB Grab - 3 | Water | Grab | 1/20/16 | 04:00 | BB | 40 mL Voa Vial - HCl | 3 | EPA 624 |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

see page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

Document Control #: 453 revision 0

## CHAIN OF CUSTODY / BOTTLE ORDER

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**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - I005 Steam Blowdown Permit I
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 04 | SGB Grab - 3 | Water | Grab | 1/20/16 | 4:00 | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 04 | SGB Grab - 3 | Water | Grab | ↓ | ↓ | | 40mL Clear NaOH | 1 | SUB Cyanide |
| 04 | SGB Grab - 3 | Water | Grab | ↓ | ↓ | | Amber Glass H2SO4 - 1000 mL | 1 | Wet Chem - Oil and Grease |
| 05 | SGB Grab - 4 | Water | Grab | 1/21/16 | 10:00 | | 40 mL Voa Vial - HCl | 3 | EPA 624 |
| 05 | SGB Grab - 4 | Water | Grab | ↓ | ↓ | | 40mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 05 | SGB Grab - 4 | Water | Grab | ↓ | ↓ | | 40mL Clear NaOH | 1 | SUB Cyanide |

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

## CHAIN OF CUSTODY / BOTTLE ORDER

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West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - I005 Steam Blowdown Permit I
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 05 | SGB Grab - 4 | Water | Grab | ↓ | ↓ | | Amber Glass H2SO4 - 1000 mL | 1 | Wet Chem - Oil and Grease |

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

**Lot Number of Preservative Used:** _____ **Amount Used:**_____ **Lot Number of Preservative Used:** _____ **Amount Used:**_____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

16A0398

Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 1/21/16 15:25
Chain of Custody ID:
Initials: SW

Central Laboratory

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | Yes | No | N/A | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | N/A | |
| #3. Shipping container in good condition? | Yes | No | None | |
| #4. Chain of Custody (COC) present? | Yes | No | | |
| #5. COC signed when relinquished? | Yes | No | | |
| #6. Samples received in ice? | Yes | No | N/A | |
| If NO? Temp = ____ °C | | | | |
| Temp = > 6°C? Management/customer notified? | Yes | No | Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | Yes | No | | |
| #8. Container label(s) legible and intact? | Yes | No | | |
| #9. Any missing/extra samples? | Yes | No | | |
| #10. COC signed when received? | Yes | No | | |
| #11. Sample analysis instructions complete on COC? | Yes | No | | |
| #12. Sample matrix/properties agree with COC? | Yes | No | | |
| #13. Samples in proper container/bottle? | Yes | No | | |
| #14. Sample container(s) intact? | Yes | No | | |
| #15. Samples have proper chemical preservation? | Yes | No | N/A | pH= 2 |
| If NO? a. Chemical preservation added:____ | | | | |
| Lot#:____ Amount added:____ | | | | |
| Date:____ Time:____ Initials:____ | | | | |
| b. pH after 24 hours:____ | | | | |
| Date:____ Time:____ Initials:____ | | | | |
| #16. Sufficient sample amount for indicated test(s)? | Yes | No | | |
| #17. All samples received within sufficient hold time (HT)? | Yes | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration? | Yes | No | N/A | |
| Date:____ Time:____ Initials:____ | | | | |
| #19. Subcontract of sample(s)? | Yes | No | | |
| #20. VOC samples have zero headspace? | Yes | No | N/A | |
| If NO? Bubble size (mm): | | | | |
| Sample ID:____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| #21. Trip blank received where volatiles requested? | Yes | No | N/A | |

Nonconformance Documentation

Customer:____ Contacted by:____ Date/Time:____

Regarding: ____

Corrective Action: ____

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

Document Control # 468 Revision 0 07/25/14

16A0398

# FPL Central Lab
## List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative |
|---|---|---|---|
| I-005 Steam Generator Blowdown | Clear Glass | 500mL | ICE |
| | Amber Glass | 1L | ICE |
| | | | |
| | P | 250mL | $HNO_3$ |
| | | | $H_2SO_4$ |
| | | | $HNO_3$ |
| | | 500mL | $HNO_3$ |
| | | 1000mL | ICE |
| | | 500mL | ICE |
| | Glass vial | 40mL | $H_2SO_4$ |
| | | | |
| SGB Grab-1 | Glass vial | 40mL | HCl |
| | | | $H_3PO_4 + CuSO_4$ |
| | | | NaOH |
| | Amber Glass | 1L | $H_2SO_4$ |
| SGB Grab-2 | ~~Amber Glass~~ 30 | | |
| SGB Grab-3 | | | |
| SGB Grab-4 | | | |
| | | | |
| | | | |

LABORATORY RESULTS – OUTFALL I-008

(FORM 2CS)

# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental - E87671** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| Phenolics | U | | | 0.0170 | 0.0510 | mg/L | 1 | 1512524 | 1/4/2016 15:40 | SUB | 1/6/2016 15:40 | EPA 420.1 | |
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **BNA Extractables** | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | U | | | 1.27 | 3.81 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 1,2-Dichlorobenzene | U | | | 1.02 | 3.06 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 1,2-Diphenylhydrazine as Azobenzene | U | | | 0.660 | 1.98 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 1,3-Dichlorobenzene | U | | | 1.24 | 3.72 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |

Serial #: 01082016131729

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **BNA Extractables** | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | U | | | 1.18 | 3.54 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2,4,5-Trichlorophenol | U | | | 0.680 | 2.04 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2,4-Dichlorophenol | U | | | 0.630 | 1.89 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2,4-Dimethylphenol | U | | | 0.490 | 1.47 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2,4-Dinitrophenol | U | | | 0.160 | 0.480 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2,4-Dinitrotoluene | U | | | 0.300 | 0.900 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2,6-Dinitrotoluene | U | | | 0.520 | 1.56 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2-Chloronaphthalene | U | | | 0.550 | 1.65 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2-Chlorophenol | U | | | 0.890 | 2.67 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 2-Nitrophenol | U | | | 0.880 | 2.64 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 3,3'-Dichlorobenzidine | U | | | 0.310 | 0.930 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 4,6-Dinitro-2-methylphenol | U | | | 0.270 | 0.810 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |

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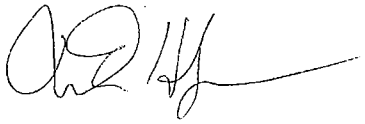

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

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01/08/2016 13:17

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| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **BNA Extractables** | | | | | | | | | | | | | |
| 4-Chloro-3-methylphenol | U | | | 0.930 | 2.79 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 4-Chlorophenyl phenyl ether | U | | | 0.580 | 1.74 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| 4-Nitrophenol | U | | | 0.700 | 2.10 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Acenaphthene | U | | | 0.490 | 1.47 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Acenaphthylene | U | | | 0.640 | 1.92 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Anthracene | U | | | 0.500 | 1.50 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Benzidine | U | | | 0.260 | 0.780 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Benzo (a) anthracene | U | | | 0.180 | 0.540 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Benzo (a) pyrene | U | | | 0.280 | 0.840 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Benzo (b) fluoranthene | U | | | 0.260 | 0.780 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Benzo (g,h,i) perylene | U | | | 0.210 | 0.630 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Benzo (k) fluoranthene | U | | | 0.480 | 1.44 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

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01/08/2016 13:17

**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BNA Extractables** | | | | | | | | | | | | | |
| Bis(2-chloroethoxy)methane | U | | | 0.580 | 1.74 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Bis(2-chloroethyl)ether | U | | | 0.820 | 2.46 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Bis(2-chloroisopropyl)ether | U | | | 0.970 | 2.91 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Bis(2-ethylhexyl)phthalate | U | | | 1.32 | 3.96 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Chrysene | U | | | 0.300 | 0.900 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Dibenz (a,h) anthracene | U | | | 0.160 | 0.580 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Diethyl phthalate | U | | | 0.200 | 0.600 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Dimethyl phthalate | U | | | 0.290 | 0.870 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Di-n-butyl phthalate | U | | | 0.240 | 0.720 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Di-n-octyl phthalate | U | | | 0.170 | 0.510 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Fluoranthene | U | | | 0.280 | 0.840 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Fluorene | U | | | 0.520 | 1.56 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |

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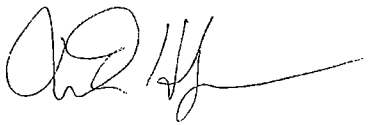

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| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **BNA Extractables** | | | | | | | | | | | | | |
| Hexachlorobenzene | U | | | 0.520 | 1.56 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Hexachlorobutadiene | U | | | 0.530 | 1.59 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Hexachlorocyclopentadiene | U | | | 0.690 | 2.07 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Hexachloroethane | U | | | 0.810 | 2.43 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Indeno (1,2,3-cd) pyrene | U | | | 0.150 | 0.450 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Isophorone | U | | | 0.680 | 2.04 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Naphthalene | U | | | 0.700 | 2.10 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Nitrobenzene | U | | | 0.770 | 2.31 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| N-Nitrosodimethylamine | U | | | 1.11 | 3.33 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| N-Nitrosodi-n-propylamine | U | | | 1.10 | 3.30 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| N-Nitrosodiphenylamine | U | | | 0.380 | 1.14 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Pentachlorophenol | U | | | 0.320 | 0.960 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |

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**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **BNA Extractables** | | | | | | | | | | | | | |
| Phenanthrene | U | | | 0.450 | 1.35 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Phenol | U | | | 0.580 | 1.74 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| Pyrene | U | | | 0.220 | 0.660 | ug/L | 1 | 1512487 | 12/17/2015 9:19 | JR | 12/17/2015 23:52 | EPA 625 | |
| *Surrogate: 2,4,6-Tribromophenol* | | | | | *52.6 %* | | *50-150* | *1512487* | *12/17/2015 9:19* | | *12/17/2015 23:52* | *EPA 625* | |
| *Surrogate: 2-Fluorobiphenyl* | | | | | *57.2 %* | | *50-150* | *1512487* | *12/17/2015 9:19* | | *12/17/2015 23:52* | *EPA 625* | |
| *Surrogate: 2-Fluorophenol* | | | | | *32.6 %* | | *30-110* | *1512487* | *12/17/2015 9:19* | | *12/17/2015 23:52* | *EPA 625* | |
| *Surrogate: Nitrobenzene-d5* | | | | | *44.9 %* | | *50-150* | *1512487* | *12/17/2015 9:19* | | *12/17/2015 23:52* | *EPA 625* | |
| *Surrogate: Phenol-d6* | | | | | *24.1 %* | | *30-110* | *1512487* | *12/17/2015 9:19* | | *12/17/2015 23:52* | *EPA 625* | |
| *Surrogate: p-Terphenyl* | | | | | *79.5 %* | | *50-150* | *1512487* | *12/17/2015 9:19* | | *12/17/2015 23:52* | *EPA 625* | |
| **Gross Alpha Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Alpha** | **7.48±2.27** | I | | 7.48 | 22.4 | pCi/L | 1 | 1512648 | 12/17/2015 12:00 | IN | 12/22/2015 16:07 | EPA 900.0 | |
| **Gross Beta Activity by EPA 900** | | | | | | | | | | | | | |

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Attn: Chrissi-lee Williams

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| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Gross Beta Activity by EPA 900** | | | | | | | | | | | | | |
| **Gross Beta** | **9.02±2.23** | I | | 7.21 | 21.6 | pCi/L | 1 | 1512648 | 12/17/2015 12:00 | IN | 12/22/2015 12:34 | EPA 900.0 | |
| **Microbiology** | | | | | | | | | | | | | |
| Carbonaceous BOD | U | | | 2.00 | 6.00 | mg/L | 1 | 1512589 | 12/15/2015 16:00 | SC | 12/20/2015 16:00 | CBOD SM5210B | |
| **Total Metals** | | | | | | | | | | | | | |
| Antimony | U | | | 0.003 | 0.008 | mg/L | 1 | 1512391 | 12/15/2015 9:00 | MAZ | 12/15/2015 11:13 | EPA 200.7 | |
| **Boron** | **0.244** | | | 0.004 | 0.011 | mg/L | 1 | 1512391 | 12/15/2015 9:00 | MAZ | 12/15/2015 11:13 | EPA 200.7 | |
| **Molybdenum** | **0.035** | | | 0.004 | 0.013 | mg/L | 1 | 1512391 | 12/15/2015 9:00 | MAZ | 12/15/2015 11:13 | EPA 200.7 | |
| Tin | U | | | 0.008 | 0.024 | mg/L | 1 | 1512418 | 12/15/2015 10:00 | ZZZ | 12/15/2015 19:44 | EPA 200.7 | |
| Titanium | U | | | 0.0006 | 0.0018 | mg/L | 1 | 1512391 | 12/15/2015 9:00 | MAZ | 12/15/2015 11:13 | EPA 200.7 | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | U | | | 0.0380 | 0.113 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | U | | | 0.0690 | 0.207 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| 1,1,2-Trichloroethane | U | | | 0.0750 | 0.226 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| 1,1-Dichloroethane | U | | | 0.204 | 0.612 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| 1,1-Dichloroethene | U | | | 0.0590 | 0.176 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| 1,2-Dichloroethane | U | | | 0.0360 | 0.109 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| 1,2-Dichloropropane | U | | | 0.0450 | 0.136 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| 2-Chloroethylvinyl ether | U | | | 0.745 | 2.24 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Acrolein | U | | | 0.303 | 0.909 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Acrylonitrile | U | | | 0.160 | 0.479 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Benzene | U | | | 0.0300 | 0.0900 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Bromodichloromethane | U | | | 0.0860 | 0.258 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Bromoform | U | | | 0.138 | 0.414 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |

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FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

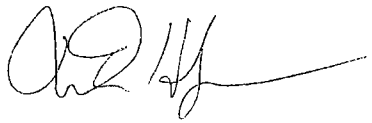
**Reported:**
01/08/2016 13:17

**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Bromomethane | U | | | 0.132 | 0.397 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Carbon Tetrachloride | U | | | 0.0520 | 0.156 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Chlorobenzene | U | | | 0.0790 | 0.237 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Chloroethane | U | | | 0.308 | 0.924 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Chloroform | U | | | 0.0770 | 0.232 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Chloromethane | U | | | 0.0480 | 0.144 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| cis-1,3-Dichloropropene | U | | | 0.0500 | 0.151 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Dibromochloromethane | U | | | 0.0660 | 0.199 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Dichlorodifluoromethane | U | J-2 | | 0.0940 | 0.283 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Ethyl Benzene | U | | | 0.0840 | 0.252 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Methylene Chloride | U | | | 0.751 | 2.25 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Tetrachloroethene | U | | | 0.0840 | 0.253 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |

Serial #: 01082016131729

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

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01/08/2016 13:17

**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Toluene | U | | | 0.0350 | 0.104 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| trans-1,2-Dichloroethene | U | | | 0.107 | 0.320 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| trans-1,3-Dichloropropene | U | | | 0.250 | 0.751 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Trichloroethene | U | | | 0.0500 | 0.151 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Trichlorofluoromethane | U | | | 0.0700 | 0.211 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| Vinyl chloride | U | | | 0.0840 | 0.253 | ug/L | 1 | 1512503 | 12/16/2015 16:00 | BBL | 12/17/2015 9:10 | EPA 624 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | | | *62.0 %* | | *50-110* | *1512503* | *12/16/2015 16:00* | | *12/17/2015 9:10* | *EPA 624* | |
| *Surrogate: 2-Bromo-1-chloropropane* | | | | | *75.4 %* | | *74-110* | *1512503* | *12/16/2015 16:00* | | *12/17/2015 9:10* | *EPA 624* | |
| *Surrogate: 4-Bromofluorobenzene* | | | | | *74.8 %* | | *46-125* | *1512503* | *12/16/2015 16:00* | | *12/17/2015 9:10* | *EPA 624* | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Color** | **25/7.26** | | | 1.00 | 3.00 | Pt-Co | 1 | 1512395 | 12/15/2015 11:00 | NL | 12/15/2015 11:00 | SM 2120B | |
| Cyanide (total) | U | | | 0.00230 | 0.00690 | mg/L | 1 | 1512611 | 12/21/2015 16:00 | SA | 12/21/2015 16:45 | EPA 335.4 | |

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

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01/08/2016 13:17

**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **MBAS as LAS, mol wt. 340** | **0.0680** | I | | 0.0603 | 0.181 | mg/L | 1 | 1512467 | 12/16/2015 9:30 | DGK | 12/16/2015 9:30 | SM5540C | |
| **Total Organic Carbon** | **7.69** | | | 0.168 | 0.504 | mg/L | 1 | 1512547 | 12/18/2015 12:49 | SA | 12/18/2015 15:20 | TOC SM 5310C | |
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Ammonia as N** | **0.230** | V | J | 0.0100 | 0.0400 | mg/L | 1 | F15L436 | 12/29/2015 7:40 | CMS | 12/29/2015 14:23 | EPA 350.1 | NELAC |
| **Bromide** | **2.3** | | O | 0.0075 | 0.030 | mg/L | 1 | F15L213 | 12/15/2015 3:06 | MV | 12/15/2015 3:06 | EPA 300.0 | NELAC |

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
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**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
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**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Chemical Oxygen Demand** | **30** | J1 | J | 3.1 | 12 | mg/L | 1 | F15L500 | 12/31/2015 8:51 | CMS | 12/31/2015 13:21 | SM5220D | NELAC |
| **Fluoride** | **0.68** | | O | 0.010 | 0.042 | mg/L | 1 | F15L213 | 12/15/2015 3:06 | MV | 12/15/2015 3:06 | EPA 300.0 | NELAC |
| **Nitrate as N** | **0.36** | | O | 0.0039 | 0.016 | mg/L | 1 | F15L213 | 12/15/2015 3:06 | MV | 12/15/2015 3:06 | EPA 300.0 | NELAC |
| Nitrite as N | U | | O | 0.0081 | 0.032 | mg/L | 1 | F15L213 | 12/15/2015 3:06 | MV | 12/15/2015 3:06 | EPA 300.0 | NELAC |
| Oil & Grease (HEM) | U | | F | 1.0 | 4.1 | mg/L | 1 | F15L481 | 12/30/2015 10:00 | CMS | 12/30/2015 10:00 | EPA 1664A | NELAC |
| **Phosphorus-Total** | **0.31** | V | J | 0.0034 | 0.025 | mg/L | 1 | F15L303 | 12/18/2015 10:32 | MV | 12/18/2015 10:32 | SM4500-P F | NELAC |
| **Specific conductance** | **3100** | | O | 1.0 | 1.0 | umhos/cm | 1 | F15L488 | 12/30/2015 13:12 | CMS | 12/30/2015 13:12 | EPA 120.1 | NELAC |
| **Sulfate** | **140** | | O | 0.016 | 0.062 | mg/L | 1 | F15L213 | 12/15/2015 3:06 | MV | 12/15/2015 3:06 | EPA 300.0 | NELAC |
| **Total Kjeldahl Nitrogen** | **0.88** | | J | 0.18 | 0.75 | mg/L | 1 | F15L400 | 12/28/2015 7:55 | CMS | 12/29/2015 11:50 | EPA 351.2 | NELAC |
| **Total Nitrogen** | **1.2** | | O | 0.050 | 0.050 | mg/L | 1 | F15L502 | 12/31/2015 12:34 | CMS | 12/31/2015 12:34 | Calc. | NELAC |
| **Total Organic Nitrogen** | **0.65** | | O | 0.050 | 0.050 | mg/L | 1 | F15L502 | 12/31/2015 12:34 | CMS | 12/31/2015 12:34 | Calc. | NELAC |
| **Total Suspended Solids** | **4.0** | I | O | 3.0 | 12 | mg/L | 1 | F15L306 | 12/17/2015 13:00 | CMS | 12/17/2015 13:00 | SM2540 D | NELAC |

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Jensen Beach FL, 34957

NELAC Certification #: E56078

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01/08/2016 13:17

Attn: Chrissi-lee Williams

**Client Sample ID: I-008 EP1- SE**
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**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Metals (Total)** | | | | | | | | | | | | | |
| Arsenic | U | | K | 3.6 | 10 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| Beryllium | U | | K | 0.11 | 1.0 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| **Cadmium** | **0.20** | I | K | 0.10 | 1.0 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| Chromium | U | | K | 0.19 | 1.0 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| **Copper** | **1.9** | I | K | 0.40 | 2.0 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| **Iron** | **31** | | K | 2.7 | 10 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| Lead | U | | K | 1.6 | 5.0 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| **Magnesium** | **49** | | K | 0.028 | 0.10 | mg/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| Nickel | U | | K | 0.58 | 2.0 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| Selenium | U | | K | 3.7 | 10 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| Silver | U | | K | 0.82 | 5.0 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| Thallium | U | | K | 1.5 | 10 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |

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**Client Sample ID (cont):**
**Sampled: 12/14/2015 10:30:00AM Received: 12/14/2015 4:15:00PM**
**Lab Sample #: 15L0179-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Metals (Total)** | | | | | | | | | | | | | |
| **Zinc** | **4.8** | I | K | 0.39 | 10 | ug/L | 1 | F15L401 | 12/28/2015 8:16 | MV | 12/30/2015 11:29 | EPA 200.7 | NELAC |
| **Analyzed at: Jupiter Environmental TNI Cert #: E86546** | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| **Mercury** | **0.00169** | | | 0.000250 | 0.00100 | ug/L | 1 | 1512524-ME | 1/6/2016 8:49 | SUB | 1/6/2016 10:30 | EPA 1631E | |

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01/08/2016 13:17

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L213 - EPA 300.0** | | | | | | | | | | | |
| **Blank (F15L213-BLK1)** | | | Prepared & Analyzed: 12/14/2015 | | | | | | | | |
| Bromide | U | | 0.0075 | 0.030 | mg/L | | | | | | |
| Fluoride | U | | 0.010 | 0.042 | mg/L | | | | | | |
| Nitrate as N | U | | 0.0039 | 0.016 | mg/L | | | | | | |
| Nitrite as N | U | | 0.0081 | 0.032 | mg/L | | | | | | |
| Sulfate | U | | 0.016 | 0.062 | mg/L | | | | | | |
| **LCS (F15L213-BS1)** | | | Prepared & Analyzed: 12/14/2015 | | | | | | | | |
| Bromide | 5.09 | | | | mg/L | 4.995 | | 102 | 90-110 | | |
| Fluoride | 5.22 | | | | mg/L | 5.005 | | 104 | 90-110 | | |
| Nitrate as N | 5.27 | | | | mg/L | 5.000 | | 105 | 90-110 | | |
| Nitrite as N | 5.18 | | | | mg/L | 5.000 | | 104 | 90-110 | | |
| Sulfate | 24.7 | | | | mg/L | 25.20 | | 98 | 90-110 | | |
| **LCS Dup (F15L213-BSD1)** | | | Prepared & Analyzed: 12/14/2015 | | | | | | | | |
| Bromide | 5.03 | | | | mg/L | 4.995 | | 101 | 90-110 | 1 | 20 |
| Fluoride | 5.22 | | | | mg/L | 5.005 | | 104 | 90-110 | 0.1 | 20 |
| Nitrate as N | 5.21 | | | | mg/L | 5.000 | | 104 | 90-110 | 1 | 20 |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L213 - EPA 300.0** | | | | | | | | | | | |
| **LCS Dup (F15L213-BSD1)** | | | Prepared & Analyzed: 12/14/2015 | | | | | | | | |
| Nitrite as N | 5.09 | | | | mg/L | 5.000 | | 102 | 90-110 | 2 | 20 |
| Sulfate | 24.7 | | | | mg/L | 25.20 | | 98 | 90-110 | 0.04 | 20 |
| **Matrix Spike (F15L213-MS1)** | **Source: 15L0136-01** | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Bromide | 2.21 | J1, | | | mg/L | 2.498 | U | 89 | 90-110 | | |
| Fluoride | 2.47 | | | | mg/L | 2.502 | 0.0605 | 96 | 90-110 | | |
| Nitrate as N | 3.15 | | | | mg/L | 2.500 | 0.716 | 97 | 90-110 | | |
| Nitrite as N | 60.2 | J2, | | | mg/L | 2.500 | 54.6 | 225 | 90-110 | | |
| Sulfate | 12.3 | | | | mg/L | 12.60 | 0.150 | 97 | 90-110 | | |
| **Matrix Spike (F15L213-MS2)** | **Source: 15L0163-02** | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Bromide | 2.30 | | | | mg/L | 2.498 | 0.0480 | 90 | 90-110 | | |
| Fluoride | 2.52 | | | | mg/L | 2.502 | 0.0250 | 100 | 90-110 | | |
| Nitrate as N | 6.82 | | | | mg/L | 2.500 | 4.21 | 104 | 90-110 | | |
| Nitrite as N | 2.47 | | | | mg/L | 2.500 | 0.0820 | 96 | 90-110 | | |
| Sulfate | 14.4 | | | | mg/L | 12.60 | 1.87 | 99 | 90-110 | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L213 - EPA 300.0** | | | | | | | | | | | |
| **Matrix Spike Dup (F15L213-MSD1)** | **Source: 15L0136-01** | | Prepared & Analyzed: 12/14/2015 | | | | | | | | |
| Bromide | 2.23 | J1, | | | mg/L | 2.498 | U | 89 | 90-110 | 0.9 | 20 |
| Fluoride | 2.48 | | | | mg/L | 2.502 | 0.0605 | 97 | 90-110 | 0.4 | 20 |
| Nitrate as N | 3.18 | | | | mg/L | 2.500 | 0.716 | 99 | 90-110 | 0.9 | 20 |
| Nitrite as N | 60.5 | J2, | | | mg/L | 2.500 | 54.6 | 235 | 90-110 | 0.4 | 20 |
| Sulfate | 12.3 | | | | mg/L | 12.60 | 0.150 | 96 | 90-110 | 0.5 | 20 |
| **Batch F15L303 - SM4500-P F** | | | | | | | | | | | |
| **Blank (F15L303-BLK1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.00600 | I | 0.0034 | 0.025 | mg/L | | | | | | |
| **LCS (F15L303-BS1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.250 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 101 | 90-110 | | |
| **LCS (F15L303-BS2)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.255 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 103 | 90-110 | | |
| **LCS (F15L303-BS3)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L303 - SM4500-P F** | | | | | | | | | | | |
| **LCS (F15L303-BS3)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.254 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 102 | 90-110 | | |
| **LCS (F15L303-BS4)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.248 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 100 | 90-110 | | |
| **LCS (F15L303-BS5)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.253 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 102 | 90-110 | | |
| **LCS Dup (F15L303-BSD1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.254 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 102 | 90-110 | 2 | 20 |
| **Matrix Spike (F15L303-MS1)** | | **Source: 15L0341-05** | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.274 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.0230 | 101 | 90-110 | | |
| **Matrix Spike Dup (F15L303-MSD1)** | | **Source: 15L0341-05** | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Phosphorus-Total | 0.273 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.0230 | 101 | 90-110 | 0.4 | 20 |
| **Batch F15L306 - SM2540 D** | | | | | | | | | | | |

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**Reported:**
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Attn: Chrissi-lee Williams

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L306 - SM2540 D** | | | | | | | | | | | |
| **Blank (F15L306-BLK1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Total Suspended Solids | U | | 3.0 | 12 | mg/L | | | | | | |
| **LCS (F15L306-BS1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Total Suspended Solids | 50.0 | | | | mg/L | 54.00 | | 93 | 80-120 | | |
| **LCS Dup (F15L306-BSD1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Total Suspended Solids | 49.0 | | | | mg/L | 54.00 | | 91 | 80-120 | 2 | 20 |
| **Duplicate (F15L306-DUP1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Total Suspended Solids | 4.00 | I | 3.0 | 12 | mg/L | | 4.00 | | | 0 | 5 |
| **Batch F15L400 - EPA 351.2** | | | | | | | | | | | |
| **Blank (F15L400-BLK1)** | | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | U | | 0.18 | 0.75 | mg/L | | | | | | |
| **LCS (F15L400-BS1)** | | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | 1.98 | | 0.18 | 0.75 | mg/L | 1.998 | | 99 | 90-110 | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L400 - EPA 351.2** | | | | | | | | | | | |
| **Matrix Spike (F15L400-MS1)** | **Source: 15L0179-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | 3.03 | | 0.18 | 0.75 | mg/L | 1.998 | 0.883 | 107 | 90-110 | | |
| **Matrix Spike Dup (F15L400-MSD1)** | **Source: 15L0179-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | 2.95 | | 0.18 | 0.75 | mg/L | 1.998 | 0.883 | 103 | 90-110 | 3 | 20 |
| **Batch F15L436 - EPA 350.1** | | | | | | | | | | | |
| **Blank (F15L436-BLK1)** | | | Prepared & Analyzed: 12/29/2015 | | | | | | | | |
| Ammonia as N | 0.0110 | I | 0.0100 | 0.0400 | mg/L | | | | | | |
| **LCS (F15L436-BS1)** | | | Prepared & Analyzed: 12/29/2015 | | | | | | | | |
| Ammonia as N | 1.03 | | 0.0100 | 0.0400 | mg/L | 0.9990 | | 104 | 90-110 | | |
| **Duplicate (F15L436-DUP1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/29/2015 | | | | | | | | |
| Ammonia as N | 0.230 | | 0.0100 | 0.0400 | mg/L | | 0.230 | | | 0.1 | 20 |
| **Matrix Spike (F15L436-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/29/2015 | | | | | | | | |
| Ammonia as N | 1.22 | | 0.0100 | 0.0400 | mg/L | 0.9990 | 0.230 | 99 | 90-110 | | |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L481 - EPA 1664A** | | | | | | | | | | | |
| **Blank (F15L481-BLK1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Oil & Grease (HEM) | U | | 1.0 | 4.1 | mg/L | | | | | | |
| **LCS (F15L481-BS1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Oil & Grease (HEM) | 75.8 | | | | mg/L | 74.60 | | 102 | 78-114 | | |
| **LCS Dup (F15L481-BSD1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Oil & Grease (HEM) | 78.2 | | | | mg/L | 74.60 | | 105 | 78-114 | 3 | 18 |
| **Batch F15L488 - EPA 120.1** | | | | | | | | | | | |
| **Blank (F15L488-BLK1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Specific conductance | U | | 1.0 | 1.0 | umhos/cm | | | | | | |
| **LCS (F15L488-BS1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Specific conductance | 235 | | | | umhos/cm | 234.0 | | 100 | 80-120 | | |
| **LCS Dup (F15L488-BSD1)** | | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Specific conductance | 236 | | | | umhos/cm | 234.0 | | 101 | 80-120 | 0.4 | 20 |

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## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L488 - EPA 120.1** | | | | | | | | | | | |
| **Duplicate (F15L488-DUP1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/30/2015 | | | | | | | | |
| Specific conductance | 3070 | | 1.0 | 1.0 | umhos/cm | | 3060 | | | 0.3 | 20 |
| **Batch F15L500 - SM5220D** | | | | | | | | | | | |
| **Blank (F15L500-BLK1)** | | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | U | | 3.1 | 12 | mg/L | | | | | | |
| **LCS (F15L500-BS1)** | | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | 40.8 | | | | mg/L | 39.60 | | 103 | 95-105 | | |
| **Matrix Spike (F15L500-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | 35.5 | | | | mg/L | 19.80 | 15.0 | 104 | 95-105 | | |
| **Matrix Spike Dup (F15L500-MSD1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | 32.9 | J1, | | | mg/L | 19.80 | 15.0 | 91 | 95-105 | 8 | 20 |

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## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L401 - EPA 200.7** | | | | | | | | | | | |
| **Blank (F15L401-BLK1)** | | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Arsenic | U | | 3.6 | 10 | ug/L | | | | | | |
| Beryllium | U | | 0.11 | 1.0 | ug/L | | | | | | |
| Cadmium | U | | 0.10 | 1.0 | ug/L | | | | | | |
| Chromium | U | | 0.19 | 1.0 | ug/L | | | | | | |
| Copper | U | | 0.40 | 2.0 | ug/L | | | | | | |
| Iron | U | | 2.7 | 10 | ug/L | | | | | | |
| Lead | U | | 1.6 | 5.0 | ug/L | | | | | | |
| Magnesium | U | | 0.028 | 0.10 | mg/L | | | | | | |
| Nickel | U | | 0.58 | 2.0 | ug/L | | | | | | |
| Selenium | U | | 3.7 | 10 | ug/L | | | | | | |
| Silver | U | | 0.82 | 5.0 | ug/L | | | | | | |
| Thallium | U | | 1.5 | 10 | ug/L | | | | | | |
| Zinc | U | | 0.39 | 10 | ug/L | | | | | | |
| **LCS (F15L401-BS1)** | | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Arsenic | 98.3 | | 3.6 | 10 | ug/L | 100.0 | | 98 | 85-115 | | |

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| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L401 - EPA 200.7** | | | | | | | | | | | |
| **LCS (F15L401-BS1)** | | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Beryllium | 103 | | 0.11 | 1.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Cadmium | 103 | | 0.10 | 1.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Chromium | 103 | | 0.19 | 1.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Copper | 105 | | 0.40 | 2.0 | ug/L | 100.0 | | 105 | 85-115 | | |
| Iron | 1040 | | 2.7 | 10 | ug/L | 1000 | | 104 | 85-115 | | |
| Lead | 103 | | 1.6 | 5.0 | ug/L | 100.0 | | 103 | 85-115 | | |
| Magnesium | 1.03 | | 0.028 | 0.10 | mg/L | 1.000 | | 103 | 85-115 | | |
| Nickel | 104 | | 0.58 | 2.0 | ug/L | 100.0 | | 104 | 85-115 | | |
| Selenium | 97.4 | | 3.7 | 10 | ug/L | 100.0 | | 97 | 85-115 | | |
| Silver | 102 | | 0.82 | 5.0 | ug/L | 100.0 | | 102 | 85-115 | | |
| Thallium | 102 | | 1.5 | 10 | ug/L | 100.0 | | 102 | 85-115 | | |
| Zinc | 105 | | 0.39 | 10 | ug/L | 100.0 | | 105 | 85-115 | | |
| **Matrix Spike (F15L401-MS1)** | **Source: 15L0338-01** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Arsenic | 105 | | 3.6 | 10 | ug/L | 100.0 | U | 105 | 70-130 | | |
| Beryllium | 102 | | 0.11 | 1.0 | ug/L | 100.0 | 0.169 | 102 | 70-130 | | |

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| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L401 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (F15L401-MS1)** | **Source: 15L0338-01** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Cadmium | 101 | | 0.10 | 1.0 | ug/L | 100.0 | 0.172 | 101 | 70-130 | | |
| Chromium | 103 | | 0.19 | 1.0 | ug/L | 100.0 | 0.292 | 102 | 70-130 | | |
| Copper | 107 | | 0.40 | 2.0 | ug/L | 100.0 | 2.41 | 104 | 70-130 | | |
| Iron | 1070 | | 2.7 | 10 | ug/L | 1000 | 54.0 | 102 | 70-130 | | |
| Lead | 103 | | 1.6 | 5.0 | ug/L | 100.0 | U | 103 | 70-130 | | |
| Magnesium | 29.6 | | 0.028 | 0.10 | mg/L | 1.000 | 28.8 | 74 | 70-130 | | |
| Nickel | 130 | | 0.58 | 2.0 | ug/L | 100.0 | 28.1 | 102 | 70-130 | | |
| Selenium | 98.3 | | 3.7 | 10 | ug/L | 100.0 | U | 98 | 70-130 | | |
| Silver | 103 | | 0.82 | 5.0 | ug/L | 100.0 | 2.28 | 101 | 70-130 | | |
| Thallium | 105 | | 1.5 | 10 | ug/L | 100.0 | U | 105 | 70-130 | | |
| Zinc | 114 | | 0.39 | 10 | ug/L | 100.0 | 11.8 | 102 | 70-130 | | |
| **Matrix Spike (F15L401-MS2)** | **Source: 15L0338-02** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Arsenic | 85.0 | I | 72 | 200 | ug/L | 100.0 | U | 85 | 70-130 | | |
| Beryllium | 108 | | 2.2 | 20 | ug/L | 100.0 | U | 108 | 70-130 | | |
| Cadmium | 102 | | 2.0 | 20 | ug/L | 100.0 | 0.190 | 102 | 70-130 | | |

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## Metals (Total) - Quality Control

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| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L401 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike (F15L401-MS2)** | **Source: 15L0338-02** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Chromium | 101 | | 3.9 | 20 | ug/L | 100.0 | U | 101 | 70-130 | | |
| Copper | 123 | | 8.0 | 40 | ug/L | 100.0 | 1.19 | 123 | 70-130 | | |
| Iron | 1190 | | 53 | 200 | ug/L | 1000 | 7.80 | 119 | 70-130 | | |
| Lead | 129 | | 31 | 100 | ug/L | 100.0 | U | 129 | 70-130 | | |
| Magnesium | 1140 | J2, | 0.55 | 2.0 | mg/L | 1.000 | 55.9 | NR | 70-130 | | |
| Nickel | 83.2 | | 12 | 40 | ug/L | 100.0 | U | 83 | 70-130 | | |
| Selenium | U | J1 | 75 | 200 | ug/L | 100.0 | U | | 70-130 | | |
| Silver | 102 | | 16 | 100 | ug/L | 100.0 | U | 102 | 70-130 | | |
| Thallium | 89.5 | I | 31 | 200 | ug/L | 100.0 | 2.78 | 90 | 70-130 | | |
| Zinc | 148 | I | 7.8 | 200 | ug/L | 100.0 | 45.1 | 103 | 70-130 | | |
| **Matrix Spike Dup (F15L401-MSD1)** | **Source: 15L0338-01** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Arsenic | 105 | | 3.6 | 10 | ug/L | 100.0 | U | 105 | 70-130 | 0.1 | 20 |
| Beryllium | 103 | | 0.11 | 1.0 | ug/L | 100.0 | 0.169 | 103 | 70-130 | 0.6 | 20 |
| Cadmium | 102 | | 0.10 | 1.0 | ug/L | 100.0 | 0.172 | 102 | 70-130 | 0.8 | 20 |
| Chromium | 103 | | 0.19 | 1.0 | ug/L | 100.0 | 0.292 | 103 | 70-130 | 0.7 | 20 |

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## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L401 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (F15L401-MSD1)** | **Source: 15L0338-01** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Copper | 108 | | 0.40 | 2.0 | ug/L | 100.0 | 2.41 | 106 | 70-130 | 1 | 20 |
| Iron | 1070 | | 2.7 | 10 | ug/L | 1000 | 54.0 | 102 | 70-130 | 0.02 | 20 |
| Lead | 105 | | 1.6 | 5.0 | ug/L | 100.0 | U | 105 | 70-130 | 2 | 20 |
| Magnesium | 28.9 | J2, | 0.028 | 0.10 | mg/L | 1.000 | 28.8 | 6 | 70-130 | 2 | 20 |
| Nickel | 131 | | 0.58 | 2.0 | ug/L | 100.0 | 28.1 | 103 | 70-130 | 0.7 | 20 |
| Selenium | 99.7 | | 3.7 | 10 | ug/L | 100.0 | U | 100 | 70-130 | 1 | 20 |
| Silver | 105 | | 0.82 | 5.0 | ug/L | 100.0 | 2.28 | 102 | 70-130 | 2 | 20 |
| Thallium | 106 | | 1.5 | 10 | ug/L | 100.0 | U | 106 | 70-130 | 0.8 | 20 |
| Zinc | 114 | | 0.39 | 10 | ug/L | 100.0 | 11.8 | 103 | 70-130 | 0.5 | 20 |
| **Post Spike (F15L401-PS1)** | **Source: 15L0338-01** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Arsenic | 99.6 | | 3.6 | 10 | ug/L | 100.0 | U | 100 | 90-110 | | |
| Beryllium | 102 | | 0.11 | 1.0 | ug/L | 100.0 | 0.169 | 101 | 90-110 | | |
| Cadmium | 102 | | 0.10 | 1.0 | ug/L | 100.0 | 0.172 | 101 | 90-110 | | |
| Chromium | 102 | | 0.19 | 1.0 | ug/L | 100.0 | 0.292 | 102 | 90-110 | | |
| Copper | 106 | | 0.40 | 2.0 | ug/L | 100.0 | 2.41 | 104 | 90-110 | | |

Serial #: 01082016131729

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## Metals (Total) - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L401 - EPA 200.7** | | | | | | | | | | | |
| **Post Spike (F15L401-PS1)** | **Source: 15L0338-01** | | Prepared: 12/28/2015 Analyzed: 12/30/2015 | | | | | | | | |
| Iron | 1050 | | 2.7 | 10 | ug/L | 1000 | 54.0 | 100 | 90-110 | | |
| Lead | 103 | | 1.6 | 5.0 | ug/L | 100.0 | U | 103 | 90-110 | | |
| Magnesium | 29.0 | | 0.028 | 0.10 | mg/L | 1.000 | 28.8 | 13 | 90-110 | | |
| Nickel | 130 | | 0.58 | 2.0 | ug/L | 100.0 | 28.1 | 102 | 90-110 | | |
| Selenium | 104 | | 3.7 | 10 | ug/L | 100.0 | U | 104 | 90-110 | | |
| Silver | 103 | | 0.82 | 5.0 | ug/L | 100.0 | 2.28 | 100 | 90-110 | | |
| Thallium | 106 | | 1.5 | 10 | ug/L | 100.0 | U | 106 | 90-110 | | |
| Zinc | 115 | | 0.39 | 10 | ug/L | 100.0 | 11.8 | 104 | 90-110 | | |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental - E87671**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512524 - EPA 420.1** | | | | | | | | | | | |
| **Blank (1512524-BLK1)** | | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | U | | 0.00230 | 0.00690 | mg/L | | | | - | | |
| **LCS (1512524-BS1)** | | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | 0.105 | | 0.00230 | 0.00690 | mg/L | 0.1 | | 105 | 90-110 | | |
| **Matrix Spike (1512524-MS1)** | **Source: 15L0646-01** | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | 1.01 | | 0.00230 | 0.00690 | mg/L | 1 | 0.00350 | 101 | 70-130 | | |
| **Matrix Spike Duplicate (1512524-MSD1)** | **Source: 15L0646-01** | | Prepared: 01/04/2016 Analyzed: 01/06/2016 | | | | | | | | |
| Phenolics | 1 | | 0.00230 | 0.00690 | mg/L | | 0.00350 | 100 | 70-130 | 1 | 30 |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Blank (1512487-BLK1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | | 1.27 | 3.81 | ug/L | | | | - | | |
| 1,2-Dichlorobenzene | ND | | 1.02 | 3.06 | ug/L | | | | - | | |
| 1,2-Diphenylhydrazine as Azobenzene | ND | | 0.660 | 1.98 | ug/L | | | | - | | |
| 1,3-Dichlorobenzene | ND | | 1.24 | 3.72 | ug/L | | | | - | | |
| 1,4-Dichlorobenzene | ND | | 1.18 | 3.54 | ug/L | | | | - | | |
| 2,4,5-Trichlorophenol | ND | | 0.680 | 2.04 | ug/L | | | | - | | |
| 2,4-Dichlorophenol | ND | | 0.630 | 1.89 | ug/L | | | | - | | |
| 2,4-Dimethylphenol | ND | | 0.490 | 1.47 | ug/L | | | | - | | |
| 2,4-Dinitrophenol | ND | | 0.160 | 0.480 | ug/L | | | | - | | |
| 2,4-Dinitrotoluene | ND | | 0.300 | 0.900 | ug/L | | | | - | | |
| 2,6-Dinitrotoluene | ND | | 0.520 | 1.56 | ug/L | | | | - | | |
| 2-Chloronaphthalene | ND | | 0.550 | 1.65 | ug/L | | | | - | | |
| 2-Chlorophenol | ND | | 0.890 | 2.67 | ug/L | | | | - | | |
| 2-Nitrophenol | ND | | 0.880 | 2.64 | ug/L | | | | - | | |
| 3,3'-Dichlorobenzidine | ND | | 0.310 | 0.930 | ug/L | | | | - | | |
| 4,6-Dinitro-2-methylphenol | ND | | 0.270 | 0.810 | ug/L | | | | - | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Blank (1512487-BLK1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 4-Chloro-3-methylphenol | ND | | 0.930 | 2.79 | ug/L | | | | - | | |
| 4-Chlorophenyl phenyl ether | ND | | 0.580 | 1.74 | ug/L | | | | - | | |
| 4-Nitrophenol | ND | | 0.700 | 2.10 | ug/L | | | | - | | |
| Acenaphthene | ND | | 0.490 | 1.47 | ug/L | | | | - | | |
| Acenaphthylene | ND | | 0.640 | 1.92 | ug/L | | | | - | | |
| Anthracene | ND | | 0.500 | 1.50 | ug/L | | | | - | | |
| Benzidine | ND | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (a) anthracene | ND | | 0.180 | 0.540 | ug/L | | | | - | | |
| Benzo (a) pyrene | ND | | 0.280 | 0.840 | ug/L | | | | - | | |
| Benzo (b) fluoranthene | ND | | 0.260 | 0.780 | ug/L | | | | - | | |
| Benzo (g,h,i) perylene | ND | | 0.210 | 0.630 | ug/L | | | | - | | |
| Benzo (k) fluoranthene | ND | | 0.480 | 1.44 | ug/L | | | | - | | |
| Bis(2-chloroethoxy)methane | ND | | 0.580 | 1.74 | ug/L | | | | - | | |
| Bis(2-chloroethyl)ether | ND | | 0.820 | 2.46 | ug/L | | | | - | | |
| Bis(2-chloroisopropyl)ether | ND | | 0.970 | 2.91 | ug/L | | | | - | | |
| Bis(2-ethylhexyl)phthalate | ND | | 1.32 | 3.96 | ug/L | | | | - | | |

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Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Blank (1512487-BLK1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Chrysene | ND | | 0.300 | 0.900 | ug/L | | | | - | | |
| Dibenz (a,h) anthracene | ND | | 0.160 | 0.580 | ug/L | | | | - | | |
| Diethyl phthalate | ND | | 0.200 | 0.600 | ug/L | | | | - | | |
| Dimethyl phthalate | ND | | 0.290 | 0.870 | ug/L | | | | - | | |
| Di-n-butyl phthalate | ND | | 0.240 | 0.720 | ug/L | | | | - | | |
| Di-n-octyl phthalate | ND | | 0.170 | 0.510 | ug/L | | | | - | | |
| Fluoranthene | ND | | 0.280 | 0.840 | ug/L | | | | - | | |
| Fluorene | ND | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobenzene | ND | | 0.520 | 1.56 | ug/L | | | | - | | |
| Hexachlorobutadiene | ND | | 0.530 | 1.59 | ug/L | | | | - | | |
| Hexachlorocyclopentadiene | ND | | 0.690 | 2.07 | ug/L | | | | - | | |
| Hexachloroethane | ND | | 0.810 | 2.43 | ug/L | | | | - | | |
| Indeno (1,2,3-cd) pyrene | ND | | 0.150 | 0.450 | ug/L | | | | - | | |
| Isophorone | ND | | 0.680 | 2.04 | ug/L | | | | - | | |
| Naphthalene | ND | | 0.700 | 2.10 | ug/L | | | | - | | |
| Nitrobenzene | ND | | 0.770 | 2.31 | ug/L | | | | - | | |

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## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Blank (1512487-BLK1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| N-Nitrosodimethylamine | ND | | 1.11 | 3.33 | ug/L | | | | - | | |
| N-Nitrosodi-n-propylamine | ND | | 1.10 | 3.30 | ug/L | | | | - | | |
| N-Nitrosodiphenylamine | ND | | 0.380 | 1.14 | ug/L | | | | - | | |
| Pentachlorophenol | ND | | 0.320 | 0.960 | ug/L | | | | - | | |
| Phenanthrene | ND | | 0.450 | 1.35 | ug/L | | | | - | | |
| Phenol | ND | | 0.580 | 1.74 | ug/L | | | | - | | |
| Pyrene | ND | | 0.220 | 0.660 | ug/L | | | | - | | |
| *Surrogate: 2,4,6-Tribromophenol* | *26.1* | | | | ug/L | *50.00* | | *52.3* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *15.8* | | | | ug/L | *25.00* | | *63.0* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *19.6* | | | | ug/L | *50.00* | | *39.3* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *13.9* | | | | ug/L | *25.00* | | *55.7* | *50-150* | | |
| *Surrogate: Phenol-d6* | *13.9* | | | | ug/L | *50.00* | | *27.7* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *25.6* | | | | ug/L | *25.00* | | *102* | *50-150* | | |
| **LCS (1512487-BS1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 4.92 | | 1.27 | 3.81 | ug/L | 10.00 | | 49.2 | 44-142 | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **LCS (1512487-BS1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,2-Dichlorobenzene | 4.50 | | 1.02 | 3.06 | ug/L | 10.00 | | 45.0 | 32-129 | | |
| 1,2-Diphenylhydrazine as Azobenzene | 6.00 | | 0.660 | 1.98 | ug/L | 10.00 | | 60.0 | 40-140 | | |
| 1,3-Dichlorobenzene | 4.48 | | 1.24 | 3.72 | ug/L | 10.00 | | 44.8 | 0-172 | | |
| 1,4-Dichlorobenzene | 4.31 | | 1.18 | 3.54 | ug/L | 10.00 | | 43.1 | 20-124 | | |
| 2,4,5-Trichlorophenol | 6.38 | | 0.680 | 2.04 | ug/L | 10.00 | | 63.8 | 42-131 | | |
| 2,4-Dichlorophenol | 6.14 | | 0.630 | 1.89 | ug/L | 10.00 | | 61.4 | 39-135 | | |
| 2,4-Dimethylphenol | 6.07 | | 0.490 | 1.47 | ug/L | 10.00 | | 60.7 | 32-119 | | |
| 2,4-Dinitrophenol | 1.30 | | 0.160 | 0.480 | ug/L | 10.00 | | 13.0 | 0-191 | | |
| 2,4-Dinitrotoluene | 6.37 | | 0.300 | 0.900 | ug/L | 10.00 | | 63.7 | 39-139 | | |
| 2,6-Dinitrotoluene | 6.56 | | 0.520 | 1.56 | ug/L | 10.00 | | 65.6 | 50-158 | | |
| 2-Chloronaphthalene | 5.66 | J-2, | 0.550 | 1.65 | ug/L | 10.00 | | 56.6 | 60-118 | | |
| 2-Chlorophenol | 5.84 | | 0.890 | 2.67 | ug/L | 10.00 | | 58.4 | 23-134 | | |
| 2-Nitrophenol | 5.51 | | 0.880 | 2.64 | ug/L | 10.00 | | 55.1 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 13.2 | | 0.310 | 0.930 | ug/L | 10.00 | | 132 | 0-262 | | |
| 4,6-Dinitro-2-methylphenol | 33.8 | J-2, | 0.270 | 0.810 | ug/L | 10.00 | | 338 | 0-181 | | |
| 4-Chloro-3-methylphenol | 6.10 | | 0.930 | 2.79 | ug/L | 10.00 | | 61.0 | 22-147 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **LCS (1512487-BS1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 4-Chlorophenyl phenyl ether | 6.13 | | 0.580 | 1.74 | ug/L | 10.00 | | 61.3 | 25-158 | | |
| 4-Nitrophenol | 4.38 | | 0.700 | 2.10 | ug/L | 10.00 | | 43.8 | 0-132 | | |
| Acenaphthene | 5.97 | | 0.490 | 1.47 | ug/L | 10.00 | | 59.7 | 47-145 | | |
| Acenaphthylene | 6.35 | | 0.640 | 1.92 | ug/L | 10.00 | | 63.5 | 33-145 | | |
| Anthracene | 6.29 | | 0.500 | 1.50 | ug/L | 10.00 | | 62.9 | 27-133 | | |
| Benzidine | 3.70 | J-2, | 0.260 | 0.780 | ug/L | 10.00 | | 37.0 | 40-140 | | |
| Benzo (a) anthracene | 10.6 | | 0.180 | 0.540 | ug/L | 10.00 | | 106 | 33-143 | | |
| Benzo (a) pyrene | 12.0 | | 0.280 | 0.840 | ug/L | 10.00 | | 120 | 17-163 | | |
| Benzo (b) fluoranthene | 11.9 | | 0.260 | 0.780 | ug/L | 10.00 | | 119 | 24-159 | | |
| Benzo (g,h,i) perylene | 8.58 | | 0.210 | 0.630 | ug/L | 10.00 | | 85.8 | 0-219 | | |
| Benzo (k) fluoranthene | 12.7 | | 0.480 | 1.44 | ug/L | 10.00 | | 127 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 5.76 | | 0.580 | 1.74 | ug/L | 10.00 | | 57.6 | 33-184 | | |
| Bis(2-chloroethyl)ether | 5.61 | | 0.820 | 2.46 | ug/L | 10.00 | | 56.1 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 5.74 | | 0.970 | 2.91 | ug/L | 10.00 | | 57.4 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 11.7 | | 1.32 | 3.96 | ug/L | 10.00 | | 117 | 8-158 | | |
| Chrysene | 11.1 | | 0.300 | 0.900 | ug/L | 10.00 | | 111 | 17-168 | | |

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FPL Central Lab

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NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **LCS (1512487-BS1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Dibenz (a,h) anthracene | 8.21 | | 0.160 | 0.580 | ug/L | 10.00 | | 82.1 | 0-227 | | |
| Diethyl phthalate | 6.12 | | 0.200 | 0.600 | ug/L | 10.00 | | 61.2 | 0-114 | | |
| Dimethyl phthalate | 4.12 | | 0.290 | 0.870 | ug/L | 10.00 | | 41.2 | 0-112 | | |
| Di-n-butyl phthalate | 6.56 | | 0.240 | 0.720 | ug/L | 10.00 | | 65.6 | 1-118 | | |
| Di-n-octyl phthalate | 14.9 | J-2, | 0.170 | 0.510 | ug/L | 10.00 | | 149 | 4-146 | | |
| Fluoranthene | 6.28 | | 0.280 | 0.840 | ug/L | 10.00 | | 62.8 | 26-137 | | |
| Fluorene | 6.26 | | 0.520 | 1.56 | ug/L | 10.00 | | 62.6 | 59-121 | | |
| Hexachlorobenzene | 5.96 | | 0.520 | 1.56 | ug/L | 10.00 | | 59.6 | 0-152 | | |
| Hexachlorobutadiene | 4.78 | | 0.530 | 1.59 | ug/L | 10.00 | | 47.8 | 24-116 | | |
| Hexachlorocyclopentadiene | 8.18 | | 0.690 | 2.07 | ug/L | 10.00 | | 81.8 | 40-140 | | |
| Hexachloroethane | 3.97 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | | 39.7 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 9.14 | | 0.150 | 0.450 | ug/L | 10.00 | | 91.4 | 0-171 | | |
| Isophorone | 5.92 | | 0.680 | 2.04 | ug/L | 10.00 | | 59.2 | 21-196 | | |
| Naphthalene | 5.55 | | 0.700 | 2.10 | ug/L | 10.00 | | 55.5 | 21-133 | | |
| Nitrobenzene | 5.35 | | 0.770 | 2.31 | ug/L | 10.00 | | 53.5 | 35-180 | | |
| N-Nitrosodimethylamine | 3.52 | J-2, | 1.11 | 3.33 | ug/L | 10.00 | | 35.2 | 40-140 | | |

Serial #: 01082016131729

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **LCS (1512487-BS1)** | | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| N-Nitrosodi-n-propylamine | 6.74 | | 1.10 | 3.30 | ug/L | 10.00 | | 67.4 | 0-230 | | |
| N-Nitrosodiphenylamine | 6.24 | | 0.380 | 1.14 | ug/L | 10.00 | | 62.4 | 40-140 | | |
| Pentachlorophenol | 8.90 | | 0.320 | 0.960 | ug/L | 10.00 | | 89.0 | 14-176 | | |
| Phenanthrene | 6.48 | | 0.450 | 1.35 | ug/L | 10.00 | | 64.8 | 54-120 | | |
| Phenol | 3.11 | | 0.580 | 1.74 | ug/L | 10.00 | | 31.1 | 5-112 | | |
| Pyrene | 11.6 | J-2, | 0.220 | 0.660 | ug/L | 10.00 | | 116 | 52-115 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *31.4* | | | | ug/L | *50.00* | | *62.9* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *15.4* | | | | ug/L | *25.00* | | *61.7* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *20.5* | | | | ug/L | *50.00* | | *41.0* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *14.2* | | | | ug/L | *25.00* | | *56.7* | *50-150* | | |
| *Surrogate: Phenol-d6* | *14.9* | | | | ug/L | *50.00* | | *29.8* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *25.7* | | | | ug/L | *25.00* | | *103* | *50-150* | | |
| **Matrix Spike (1512487-MS1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 4.87 | | 1.27 | 3.81 | ug/L | 10.00 | ND | 48.7 | 44-142 | | |
| 1,2-Dichlorobenzene | 4.56 | | 1.02 | 3.06 | ug/L | 10.00 | ND | 45.6 | 32-129 | | |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1512487-MS1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,2-Diphenylhydrazine as Azobenzene | 5.60 | | 0.660 | 1.98 | ug/L | 10.00 | ND | 56.0 | 40-140 | | |
| 1,3-Dichlorobenzene | 4.79 | | 1.24 | 3.72 | ug/L | 10.00 | ND | 47.9 | 0-172 | | |
| 1,4-Dichlorobenzene | 4.53 | | 1.18 | 3.54 | ug/L | 10.00 | ND | 45.3 | 20-124 | | |
| 2,4,5-Trichlorophenol | 6.72 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 67.2 | 46-131 | | |
| 2,4-Dichlorophenol | 6.24 | | 0.630 | 1.89 | ug/L | 10.00 | ND | 62.4 | 39-135 | | |
| 2,4-Dimethylphenol | 6.14 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 61.4 | 32-119 | | |
| 2,4-Dinitrophenol | 2.19 | | 0.160 | 0.480 | ug/L | 10.00 | ND | 21.9 | 0-191 | | |
| 2,4-Dinitrotoluene | 6.86 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 68.6 | 39-139 | | |
| 2,6-Dinitrotoluene | 6.61 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 66.1 | 50-158 | | |
| 2-Chloronaphthalene | 5.84 | J-2, J-3, | 0.550 | 1.65 | ug/L | 10.00 | ND | 58.4 | 60-118 | | |
| 2-Chlorophenol | 5.99 | | 0.890 | 2.67 | ug/L | 10.00 | ND | 59.9 | 23-134 | | |
| 2-Nitrophenol | 5.78 | | 0.880 | 2.64 | ug/L | 10.00 | ND | 57.8 | 29-182 | | |
| 3,3'-Dichlorobenzidine | 13.3 | | 0.310 | 0.930 | ug/L | 10.00 | ND | 133 | 0-262 | | |
| 4,6-Dinitro-2-methylphenol | 34.1 | J-2, J-3, | 0.270 | 0.810 | ug/L | 10.00 | ND | 341 | 0-181 | | |
| 4-Chloro-3-methylphenol | 6.11 | | 0.930 | 2.79 | ug/L | 10.00 | ND | 61.1 | 22-147 | | |
| 4-Chlorophenyl phenyl ether | 6.11 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 61.1 | 25-158 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

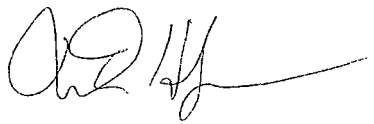
## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1512487-MS1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 4-Nitrophenol | 4.09 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 40.9 | 0-132 | | |
| Acenaphthene | 5.93 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 59.3 | 47-145 | | |
| Acenaphthylene | 6.51 | | 0.640 | 1.92 | ug/L | 10.00 | ND | 65.1 | 33-145 | | |
| Anthracene | 6.21 | | 0.500 | 1.50 | ug/L | 10.00 | ND | 62.1 | 27-133 | | |
| Benzidine | 4.67 | J-2, | 0.260 | 0.780 | ug/L | 10.00 | ND | 46.7 | 40-140 | | |
| Benzo (a) anthracene | 10.3 | | 0.180 | 0.540 | ug/L | 10.00 | ND | 103 | 33-143 | | |
| Benzo (a) pyrene | 11.6 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 116 | 17-163 | | |
| Benzo (b) fluoranthene | 11.6 | | 0.260 | 0.780 | ug/L | 10.00 | ND | 116 | 24-159 | | |
| Benzo (g,h,i) perylene | 7.81 | | 0.210 | 0.630 | ug/L | 10.00 | ND | 78.1 | 0-219 | | |
| Benzo (k) fluoranthene | 12.2 | | 0.480 | 1.44 | ug/L | 10.00 | ND | 122 | 11-162 | | |
| Bis(2-chloroethoxy)methane | 5.99 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 59.9 | 33-184 | | |
| Bis(2-chloroethyl)ether | 6.09 | | 0.820 | 2.46 | ug/L | 10.00 | ND | 60.9 | 12-158 | | |
| Bis(2-chloroisopropyl)ether | 6.12 | | 0.970 | 2.91 | ug/L | 10.00 | ND | 61.2 | 36-166 | | |
| Bis(2-ethylhexyl)phthalate | 12.0 | | 1.32 | 3.96 | ug/L | 10.00 | ND | 120 | 8-158 | | |
| Chrysene | 10.3 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 103 | 17-168 | | |
| Dibenz (a,h) anthracene | 8.30 | | 0.160 | 0.580 | ug/L | 10.00 | ND | 83.0 | 0-227 | | |

Serial #: 01082016131729

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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NELAC Certification #: E56078

**Reported:**
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## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1512487-MS1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Diethyl phthalate | 6.08 | | 0.200 | 0.600 | ug/L | 10.00 | ND | 60.8 | 0-114 | | |
| Dimethyl phthalate | 4.16 | | 0.290 | 0.870 | ug/L | 10.00 | ND | 41.6 | 0-112 | | |
| Di-n-butyl phthalate | 6.40 | | 0.240 | 0.720 | ug/L | 10.00 | ND | 64.0 | 1-118 | | |
| Di-n-octyl phthalate | 14.0 | J-2, | 0.170 | 0.510 | ug/L | 10.00 | ND | 140 | 4-146 | | |
| Fluoranthene | 6.28 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 62.8 | 26-137 | | |
| Fluorene | 6.32 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 63.2 | 59-121 | | |
| Hexachlorobenzene | 5.83 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 58.3 | 0-152 | | |
| Hexachlorobutadiene | 4.91 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 49.1 | 24-116 | | |
| Hexachlorocyclopentadiene | 8.02 | | 0.690 | 2.07 | ug/L | 10.00 | ND | 80.2 | 40-140 | | |
| Hexachloroethane | 4.29 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | ND | 42.9 | 40-113 | | |
| Indeno (1,2,3-cd) pyrene | 8.28 | | 0.150 | 0.450 | ug/L | 10.00 | ND | 82.8 | 0-171 | | |
| Isophorone | 5.90 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 59.0 | 21-196 | | |
| Naphthalene | 5.64 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 56.4 | 21-133 | | |
| Nitrobenzene | 5.44 | | 0.770 | 2.31 | ug/L | 10.00 | ND | 54.4 | 35-180 | | |
| N-Nitrosodimethylamine | 3.55 | J-2, J-3, | 1.11 | 3.33 | ug/L | 10.00 | ND | 35.5 | 40-140 | | |
| N-Nitrosodi-n-propylamine | 6.97 | | 1.10 | 3.30 | ug/L | 10.00 | ND | 69.7 | 0-230 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike (1512487-MS1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| N-Nitrosodiphenylamine | 6.25 | | 0.380 | 1.14 | ug/L | 10.00 | ND | 62.5 | 40-140 | | |
| Pentachlorophenol | 8.48 | | 0.320 | 0.960 | ug/L | 10.00 | ND | 84.8 | 14-176 | | |
| Phenanthrene | 6.46 | | 0.450 | 1.35 | ug/L | 10.00 | ND | 64.6 | 54-120 | | |
| Phenol | 3.14 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 31.4 | 5-112 | | |
| Pyrene | 11.2 | J-2, | 0.220 | 0.660 | ug/L | 10.00 | ND | 112 | 52-115 | | |
| *Surrogate: 2,4,6-Tribromophenol* | *31.0* | | | | ug/L | *50.00* | | *61.9* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *15.9* | | | | ug/L | *25.00* | | *63.6* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *20.1* | | | | ug/L | *50.00* | | *40.2* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *13.9* | | | | ug/L | *25.00* | | *55.8* | *50-150* | | |
| *Surrogate: Phenol-d6* | *14.8* | | | | ug/L | *50.00* | | *29.7* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *25.0* | | | | ug/L | *25.00* | | *100* | *50-150* | | |
| **Matrix Spike Dup (1512487-MSD1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 4.72 | | 1.27 | 3.81 | ug/L | 10.00 | ND | 47.2 | 44-142 | 3.13 | 20 |
| 1,2-Dichlorobenzene | 5.00 | | 1.02 | 3.06 | ug/L | 10.00 | ND | 50.0 | 32-129 | 9.21 | 20 |
| 1,2-Diphenylhydrazine as Azobenzene | 6.28 | | 0.660 | 1.98 | ug/L | 10.00 | ND | 62.8 | 40-140 | 11.4 | 20 |

Serial #: 01082016131729

FPL Central Lab

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**Reported:**
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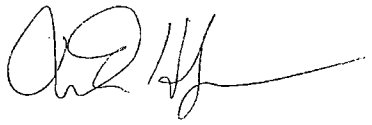
## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1512487-MSD1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,3-Dichlorobenzene | 4.95 | | 1.24 | 3.72 | ug/L | 10.00 | ND | 49.5 | 0-172 | 3.29 | 20 |
| 1,4-Dichlorobenzene | 4.77 | | 1.18 | 3.54 | ug/L | 10.00 | ND | 47.7 | 20-124 | 5.16 | 20 |
| 2,4,5-Trichlorophenol | 7.04 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 70.4 | 46-131 | 4.65 | 30 |
| 2,4-Dichlorophenol | 6.27 | | 0.630 | 1.89 | ug/L | 10.00 | ND | 62.7 | 39-135 | 0.480 | 20 |
| 2,4-Dimethylphenol | 5.83 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 58.3 | 32-119 | 5.18 | 20 |
| 2,4-Dinitrophenol | 2.55 | | 0.160 | 0.480 | ug/L | 10.00 | ND | 25.5 | 0-191 | 15.2 | 20 |
| 2,4-Dinitrotoluene | 6.76 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 67.6 | 39-139 | 1.47 | 20 |
| 2,6-Dinitrotoluene | 7.04 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 70.4 | 50-158 | 6.30 | 20 |
| 2-Chloronaphthalene | 5.94 | J-2, J-3, | 0.550 | 1.65 | ug/L | 10.00 | ND | 59.4 | 60-118 | 1.70 | 20 |
| 2-Chlorophenol | 6.16 | | 0.890 | 2.67 | ug/L | 10.00 | ND | 61.6 | 23-134 | 2.80 | 20 |
| 2-Nitrophenol | 5.92 | | 0.880 | 2.64 | ug/L | 10.00 | ND | 59.2 | 29-182 | 2.39 | 20 |
| 3,3'-Dichlorobenzidine | 13.6 | | 0.310 | 0.930 | ug/L | 10.00 | ND | 136 | 0-262 | 2.38 | 20 |
| 4,6-Dinitro-2-methylphenol | 34.2 | J-2, J-3, | 0.270 | 0.810 | ug/L | 10.00 | ND | 342 | 0-181 | 0.293 | 20 |
| 4-Chloro-3-methylphenol | 6.21 | | 0.930 | 2.79 | ug/L | 10.00 | ND | 62.1 | 22-147 | 1.62 | 20 |
| 4-Chlorophenyl phenyl ether | 6.48 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 64.8 | 25-158 | 5.88 | 20 |
| 4-Nitrophenol | 4.21 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 42.1 | 0-132 | 2.89 | 20 |

Serial #: 01082016131729

FPL Central Lab



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## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1512487-MSD1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Acenaphthene | 6.32 | | 0.490 | 1.47 | ug/L | 10.00 | ND | 63.2 | 47-145 | 6.37 | 20 |
| Acenaphthylene | 6.55 | | 0.640 | 1.92 | ug/L | 10.00 | ND | 65.5 | 33-145 | 0.613 | 20 |
| Anthracene | 6.26 | | 0.500 | 1.50 | ug/L | 10.00 | ND | 62.6 | 27-133 | 0.802 | 20 |
| Benzidine | 4.33 | J-2, | 0.260 | 0.780 | ug/L | 10.00 | ND | 43.3 | 40-140 | 7.56 | 20 |
| Benzo (a) anthracene | 10.8 | | 0.180 | 0.540 | ug/L | 10.00 | ND | 108 | 33-143 | 4.26 | 20 |
| Benzo (a) pyrene | 12.0 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 120 | 17-163 | 3.64 | 20 |
| Benzo (b) fluoranthene | 12.1 | | 0.260 | 0.780 | ug/L | 10.00 | ND | 121 | 24-159 | 4.04 | 20 |
| Benzo (g,h,i) perylene | 8.47 | | 0.210 | 0.630 | ug/L | 10.00 | ND | 84.7 | 0-219 | 8.11 | 20 |
| Benzo (k) fluoranthene | 13.2 | | 0.480 | 1.44 | ug/L | 10.00 | ND | 132 | 11-162 | 7.98 | 20 |
| Bis(2-chloroethoxy)methane | 5.98 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 59.8 | 33-184 | 0.167 | 20 |
| Bis(2-chloroethyl)ether | 5.44 | | 0.820 | 2.46 | ug/L | 10.00 | ND | 54.4 | 12-158 | 11.3 | 20 |
| Bis(2-chloroisopropyl)ether | 6.05 | | 0.970 | 2.91 | ug/L | 10.00 | ND | 60.5 | 36-166 | 1.15 | 20 |
| Bis(2-ethylhexyl)phthalate | 11.8 | | 1.32 | 3.96 | ug/L | 10.00 | ND | 118 | 8-158 | 1.43 | 20 |
| Chrysene | 11.1 | | 0.300 | 0.900 | ug/L | 10.00 | ND | 111 | 17-168 | 7.02 | 20 |
| Dibenz (a,h) anthracene | 8.96 | | 0.160 | 0.580 | ug/L | 10.00 | ND | 89.6 | 0-227 | 7.65 | 20 |
| Diethyl phthalate | 6.13 | | 0.200 | 0.600 | ug/L | 10.00 | ND | 61.3 | 0-114 | 0.819 | 20 |

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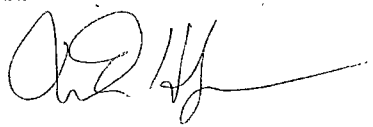

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1512487-MSD1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Dimethyl phthalate | 4.37 | | 0.290 | 0.870 | ug/L | 10.00 | ND | 43.7 | 0-112 | 4.92 | 20 |
| Di-n-butyl phthalate | 6.38 | | 0.240 | 0.720 | ug/L | 10.00 | ND | 63.8 | 1-118 | 0.313 | 20 |
| Di-n-octyl phthalate | 14.9 | J-2, | 0.170 | 0.510 | ug/L | 10.00 | ND | 149 | 4-146 | 5.88 | 20 |
| Fluoranthene | 6.43 | | 0.280 | 0.840 | ug/L | 10.00 | ND | 64.3 | 26-137 | 2.36 | 20 |
| Fluorene | 6.73 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 67.3 | 59-121 | 6.28 | 20 |
| Hexachlorobenzene | 5.91 | | 0.520 | 1.56 | ug/L | 10.00 | ND | 59.1 | 0-152 | 1.36 | 20 |
| Hexachlorobutadiene | 4.85 | | 0.530 | 1.59 | ug/L | 10.00 | ND | 48.5 | 24-116 | 1.23 | 20 |
| Hexachlorocyclopentadiene | 8.55 | | 0.690 | 2.07 | ug/L | 10.00 | ND | 85.5 | 40-140 | 6.40 | 20 |
| Hexachloroethane | 4.45 | J-2, | 0.810 | 2.43 | ug/L | 10.00 | ND | 44.5 | 40-113 | 3.66 | 20 |
| Indeno (1,2,3-cd) pyrene | 8.66 | | 0.150 | 0.450 | ug/L | 10.00 | ND | 86.6 | 0-171 | 4.49 | 20 |
| Isophorone | 6.18 | | 0.680 | 2.04 | ug/L | 10.00 | ND | 61.8 | 21-196 | 4.64 | 20 |
| Naphthalene | 5.56 | | 0.700 | 2.10 | ug/L | 10.00 | ND | 55.6 | 21-133 | 1.43 | 20 |
| Nitrobenzene | 5.53 | | 0.770 | 2.31 | ug/L | 10.00 | ND | 55.3 | 35-180 | 1.64 | 20 |
| N-Nitrosodimethylamine | 3.92 | J-2, J-3, | 1.11 | 3.33 | ug/L | 10.00 | ND | 39.2 | 40-140 | 9.91 | 20 |
| N-Nitrosodi-n-propylamine | 7.28 | | 1.10 | 3.30 | ug/L | 10.00 | ND | 72.8 | 0-230 | 4.35 | 20 |
| N-Nitrosodiphenylamine | 6.32 | | 0.380 | 1.14 | ug/L | 10.00 | ND | 63.2 | 40-140 | 1.11 | 20 |

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**Reported:**
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Attn: Chrissi-lee Williams

## BNA Extractables - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512487 - EPA 625** | | | | | | | | | | | |
| **Matrix Spike Dup (1512487-MSD1)** | **Source: 15L0473-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Pentachlorophenol | 8.55 | | 0.320 | 0.960 | ug/L | 10.00 | ND | 85.5 | 14-176 | 0.822 | 20 |
| Phenanthrene | 6.37 | | 0.450 | 1.35 | ug/L | 10.00 | ND | 63.7 | 54-120 | 1.40 | 20 |
| Phenol | 3.28 | | 0.580 | 1.74 | ug/L | 10.00 | ND | 32.8 | 5-112 | 4.36 | 20 |
| Pyrene | 12.3 | J-2, | 0.220 | 0.660 | ug/L | 10.00 | ND | 123 | 52-115 | 9.22 | 20 |
| *Surrogate: 2,4,6-Tribromophenol* | *32.6* | | | | ug/L | *50.00* | | *65.2* | *50-150* | | |
| *Surrogate: 2-Fluorobiphenyl* | *16.4* | | | | ug/L | *25.00* | | *65.5* | *50-150* | | |
| *Surrogate: 2-Fluorophenol* | *20.3* | | | | ug/L | *50.00* | | *40.6* | *30-110* | | |
| *Surrogate: Nitrobenzene-d5* | *14.1* | | | | ug/L | *25.00* | | *56.4* | *50-150* | | |
| *Surrogate: Phenol-d6* | *15.8* | | | | ug/L | *50.00* | | *31.6* | *30-110* | | |
| *Surrogate: p-Terphenyl* | *26.2* | | | | ug/L | *25.00* | | *105* | *50-150* | | |

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**Reported:**
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## Gross Alpha Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512648 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1512648-BLK1)** | | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Alpha | ND | | 1.12 | 3.36 | pCi/L | | | | - | | |
| **LCS (1512648-BS1)** | | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Alpha | 777 | | 1.31 | 3.93 | pCi/L | 1000 | | 77.7 | 60-125 | | |
| **LCS Dup (1512648-BSD1)** | | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Alpha | 776 | | 2.10 | 6.30 | pCi/L | 1000 | | 77.6 | 60-125 | 0.129 | 25 |
| **Matrix Spike (1512648-MS1)** | **Source: 15L0341-01** | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Alpha | 942 | | 2.04 | 6.12 | pCi/L | 1000 | 2.32±0.71 | 94.2 | 60-125 | | |
| **Matrix Spike Dup (1512648-MSD1)** | **Source: 15L0341-01** | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Alpha | 746 | | 1.73 | 4.19 | pCi/L | 1000 | 2.32±0.71 | 74.6 | 60-125 | 23.2 | 25 |

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**Reported:**
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## Gross Beta Activity by EPA 900 - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512648 - EPA 900.0** | | | | | | | | | | | |
| **Blank (1512648-BLK1)** | | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Beta | ND | | 0.630 | 1.89 | pCi/L | | | | - | | |
| **LCS (1512648-BS1)** | | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Beta | 238 | | 2.45 | 7.35 | pCi/L | 250.0 | | 95.2 | 0-200 | | |
| **LCS Dup (1512648-BSD1)** | | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Beta | 233 | | 2.63 | 7.89 | pCi/L | 250.0 | | 93.2 | 0-200 | 2.12 | 200 |
| **Matrix Spike (1512648-MS1)** | **Source: 15L0341-01** | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Beta | 137 | | 2.72 | 8.16 | pCi/L | 150.0 | ND | 91.3 | 0-200 | | |
| **Matrix Spike Dup (1512648-MSD1)** | **Source: 15L0341-01** | | Prepared: 12/17/2015 Analyzed: 12/22/2015 | | | | | | | | |
| Gross Beta | 116 | | 2.89 | 8.67 | pCi/L | 150.0 | ND | 77.3 | 0-200 | 16.6 | 200 |

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## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512589 - CBOD SM5210B** | | | | | | | | | | | |
| **Blank (1512589-BLK1)** | | | Prepared: 12/15/2015 Analyzed: 12/20/2015 | | | | | | | | |
| Carbonaceous BOD | ND | | 2.00 | 6.00 | mg/L | | | | - | | |
| **LCS (1512589-BS1)** | | | Prepared: 12/15/2015 Analyzed: 12/20/2015 | | | | | | | | |
| Carbonaceous BOD | 181 | | 2.00 | 6.00 | mg/L | 198.0 | | 91.4 | 85-115 | | |
| **LCS Dup (1512589-BSD1)** | | | Prepared: 12/15/2015 Analyzed: 12/20/2015 | | | | | | | | |
| Carbonaceous BOD | 185 | | 2.00 | 6.00 | mg/L | 198.0 | | 93.4 | 85-115 | 2.19 | 20 |

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## Total Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512391 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1512391-BLK1)** | | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Antimony | ND | | 0.003 | 0.008 | mg/L | | | | - | | |
| Boron | ND | | 0.004 | 0.011 | mg/L | | | | - | | |
| Molybdenum | ND | | 0.004 | 0.013 | mg/L | | | | - | | |
| Titanium | ND | | 0.0006 | 0.0018 | mg/L | | | | - | | |
| **LCS (1512391-BS1)** | | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Antimony | 0.9918 | | 0.003 | 0.008 | mg/L | 1.000 | | 99.2 | 85-115 | | |
| Boron | 1.007 | | 0.004 | 0.011 | mg/L | 1.000 | | 101 | 85-115 | | |
| Molybdenum | 1.020 | | 0.004 | 0.013 | mg/L | 1.000 | | 102 | 85-115 | | |
| Titanium | 0.9893 | | 0.0006 | 0.0018 | mg/L | 1.000 | | 98.9 | 85-115 | | |
| **Matrix Spike (1512391-MS1)** | **Source: 15L0416-01** | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Antimony | 1.008 | | 0.003 | 0.008 | mg/L | 1.000 | ND | 101 | 70-130 | | |
| Boron | 0.9949 | | 0.004 | 0.011 | mg/L | 1.000 | ND | 99.5 | 70-130 | | |
| Molybdenum | 1.013 | | 0.004 | 0.013 | mg/L | 1.000 | ND | 101 | 70-130 | | |
| Titanium | 0.9789 | | 0.0006 | 0.0018 | mg/L | 1.000 | ND | 97.9 | 70-130 | | |

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## Total Metals - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512391 - EPA 200.7** | | | | | | | | | | | |
| **Matrix Spike Dup (1512391-MSD1)** | **Source: 15L0416-01** | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Antimony | 1.005 | | 0.003 | 0.008 | mg/L | 1.000 | ND | 101 | 70-130 | 0.241 | 20 |
| Boron | 0.9983 | | 0.004 | 0.011 | mg/L | 1.000 | ND | 99.8 | 70-130 | 0.341 | 20 |
| Molybdenum | 1.030 | | 0.004 | 0.013 | mg/L | 1.000 | ND | 103 | 70-130 | 1.64 | 20 |
| Titanium | 0.9817 | | 0.0006 | 0.0018 | mg/L | 1.000 | ND | 98.2 | 70-130 | 0.286 | 20 |
| **Batch 1512418 - EPA 200.7** | | | | | | | | | | | |
| **Blank (1512418-BLK1)** | | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Tin | ND | | 0.008 | 0.024 | mg/L | | | | - | | |
| **LCS (1512418-BS1)** | | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Tin | 0.991 | | 0.008 | 0.024 | mg/L | 1.000 | | 99.1 | 85-115 | | |
| **Matrix Spike (1512418-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Tin | 0.937 | | 0.008 | 0.024 | mg/L | 1.000 | ND | 93.7 | 70-130 | | |
| **Matrix Spike Dup (1512418-MSD1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Tin | 0.939 | | 0.008 | 0.024 | mg/L | 1.000 | ND | 93.9 | 70-130 | 0.149 | 20 |

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Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **Blank (1512503-BLK1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | ND | | 0.0380 | 0.113 | ug/L | | | | - | | |
| 1,1,2,2-Tetrachloroethane | ND | | 0.0690 | 0.207 | ug/L | | | | - | | |
| 1,1,2-Trichloroethane | ND | | 0.0750 | 0.226 | ug/L | | | | - | | |
| 1,1-Dichloroethane | ND | | 0.204 | 0.612 | ug/L | | | | - | | |
| 1,1-Dichloroethene | ND | | 0.0590 | 0.176 | ug/L | | | | - | | |
| 1,2-Dichloroethane | ND | | 0.0360 | 0.109 | ug/L | | | | - | | |
| 1,2-Dichloropropane | ND | | 0.0450 | 0.136 | ug/L | | | | - | | |
| 2-Chloroethylvinyl ether | ND | | 0.745 | 2.24 | ug/L | | | | - | | |
| Acrolein | ND | | 0.303 | 0.909 | ug/L | | | | - | | |
| Acrylonitrile | ND | | 0.160 | 0.479 | ug/L | | | | - | | |
| Benzene | ND | | 0.0300 | 0.0900 | ug/L | | | | - | | |
| Bromodichloromethane | ND | | 0.0860 | 0.258 | ug/L | | | | - | | |
| Bromoform | ND | | 0.138 | 0.414 | ug/L | | | | - | | |
| Bromomethane | ND | | 0.132 | 0.397 | ug/L | | | | - | | |
| Carbon Tetrachloride | ND | | 0.0520 | 0.156 | ug/L | | | | - | | |
| Chlorobenzene | ND | | 0.0790 | 0.237 | ug/L | | | | - | | |

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## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **Blank (1512503-BLK1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| Chloroethane | ND | | 0.308 | 0.924 | ug/L | | | | - | | |
| Chloroform | ND | | 0.0770 | 0.232 | ug/L | | | | - | | |
| Chloromethane | ND | | 0.0480 | 0.144 | ug/L | | | | - | | |
| cis-1,3-Dichloropropene | ND | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Dibromochloromethane | ND | | 0.0660 | 0.199 | ug/L | | | | - | | |
| Dichlorodifluoromethane | ND | | 0.0940 | 0.283 | ug/L | | | | - | | |
| Ethyl Benzene | ND | | 0.0840 | 0.252 | ug/L | | | | - | | |
| Methylene Chloride | ND | | 0.751 | 2.25 | ug/L | | | | - | | |
| Tetrachloroethene | ND | | 0.0840 | 0.253 | ug/L | | | | - | | |
| Toluene | ND | | 0.0350 | 0.104 | ug/L | | | | - | | |
| trans-1,2-Dichloroethene | ND | | 0.107 | 0.320 | ug/L | | | | - | | |
| trans-1,3-Dichloropropene | ND | | 0.250 | 0.751 | ug/L | | | | - | | |
| Trichloroethene | ND | | 0.0500 | 0.151 | ug/L | | | | - | | |
| Trichlorofluoromethane | ND | | 0.0700 | 0.211 | ug/L | | | | - | | |
| Vinyl chloride | ND | | 0.0840 | 0.253 | ug/L | | | | - | | |

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## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **Blank (1512503-BLK1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.29* | | | | ug/L | *5.000* | | *65.8* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *3.71* | | | | ug/L | *5.000* | | *74.2* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *3.94* | | | | ug/L | *5.000* | | *78.8* | *46-125* | | |
| **LCS (1512503-BS1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | 18.2 | | 0.0380 | 0.113 | ug/L | 20.00 | | 91.2 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 17.7 | | 0.0690 | 0.207 | ug/L | 20.00 | | 88.6 | 46-157 | | |
| 1,1,2-Trichloroethane | 20.2 | | 0.0750 | 0.226 | ug/L | 20.00 | | 101 | 52-150 | | |
| 1,1-Dichloroethane | 17.7 | | 0.204 | 0.612 | ug/L | 20.00 | | 88.6 | 59-155 | | |
| 1,1-Dichloroethene | 17.7 | | 0.0590 | 0.176 | ug/L | 20.00 | | 88.7 | 0-234 | | |
| 1,2-Dichloroethane | 20.2 | | 0.0360 | 0.109 | ug/L | 20.00 | | 101 | 49-155 | | |
| 1,2-Dichloropropane | 17.6 | | 0.0450 | 0.136 | ug/L | 20.00 | | 88.0 | 0-210 | | |
| 2-Chloroethylvinyl ether | 13.4 | | 0.745 | 2.24 | ug/L | 20.00 | | 67.0 | 0-305 | | |
| Acrolein | 82.2 | | 0.303 | 0.909 | ug/L | 100.0 | | 82.2 | 70-130 | | |
| Acrylonitrile | 17.1 | | 0.160 | 0.479 | ug/L | 20.00 | | 85.6 | 70-130 | | |
| Benzene | 19.0 | | 0.0300 | 0.0900 | ug/L | 20.00 | | 95.2 | 37-151 | | |

Serial #: 01082016131729

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **LCS (1512503-BS1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| Bromodichloromethane | 19.0 | | 0.0860 | 0.258 | ug/L | 20.00 | | 94.9 | 35-155 | | |
| Bromoform | 16.5 | | 0.138 | 0.414 | ug/L | 20.00 | | 82.6 | 45-169 | | |
| Bromomethane | 18.7 | | 0.132 | 0.397 | ug/L | 20.00 | | 93.5 | 0-242 | | |
| Carbon Tetrachloride | 17.8 | | 0.0520 | 0.156 | ug/L | 20.00 | | 88.8 | 70-140 | | |
| Chlorobenzene | 19.3 | | 0.0790 | 0.237 | ug/L | 20.00 | | 96.6 | 37-160 | | |
| Chloroethane | 16.8 | | 0.308 | 0.924 | ug/L | 20.00 | | 84.0 | 14-230 | | |
| Chloroform | 21.8 | | 0.0770 | 0.232 | ug/L | 20.00 | | 109 | 51-138 | | |
| Chloromethane | 15.3 | | 0.0480 | 0.144 | ug/L | 20.00 | | 76.4 | 0-273 | | |
| cis-1,3-Dichloropropene | 17.0 | | 0.0500 | 0.151 | ug/L | 20.00 | | 85.0 | 0-227 | | |
| Dibromochloromethane | 17.9 | | 0.0660 | 0.199 | ug/L | 20.00 | | 89.7 | 53-149 | | |
| Dichlorodifluoromethane | 13.0 | J-2, | 0.0940 | 0.283 | ug/L | 20.00 | | 65.2 | 70-130 | | |
| Ethyl Benzene | 19.4 | | 0.0840 | 0.252 | ug/L | 20.00 | | 97.2 | 37-162 | | |
| Methylene Chloride | 18.8 | | 0.751 | 2.25 | ug/L | 20.00 | | 93.9 | 0-221 | | |
| Tetrachloroethene | 20.3 | | 0.0840 | 0.253 | ug/L | 20.00 | | 102 | 64-148 | | |
| Toluene | 19.7 | | 0.0350 | 0.104 | ug/L | 20.00 | | 98.4 | 47-150 | | |
| trans-1,2-Dichloroethene | 17.5 | | 0.107 | 0.320 | ug/L | 20.00 | | 87.4 | 54-156 | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **LCS (1512503-BS1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| trans-1,3-Dichloropropene | 16.0 | | 0.250 | 0.751 | ug/L | 20.00 | | 80.2 | 17-183 | | |
| Trichloroethene | 18.2 | | 0.0500 | 0.151 | ug/L | 20.00 | | 91.0 | 71-157 | | |
| Trichlorofluoromethane | 15.9 | | 0.0700 | 0.211 | ug/L | 20.00 | | 79.7 | 17-181 | | |
| Vinyl chloride | 14.8 | | 0.0840 | 0.253 | ug/L | 20.00 | | 74.0 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.56* | *J-1,* | | | ug/L | *5.000* | | *131* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *10.2* | *J-1,* | | | ug/L | *5.000* | | *205* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.37* | *J-1,* | | | ug/L | *5.000* | | *127* | *46-125* | | |
| **Matrix Spike (1512503-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | 6.74 | | 0.0380 | 0.113 | ug/L | 10.00 | ND | 67.4 | 52-162 | | |
| 1,1,2,2-Tetrachloroethane | 8.54 | | 0.0690 | 0.207 | ug/L | 10.00 | ND | 85.4 | 46-157 | | |
| 1,1,2-Trichloroethane | 9.25 | | 0.0750 | 0.226 | ug/L | 10.00 | ND | 92.5 | 52-150 | | |
| 1,1-Dichloroethane | 7.97 | | 0.204 | 0.612 | ug/L | 10.00 | ND | 79.7 | 59-155 | | |
| 1,1-Dichloroethene | 8.25 | | 0.0590 | 0.176 | ug/L | 10.00 | ND | 82.5 | 0-234 | | |
| 1,2-Dichloroethane | 8.70 | | 0.0360 | 0.109 | ug/L | 10.00 | ND | 87.0 | 49-155 | | |
| 1,2-Dichloropropane | 7.70 | | 0.0450 | 0.136 | ug/L | 10.00 | ND | 77.0 | 0-210 | | |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1512503-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 2-Chloroethylvinyl ether | ND | | 0.745 | 2.24 | ug/L | 10.00 | ND | | 0-305 | | |
| Acrolein | 43.0 | | 0.303 | 0.909 | ug/L | 50.00 | ND | 86.1 | 70-130 | | |
| Acrylonitrile | 8.46 | | 0.160 | 0.479 | ug/L | 10.00 | ND | 84.6 | 70-130 | | |
| Benzene | 8.34 | | 0.0300 | 0.0900 | ug/L | 10.00 | ND | 83.4 | 37-151 | | |
| Bromodichloromethane | 8.24 | | 0.0860 | 0.258 | ug/L | 10.00 | ND | 82.4 | 35-155 | | |
| Bromoform | 7.78 | | 0.138 | 0.414 | ug/L | 10.00 | ND | 77.8 | 45-169 | | |
| Bromomethane | 9.42 | | 0.132 | 0.397 | ug/L | 10.00 | ND | 94.2 | 0-242 | | |
| Carbon Tetrachloride | 6.83 | | 0.0520 | 0.156 | ug/L | 10.00 | ND | 68.3 | 70-140 | | |
| Chlorobenzene | 9.00 | | 0.0790 | 0.237 | ug/L | 10.00 | ND | 90.0 | 37-160 | | |
| Chloroethane | 20.4 | | 0.308 | 0.924 | ug/L | 10.00 | ND | 204 | 14-230 | | |
| Chloroform | 8.60 | | 0.0770 | 0.232 | ug/L | 10.00 | ND | 86.0 | 51-138 | | |
| Chloromethane | 8.61 | | 0.0480 | 0.144 | ug/L | 10.00 | ND | 86.1 | 0-273 | | |
| cis-1,3-Dichloropropene | 5.22 | | 0.0500 | 0.151 | ug/L | 10.00 | ND | 52.2 | 0-227 | | |
| Dibromochloromethane | 8.09 | | 0.0660 | 0.199 | ug/L | 10.00 | ND | 80.9 | 53-149 | | |
| Dichlorodifluoromethane | 8.37 | J-2, | 0.0940 | 0.283 | ug/L | 10.00 | ND | 83.7 | 70-130 | | |
| Ethyl Benzene | 8.24 | | 0.0840 | 0.252 | ug/L | 10.00 | ND | 82.4 | 37-162 | | |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike (1512503-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| Methylene Chloride | 8.45 | | 0.751 | 2.25 | ug/L | 10.00 | ND | 84.5 | 0-221 | | |
| Tetrachloroethene | 8.14 | | 0.0840 | 0.253 | ug/L | 10.00 | ND | 81.4 | 64-148 | | |
| Toluene | 8.42 | | 0.0350 | 0.104 | ug/L | 10.00 | ND | 84.2 | 47-150 | | |
| trans-1,2-Dichloroethene | 7.99 | | 0.107 | 0.320 | ug/L | 10.00 | ND | 79.9 | 54-156 | | |
| trans-1,3-Dichloropropene | 6.88 | | 0.250 | 0.751 | ug/L | 10.00 | ND | 68.8 | 17-183 | | |
| Trichloroethene | 8.01 | | 0.0500 | 0.151 | ug/L | 10.00 | ND | 80.1 | 71-157 | | |
| Trichlorofluoromethane | 11.2 | | 0.0700 | 0.211 | ug/L | 10.00 | ND | 112 | 17-181 | | |
| Vinyl chloride | 8.22 | | 0.0840 | 0.253 | ug/L | 10.00 | ND | 82.2 | 0-251 | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.88* | *J-1,* | | | ug/L | *5.000* | | *138* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *6.46* | *J-1,* | | | ug/L | *5.000* | | *129* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.44* | *J-1,* | | | ug/L | *5.000* | | *129* | *46-125* | | |
| **Matrix Spike Dup (1512503-MSD1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,1,1-Trichloroethane | 7.21 | | 0.0380 | 0.113 | ug/L | 10.00 | ND | 72.1 | 52-162 | 6.74 | 30 |
| 1,1,2,2-Tetrachloroethane | 10.2 | | 0.0690 | 0.207 | ug/L | 10.00 | ND | 102 | 46-157 | 17.7 | 30 |
| 1,1,2-Trichloroethane | 10.9 | | 0.0750 | 0.226 | ug/L | 10.00 | ND | 109 | 52-150 | 16.4 | 30 |

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FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

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West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1512503-MSD1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| 1,1-Dichloroethane | 9.71 | | 0.204 | 0.612 | ug/L | 10.00 | ND | 97.1 | 59-155 | 19.7 | 30 |
| 1,1-Dichloroethene | 9.41 | | 0.0590 | 0.176 | ug/L | 10.00 | ND | 94.1 | 0-234 | 13.1 | 30 |
| 1,2-Dichloroethane | 10.0 | | 0.0360 | 0.109 | ug/L | 10.00 | ND | 100 | 49-155 | 14.3 | 30 |
| 1,2-Dichloropropane | 8.76 | | 0.0450 | 0.136 | ug/L | 10.00 | ND | 87.6 | 0-210 | 12.9 | 30 |
| 2-Chloroethylvinyl ether | ND | | 0.745 | 2.24 | ug/L | 10.00 | ND | | 0-305 | | 30 |
| Acrolein | 49.1 | | 0.303 | 0.909 | ug/L | 50.00 | ND | 98.1 | 70-130 | 13.1 | 30 |
| Acrylonitrile | 9.41 | | 0.160 | 0.479 | ug/L | 10.00 | ND | 94.1 | 70-130 | 10.6 | 30 |
| Benzene | 9.25 | | 0.0300 | 0.0900 | ug/L | 10.00 | ND | 92.5 | 37-151 | 10.3 | 30 |
| Bromodichloromethane | 9.48 | | 0.0860 | 0.258 | ug/L | 10.00 | ND | 94.8 | 35-155 | 14.0 | 30 |
| Bromoform | 8.68 | | 0.138 | 0.414 | ug/L | 10.00 | ND | 86.8 | 45-169 | 10.9 | 30 |
| Bromomethane | 8.88 | | 0.132 | 0.397 | ug/L | 10.00 | ND | 88.8 | 0-242 | 5.90 | 30 |
| Carbon Tetrachloride | 7.22 | | 0.0520 | 0.156 | ug/L | 10.00 | ND | 72.2 | 70-140 | 5.55 | 30 |
| Chlorobenzene | 10.3 | | 0.0790 | 0.237 | ug/L | 10.00 | ND | 103 | 37-160 | 13.2 | 30 |
| Chloroethane | 19.0 | | 0.308 | 0.924 | ug/L | 10.00 | ND | 190 | 14-230 | 7.15 | 30 |
| Chloroform | 9.33 | | 0.0770 | 0.232 | ug/L | 10.00 | ND | 93.3 | 51-138 | 8.14 | 30 |
| Chloromethane | 7.58 | | 0.0480 | 0.144 | ug/L | 10.00 | ND | 75.8 | 0-273 | 12.7 | 30 |

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FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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PSL - FPL St. Lucie Power Plant
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Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## Volatile Organic Compounds - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512503 - EPA 624** | | | | | | | | | | | |
| **Matrix Spike Dup (1512503-MSD1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/17/2015 | | | | | | | | |
| cis-1,3-Dichloropropene | 6.10 | | 0.0500 | 0.151 | ug/L | 10.00 | ND | 61.0 | 0-227 | 15.5 | 30 |
| Dibromochloromethane | 9.45 | | 0.0660 | 0.199 | ug/L | 10.00 | ND | 94.5 | 53-149 | 15.5 | 30 |
| Dichlorodifluoromethane | 7.45 | J-2, | 0.0940 | 0.283 | ug/L | 10.00 | ND | 74.5 | 70-130 | 11.6 | 30 |
| Ethyl Benzene | 9.72 | | 0.0840 | 0.252 | ug/L | 10.00 | ND | 97.2 | 37-162 | 16.5 | 30 |
| Methylene Chloride | 9.85 | | 0.751 | 2.25 | ug/L | 10.00 | ND | 98.5 | 0-221 | 15.3 | 30 |
| Tetrachloroethene | 9.66 | | 0.0840 | 0.253 | ug/L | 10.00 | ND | 96.6 | 64-148 | 17.1 | 30 |
| Toluene | 9.63 | | 0.0350 | 0.104 | ug/L | 10.00 | ND | 96.3 | 47-150 | 13.4 | 30 |
| trans-1,2-Dichloroethene | 9.32 | | 0.107 | 0.320 | ug/L | 10.00 | ND | 93.2 | 54-156 | 15.4 | 30 |
| trans-1,3-Dichloropropene | 7.78 | | 0.250 | 0.751 | ug/L | 10.00 | ND | 77.8 | 17-183 | 12.3 | 30 |
| Trichloroethene | 9.30 | | 0.0500 | 0.151 | ug/L | 10.00 | ND | 93.0 | 71-157 | 14.9 | 30 |
| Trichlorofluoromethane | 9.22 | | 0.0700 | 0.211 | ug/L | 10.00 | ND | 92.2 | 17-181 | 19.8 | 30 |
| Vinyl chloride | 7.67 | | 0.0840 | 0.253 | ug/L | 10.00 | ND | 76.7 | 0-251 | 6.92 | 30 |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *6.80* | *J-1,* | | | ug/L | *5.000* | | *136* | *50-110* | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *7.24* | *J-1,* | | | ug/L | *5.000* | | *145* | *74-110* | | |
| *Surrogate: 4-Bromofluorobenzene* | *6.39* | *J-1,* | | | ug/L | *5.000* | | *128* | *46-125* | | |

Serial #: 01082016131729

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512395 - SM 2120B** | | | | | | | | | | | |
| **Blank (1512395-BLK1)** | | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Color | 0/5.85 | | 1.00 | 3.00 | Pt-Co | | | | - | | |
| **LCS (1512395-BS1)** | | | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Color | 20/1.48 | | 1.00 | 3.00 | Pt-Co | 20.00 | | 100 | 90-110 | | |
| **Duplicate (1512395-DUP1)** | | **Source: 15L0385-01** | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Color | 0/8.95 | | 1.00 | 3.00 | Pt-Co | | 0/8.97 | | - | | 20 |
| **Duplicate (1512395-DUP2)** | | **Source: 15L0179-01** | Prepared & Analyzed: 12/15/2015 | | | | | | | | |
| Color | 25/7.28 | | 1.00 | 3.00 | Pt-Co | | 25/7.26 | | - | 0.00 | 20 |
| **Batch 1512467 - SM5540C** | | | | | | | | | | | |
| **Blank (1512467-BLK1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | ND | | 0.0603 | 0.181 | mg/L | | | | - | | |
| **LCS (1512467-BS1)** | | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.522 | | 0.0603 | 0.181 | mg/L | 0.5000 | | 104 | 90-110 | | |

Serial #: 01082016131729

FPL Central Lab

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512467 - SM5540C** | | | | | | | | | | | |
| **Duplicate (1512467-DUP1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.0680 | I | 0.0603 | 0.181 | mg/L | | 0.0680 | | - | 0.00 | 20 |
| **Matrix Spike (1512467-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.537 | | 0.0603 | 0.181 | mg/L | 0.5000 | 0.0680 | 93.8 | 90-110 | | |
| **Matrix Spike Dup (1512467-MSD1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/16/2015 | | | | | | | | |
| MBAS as LAS, mol wt. 340 | 0.537 | | 0.0603 | 0.181 | mg/L | 0.5000 | 0.0680 | 93.8 | 90-110 | 0.00 | 20 |
| **Batch 1512547 - TOC SM 5310C** | | | | | | | | | | | |
| **Blank (1512547-BLK1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | ND | | 0.168 | 0.504 | mg/L | | | | - | | |
| **LCS (1512547-BS1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | 5.07 | | 0.168 | 0.504 | mg/L | 5.000 | | 101 | 80-120 | | |
| **Duplicate (1512547-DUP1)** | **Source: 15L0471-01** | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | 7.39 | | 0.168 | 0.504 | mg/L | | 7.31 | | - | 1.09 | 20 |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512547 - TOC SM 5310C** | | | | | | | | | | | |
| **Duplicate (1512547-DUP2)** | **Source: 15L0524-01** | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | 5.79 | | 0.168 | 0.504 | mg/L | | 5.73 | | - | 1.04 | 20 |
| **Matrix Spike (1512547-MS1)** | **Source: 15L0471-01** | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | 12.3 | | 0.168 | 0.504 | mg/L | 5.000 | 7.31 | 99.0 | 80-120 | | |
| **Matrix Spike (1512547-MS2)** | **Source: 15L0524-01** | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | 10.7 | | 0.168 | 0.504 | mg/L | 5.000 | 5.73 | 99.8 | 80-120 | | |
| **Matrix Spike Dup (1512547-MSD1)** | **Source: 15L0471-01** | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | 12.3 | | 0.168 | 0.504 | mg/L | 5.000 | 7.31 | 100 | 80-120 | 1.40 | 20 |
| **Matrix Spike Dup (1512547-MSD2)** | **Source: 15L0524-01** | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Total Organic Carbon | 10.7 | | 0.168 | 0.504 | mg/L | 5.000 | 5.73 | 99.4 | 80-120 | 0.402 | 20 |
| **Batch 1512611 - EPA 335.4** | | | | | | | | | | | |
| **Blank (1512611-BLK1)** | | | Prepared & Analyzed: 12/21/2015 | | | | | | | | |
| Cyanide (total) | ND | | 0.00230 | 0.00690 | mg/L | | | | - | | |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

Attn: Chrissi-lee Williams

## Wet Chemistry - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512611 - EPA 335.4** | | | | | | | | | | | |
| **LCS (1512611-BS1)** | | | Prepared & Analyzed: 12/21/2015 | | | | | | | | |
| Cyanide (total) | 0.189 | | 0.00230 | 0.00690 | mg/L | 0.2000 | | 94.5 | 90-110 | | |
| **Duplicate (1512611-DUP1)** | | **Source: 15L0410-01** | Prepared & Analyzed: 12/21/2015 | | | | | | | | |
| Cyanide (total) | 0.00586 | I | 0.00230 | 0.00690 | mg/L | | 0.00587 | | - | 0.171 | 20 |
| **Matrix Spike (1512611-MS1)** | | **Source: 15L0410-01** | Prepared & Analyzed: 12/21/2015 | | | | | | | | |
| Cyanide (total) | 0.190 | | 0.00230 | 0.00690 | mg/L | 0.2000 | 0.00587 | 91.8 | 90-110 | | |
| **Matrix Spike (1512611-MS2)** | | **Source: 15L0576-01** | Prepared & Analyzed: 12/21/2015 | | | | | | | | |
| Cyanide (total) | 0.180 | J-3, | 0.00230 | 0.00690 | mg/L | 0.2000 | 0.00420 | 87.8 | 90-110 | | |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **15L0179-01 I-008 EP1- SE** | | |
| | A | 125mL Amber H3PO4+CuSO4 |
| | B | 250mL Clear NaOH |
| | C | 40 mL Voa Vial - HCl |
| | D | 40 mL Voa Vial - HCl |
| | E | 500mL Clear Glass - Unpres |
| | F | Amber H2SO4 - 1000mL |
| | G | Amber Unpres - 1000mL |
| | H | Amber Unpres - 1000mL |
| | I | Plastic 250 mL - HN03 |
| | J | Poly H2SO4 - 250mL |
| | K | Poly HNO3 - 250 mL |
| | L | Poly HNO3 - 500mL |

Serial #: 01082016131729

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0179

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

| | |
|---|---|
| M | Poly Na2S2O3 - 125mL |
| N | Poly Unpres - 1000mL |
| O | Poly Unpres - 500mL |
| P | VOA Vial - H2SO4 |
| Q | VOA Vial - H2SO4 |

Serial #: 01082016131729

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0179

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6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/08/2016 13:17

## Notes and Definitions

| | |
|---|---|
| J-3 | The matrix spike recovery exceeded method acceptance limits indicating matrix interference. |
| J-2 | The laboratory control sample recovery exceeded method acceptance limits. |
| J2 | The MS/MSD failed to meet the established quality control criteria for either precision or accuracy due to high levels of target analytes;. However the Laboratory Control Spike is within QA/QC limits. |
| J-1 | Surrogate recovery limits have been exceeded. |
| J1 | The Matrix Spike and/or Matrix spike duplicate was outside control limits due to potential matrix interference. Batch is accepted on BKS/BSD recoveries within control limits. |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 01082016131729

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

Client: PSL - FPL St. Lucie Power Plant
Project: PSL - Grab Samples Permit Renewal 1

Project Manager: Chrissi-lee Williams
Project Number: PSL Permit Renewal Project

15L0179

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | 125mL Amber H3PO4+CuSO4 | 1 | SUB Phenols |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | 250mL Clear NaOH | 1 | SUB Cyanide |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | 40 mL Voa Vial - HCl | 2 | EPA 624 |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | 500mL Clear Glass - Unpres | 1 | SUB Low Level Mercury |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Amber H2SO4 - 1000mL | 1 | Wet Chem - Oil and Grease |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Amber Unpres - 1000mL | 2 | EPA 625 |

Lot Number of Preservative Used: FSE0613-$HNO_3$ Amount Used: .3mL Lot Number of Preservative Used: FS02118-$H_2SO_4$ Amount Used: 1.0mL

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Cert. Clean Bottles Lot #: FSJ2601-Amber Glass 1L
FSG2203-250mL Poly
FSH0504-1000mL Poly

REC IN ICE @ 5.1°C

Sarah C Daly 12/3/15 11:00
Relinquished By / Date/Time

Chrissi-Lee Williams 12/14/15
Relinquished By / Date/Time

Received By / Date/Time 12/14/15 1400

Sarah C Daly 12/14/15 16:15
Received By / Date/Time

Document Control #: 453 revision 0

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

| | | | |
|---|---|---|---|
| **Client:** | PSL - FPL St. Lucie Power Plant | **Project Manager:** | Chrissi-lee Williams |
| **Project:** | PSL - Grab Samples Permit Renewal 1 | **Project Number:** | PSL Permit Renewal Project |

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Plastic 250 mL - HN03 | 1 | ME - Antimony by 200.7<br>ME - Boron by EPA 200.7<br>ME - Molybdenum by EPA 200.7<br>ME - Tin by EPA 200.7<br>ME - Titanium by EPA 200.7 |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Poly H2SO4 - 250mL | 1 | Wet Chem - Ammonia_Distilled by EPA 350.1<br>Wet Chem - COD<br>Wet Chem - TKN by EPA 351.2<br>Wet Chem - Total Nitrogen<br>Wet Chem - Total Organic Nitrogen<br>Wet Chem - Total Phosphorus by SM4500-P F |

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

See page 1

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| Received By | Date/Time | Received By | Date/Time |

CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

Client: PSL - FPL St. Lucie Power Plant
Project: PSL - Grab Samples Permit Renewal 1

Project Manager: Chrissi-lee Williams
Project Number: PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Poly HNO3 - 250 mL | 1 | ME - Arsenic by 200.7<br>ME - Beryllium by 200.7<br>ME - Cadmium by 200.7<br>ME - Chromium by 200.7<br>ME - Copper Total 200.7<br>ME - Iron by 200.7<br>ME - Lead by 200.7<br>ME - Magnesium by 200.7<br>ME - Nickel by 200.7<br>ME - Selenium by 200.7<br>ME - Silver by 200.7<br>ME - Thallium by EPA 200.7<br>ME - Zinc by 200.7 |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Poly HNO3 - 500mL | 1 | SUB - EPA 900 |

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

See page 1

Relinquished By _____ Date/Time _____ Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____ Received By _____ Date/Time _____

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

Client: PSL - FPL St. Lucie Power Plant
Project: PSL - Grab Samples Permit Renewal 1

Project Manager: Chrissi-lee Williams
Project Number: PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1230 ~~1038~~ (JP) | JP | Poly Na2S2O3 - 125mL | 1 | SUB - Fecal Coliform by SM9222D |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Poly Unpres - 1000mL | 1 | SUB - Color by SM2120B<br>SUB - MBAS by SM5540C<br>SUB CBOD |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | Poly Unpres - 500mL | 1 | Wet Chem - Bromide<br>Wet Chem - Conductivity<br>Wet Chem - Fluoride<br>Wet Chem - Nitrate<br>Wet Chem - Nitrite<br>Wet Chem - Sulfate<br>Wet Chem - TSS |
| 01 | I-008 EP1- SE | Water | Grab | 12/14/15 | 1030 | JP | VOA Vial - H2SO4 | 2 | SUB - TOC |

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

See page 1

Relinquished By _____ Date/Time _____ Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____ Received By _____ Date/Time _____

Document Control #: 453 revision 0

15L0179

Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 12/14/15 16:15
Chain of Custody ID:
Initials: SO

Central Laboratory

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | Yes | No | N/A | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | N/A | |
| #3. Shipping container in good condition? | Yes | No | None | |
| #4. Chain of Custody (COC) present? | Yes | No | | |
| #5. COC signed when relinquished? | Yes | No | | |
| #6. Samples received in Ice? | Yes | No | N/A | |
| If NO? Temp = ____ °C | | | | |
| Temp = > 6°C? Management/customer notified? | Yes | No | Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | Yes | No | | |
| #8. Container label(s) legible and intact? | Yes | No | | |
| #9. Any missing/extra samples? | Yes | No | | |
| #10. COC signed when received? | Yes | No | | |
| #11. Sample analysis instructions complete on COC? | Yes | No | | |
| #12. Sample matrix/properties agree with COC? | Yes | No | | |
| #13. Samples in proper container/bottle? | Yes | No | | |
| #14. Sample container(s) intact? | Yes | No | | |
| #15. Samples have proper chemical preservation? | Yes | No | N/A | pH= 12 |
| If NO? a. Chemical preservation added:_____ | | | | |
| Lot#:_____ Amount added:_____ | | | | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| b. pH after 24 hours:_____ | | | | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| #16. Sufficient sample amount for indicated test(s)? | Yes | No | | |
| #17. All samples received within sufficient hold time (HT)? | Yes | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration? | Yes | No | N/A | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| #19. Subcontract of sample(s)? | Yes | No | | |
| #20. VOC samples have zero headspace? | Yes | No | N/A | |
| If NO? Bubble size (mm): | | | | |
| Sample ID:____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| #21. Trip blank received where volatiles requested? | Yes | No | N/A | |

Nonconformance Documentation

Customer:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action: _____

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

Document Control # 468 Revision 0 07/25/14

# FPL Central Lab
## List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative |
|---|---|---|---|
| I-008EP1-SE | G | 125mL | $H_3PO_4 + CuSO_4$ |
| | P | 250mL | NaOH |
| | G | 40mL | HCl |
| | G | " | " |
| | G | 500mL | ICE |
| | G | 1L | $H_2SO_4$ - |
| | G | " | ICE |
| | G | " | ICE |
| | P | 250mL | $HNO_3$ |
| | P | 250mL | $H_2SO_4$ - |
| | P | 250mL | $HNO_3$ - |
| | P | 500mL | $HNO_3$ |
| | P | 125mL | $Na_2S_2O_3$ - Fecal |
| | P | 1000mL | ICE |
| | P | 500mL | ICE - |
| | G | 40mL | $H_2SO_4$ |
| | G | " | " |
| | | | |
| | | | |
| | | | |

# LABORATORY RESULTS FOR WORK ORDER 15L0218

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
12/23/2015 15:37

**Client Sample ID: I-008 EP1- SE**
**Client Sample ID (cont):**
**Sampled: 12/16/2015 12:30:00PM Received: 12/16/2015 2:10:00PM**
**Lab Sample #: 15L0218-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Microbiology** | | | | | | | | | | | | | |
| **Fecal Coliforms** | 72 | | | 2 | 2 | CFU/100 ml | 2 | 1512475 | 12/16/2015 17:30 | SC | 12/17/2015 17:30 | SM 9222D | |

Serial #: 12232015153800

FPL Central Lab

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Tom Helton For Phoebe Brown, Central Lab Manager

# LABORATORY RESULTS FOR WORK ORDER 15L0218

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
12/23/2015 15:37

## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512475 - SM 9222D** | | | | | | | | | | | |
| **Blank (1512475-BLK1)** | | | Prepared: 12/16/2015 Analyzed: 12/17/2015 | | | | | | | | |
| Fecal Coliforms | ND | U | 1 | 1 | CFU/100 ml | | | | - | | |
| **Blank (1512475-BLK2)** | | | Prepared: 12/16/2015 Analyzed: 12/17/2015 | | | | | | | | |
| Fecal Coliforms | ND | U | 1 | 1 | CFU/100 ml | | | | - | | |

Serial #: 12232015153800

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0218

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**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
12/23/2015 15:37

**LIST OF BOTTLES RECEIVED**

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **15L0218-01 I-008 EP1- SE** | | |
| | A | Poly Na2S2O3 - 125mL |

Serial #: 12232015153800

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0218

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PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
12/23/2015 15:37

## Notes and Definitions

| | |
|---|---|
| U | Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit. |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 12232015153800

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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FPL

FPL Central Lab
6001A Village Blvd
West Palm Beach, FL 33407

# CHAIN-OF-CUSTODY FORM

SAMPLER:
PRINT
SIGN
TELEPHONE #

ENVIRO: X | NON-E:



INITIAL HERE:

ALL SAMPLES WERE TAKEN IN ACCORDANCE TO STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

SITE NAME/ADDRESS:
PSL - IWW Permit Renewal

CONTAINERS
(DESCRIBE SOURCE USING A-Z)

(IF OTHER INDICATE BELOW)
OTHER:

SAMPLING REQUIREMENTS

15L0218

ANALYSES REQUIRED/PRESERVATION

| SAMPLE NAME | DATE | TIME | *G/C | # | *MATRIX | Fecal Coliform (125mL Plastic Na2SO3 + ICE) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I-008 South East Pond | 12/16/15 | 1230 | G | 1 | WW | X | | | | | | | | |

SAMPLERS REMARKS: Rcvd in ice @ 5.6°C

SEND LAB REPORT TO:

| CLEAN SAMPLE CONTAINERS RELINQUISHED BY: | | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | CLEAN SAMPLE CONTAINERS RECEIVED BY: | | DATE | TIME | CUSTODY SEAL |
|---|---|---|---|---|---|---|---|---|---|---|
| RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |
| [signature] | Geosyntec | 12/16/15 | 1410 | N | Hand | [signature] | FPL | 12/16/15 | 1410 | N |
| RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |
| RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |

LAB REMARKS:

TEMP CHECK
PH CHECK

*GRAB OR COMPOSITE *# OF CONTAINERS *MATRIX: SOIL, WATER, OTHER

# LABORATORY RESULTS – OUTFALL I-06B

(FORM 2F)

# LABORATORY RESULTS FOR WORK ORDER 16A0064

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

**Client Sample ID: I-006B**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 4:15:00PM Received: 1/7/2016 3:50:00PM**
**Lab Sample #: 16A0064-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Chemical Oxygen Demand** | **19** | J1 | A | 3.1 | 12 | mg/L | 1 | F16A241 | 1/21/2016 12:29 | MV | 1/22/2016 9:14 | SM5220D | NELAC |
| **Nitrate as N** | **0.023** | | C | 0.0015 | 0.0061 | mg/L | 1 | F16A085 | 1/8/2016 10:37 | TEH | 1/8/2016 10:37 | EPA 300.0 | NELAC |
| Nitrite as N | U | | C | 0.00080 | 0.0031 | mg/L | 1 | F16A085 | 1/8/2016 10:37 | TEH | 1/8/2016 10:37 | EPA 300.0 | NELAC |
| **Phosphorus-Total** | **0.050** | V | A | 0.0034 | 0.025 | mg/L | 1 | F16A179 | 1/19/2016 14:27 | CMS | 1/19/2016 14:27 | SM4500-P F | NELAC |
| **Total Kjeldahl Nitrogen** | **0.26** | I | A | 0.18 | 0.75 | mg/L | 1 | F16A111 | 1/11/2016 10:11 | mv | 1/12/2016 10:19 | EPA 351.2 | NELAC |
| Total Suspended Solids | U | | C | 3.0 | 12 | mg/L | 1 | F16A104 | 1/11/2016 15:10 | MV | 1/11/2016 15:10 | SM2540 D | NELAC |
| **Analyzed at: Pace Analytical - NELAC Certification #: E86240** | | | | | | | | | | | | | |

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

Attn: Chrissi-lee Williams

**Client Sample ID: I-006B**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 4:15:00PM Received: 1/7/2016 3:50:00PM**
**Lab Sample #: 16A0064-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Pace Analytical - NELAC Certification #: E86240** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| BOD, 5 day | U | | | 4.0 | 4.0 | mg/L | 2 | 276065 | 1/8/2016 16:00 | EM1 | 1/13/2016 13:15 | SM 5210B | |

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A085 - EPA 300.0** | | | | | | | | | | | |
| **Blank (F16A085-BLK1)** | | | Prepared & Analyzed: 01/08/2016 | | | | | | | | |
| Nitrate as N | U | | 0.0015 | 0.0061 | mg/L | | | | | | |
| Nitrite as N | U | | 0.00080 | 0.0031 | mg/L | | | | | | |
| **LCS (F16A085-BS1)** | | | Prepared & Analyzed: 01/08/2016 | | | | | | | | |
| Nitrate as N | 5.25 | | | | mg/L | 5.000 | | 105 | 90-110 | | |
| Nitrite as N | 4.85 | | | | mg/L | 5.000 | | 97 | 90-110 | | |
| **LCS Dup (F16A085-BSD1)** | | | Prepared & Analyzed: 01/08/2016 | | | | | | | | |
| Nitrate as N | 5.24 | | | | mg/L | 5.000 | | 105 | 90-110 | 0.2 | 20 |
| Nitrite as N | 4.86 | | | | mg/L | 5.000 | | 97 | 90-110 | 0.1 | 20 |
| **Matrix Spike (F16A085-MS1)** | **Source: 16A0064-01** | | Prepared & Analyzed: 01/08/2016 | | | | | | | | |
| Nitrate as N | 2.57 | | | | mg/L | 2.500 | 0.0114 | 102 | 90-110 | | |
| Nitrite as N | 2.35 | | | | mg/L | 2.500 | U | 94 | 90-110 | | |
| **Matrix Spike (F16A085-MS2)** | **Source: 16A0029-01** | | Prepared & Analyzed: 01/08/2016 | | | | | | | | |
| Nitrate as N | 3.30 | | | | mg/L | 2.500 | 0.709 | 104 | 90-110 | | |
| Nitrite as N | 52.0 | J2, | | | mg/L | 2.500 | 38.7 | 533 | 90-110 | | |

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A085 - EPA 300.0** | | | | | | | | | | | |
| **Matrix Spike Dup (F16A085-MSD1)** | **Source: 16A0064-01** | | Prepared & Analyzed: 01/08/2016 | | | | | | | | |
| Nitrate as N | 2.55 | | | | mg/L | 2.500 | 0.0114 | 102 | 90-110 | 0.6 | 20 |
| Nitrite as N | 2.35 | | | | mg/L | 2.500 | U | 94 | 90-110 | 0.3 | 20 |
| **Batch F16A104 - SM2540 D** | | | | | | | | | | | |
| **Blank (F16A104-BLK1)** | | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | U | | 3.0 | 12 | mg/L | | | | | | |
| **LCS (F16A104-BS1)** | | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | 52.0 | | | | mg/L | 54.00 | | 96 | 80-120 | | |
| **LCS Dup (F16A104-BSD1)** | | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | 52.0 | | | | mg/L | 54.00 | | 96 | 80-120 | 0 | 20 |
| **Duplicate (F16A104-DUP1)** | **Source: 16A0063-01** | | Prepared & Analyzed: 01/11/2016 | | | | | | | | |
| Total Suspended Solids | 3.00 | I | 3.0 | 12 | mg/L | | U | | | | 5 |
| **Batch F16A111 - EPA 351.2** | | | | | | | | | | | |

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

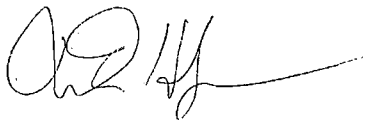
## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A111 - EPA 351.2** | | | | | | | | | | | |
| **Blank (F16A111-BLK1)** | | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | U | | 0.18 | 0.75 | mg/L | | | | | | |
| **LCS (F16A111-BS1)** | | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 1.93 | | 0.18 | 0.75 | mg/L | 1.998 | | 96 | 90-110 | | |
| **Matrix Spike (F16A111-MS1)** | **Source: 16A0064-01** | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 2.17 | | 0.18 | 0.75 | mg/L | 1.998 | 0.259 | 96 | 90-110 | | |
| **Matrix Spike (F16A111-MS2)** | **Source: 15L0391-01RE1** | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 27.9 | J2, | 1.8 | 7.5 | mg/L | 1.998 | 24.6 | 163 | 90-110 | | |
| **Matrix Spike Dup (F16A111-MSD1)** | **Source: 16A0064-01** | | Prepared: 01/11/2016 Analyzed: 01/12/2016 | | | | | | | | |
| Total Kjeldahl Nitrogen | 2.25 | | 0.18 | 0.75 | mg/L | 1.998 | 0.259 | 99 | 90-110 | 3 | 20 |
| **Batch F16A179 - SM4500-P F** | | | | | | | | | | | |
| **Blank (F16A179-BLK1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 0.00900 | I | 0.0034 | 0.025 | mg/L | | | | | | |

Serial #: 01222016101441

FPL Central Lab



Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A179 - SM4500-P F** | | | | | | | | | | | |
| **LCS (F16A179-BS1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 1.35 | | | | mg/L | 1.330 | | 101 | 90-110 | | |
| **LCS Dup (F16A179-BSD1)** | | | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 1.33 | | | | mg/L | 1.330 | | 100 | 90-110 | 1 | 20 |
| **Matrix Spike (F16A179-MS1)** | | **Source: 16A0032-01** | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 0.267 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.00500 | 106 | 90-110 | | |
| **Matrix Spike Dup (F16A179-MSD1)** | | **Source: 16A0032-01** | Prepared & Analyzed: 01/19/2016 | | | | | | | | |
| Phosphorus-Total | 0.264 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.00500 | 104 | 90-110 | 1 | 20 |
| **Batch F16A241 - SM5220D** | | | | | | | | | | | |
| **Blank (F16A241-BLK1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | U | | 3.1 | 12 | mg/L | | | | | | |
| **LCS (F16A241-BS1)** | | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 55.0 | | | | mg/L | 52.80 | | 104 | 95-105 | | |

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A241 - SM5220D** | | | | | | | | | | | |
| **Matrix Spike (F16A241-MS1)** | **Source: 16A0064-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 43.7 | J1, | 3.1 | 12 | mg/L | 26.40 | 19.3 | 92 | 95-105 | | |
| **Matrix Spike Dup (F16A241-MSD1)** | **Source: 16A0064-01** | | Prepared: 01/21/2016 Analyzed: 01/22/2016 | | | | | | | | |
| Chemical Oxygen Demand | 41.0 | J1, | 3.1 | 12 | mg/L | 26.40 | 19.3 | 82 | 95-105 | 6 | 20 |

Serial #: 0122016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

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**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

## Wet Chemistry - Quality Control

**Analyzed at: Pace Analytical - NELAC Certification #: E86240**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 276065 - SM 5210B** | | | | | | | | | | | |
| **BLANK (1446292)** | **Source: 1446292** | | Prepared: 01/08/2016 Analyzed: 01/13/2016 | | | | | | | | |
| BOD, 5 day | U | J(B3) | 2.0 | 2.0 | mg/L | | | | - | | |
| **LCS (1446293)** | **Source: 1446293** | | Prepared: 01/08/2016 Analyzed: 01/13/2016 | | | | | | | | |
| BOD, 5 day | 190 | | 2.0 | 2.0 | mg/L | 198 | | 96 | 85-115 | | |
| **DUP (1446294)** | **Source: 35223861001** | | Prepared: 01/08/2016 Analyzed: 01/13/2016 | | | | | | | | |
| BOD, 5 day | U | | 2.0 | 2.0 | mg/L | | 1.6 | | - | | 20 |

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

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**6001A Village Blvd.**
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**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **16A0064-01 I-006B** | | |
| | A | Poly H2SO4 - 250mL |
| | B | Poly Unpres - 1000mL |
| | C | Poly Unpres - 500mL |

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0064

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6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 10:14

## Notes and Definitions

| | |
|---|---|
| J2 | The MS/MSD failed to meet the established quality control criteria for either precision or accuracy due to high levels of target analytes;. However the Laboratory Control Spike is within QA/QC limits. |
| J1 | The Matrix Spike and/or Matrix spike duplicate was outside control limits due to potential matrix interference. Batch is accepted on BKS/BSD recoveries within control limits. |
| J(B3) | Estimated value. The dissolved oxygen depletion of the dilution water blank exceeded 0.2 mg/L. |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 01222016101441

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

16A0064

Client: PSL - FPL St. Lucie Power Plant
Project: PSL - I-006 Stormwater Permit Renew
Project Manager: Chrissi-lee Williams
Project Number: PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I-006B | Water | Grab | | | | Poly H2SO4 - 250mL | 1 | Wet Chem - COD<br>Wet Chem - TKN by EPA 351.2<br>Wet Chem - Total Phosphorus by SM4500-P F |
| 01 | I-006B | Water | Grab | | | | Poly Unpres - 1000mL | 1 | SUB - BOD 5 |
| 01 | I-006B | Water | Grab | | | | Poly Unpres - 500mL | 1 | Wet Chem - Nitrate<br>Wet Chem - Nitrite<br>Wet Chem - TSS |
| | | | | | | | | | |
| | | | | | | | | | |

Clean Bottles: F5K1203, F5H0504

Lot Number of Preservative Used: F5D2118 Amount Used: 0.5 mL Lot Number of Preservative Used: _____ Amount Used: _____

Lot Number of Preservative Used: _____ Amount Used: _____ Lot Number of Preservative Used: _____ Amount Used: _____

| Relinquished By | Date/Time | Relinquished By | Date/Time |
|---|---|---|---|
| [signature] | 1/7/16 15:50 | [signature] | 1/7/16 15:50 |
| Received By | Date/Time | Received By | Date/Time |
| | | | |

Document Control #: 453 revision 0



Rec in ice @ 5.8°C

16A00604

Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 1/7/16 15:50
Chain of Custody ID:
Initials: SD

Central Laboratory

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | Yes | No | N/A | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | N/A | |
| #3. Shipping container in good condition? | Yes | No | None | |
| #4. Chain of Custody (COC) present? | Yes | No | | |
| #5. COC signed when relinquished? | Yes | No | | |
| #6. Samples received in ice? | Yes | No | N/A | |
| If NO? Temp = ____ °C | | | | |
| Temp = > 6°C? Management/customer notified? | Yes | No | Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | Yes | No | | |
| #8. Container label(s) legible and intact? | Yes | No | | |
| #9. Any missing/extra samples? | Yes | No | | |
| #10. COC signed when received? | Yes | No | | |
| #11. Sample analysis instructions complete on COC? | Yes | No | | |
| #12. Sample matrix/properties agree with COC? | Yes | No | | |
| #13. Samples in proper container/bottle? | Yes | No | | |
| #14. Sample container(s) intact? | Yes | No | | |
| #15. Samples have proper chemical preservation? | Yes | No | N/A | pH= <2 |
| If NO? a. Chemical preservation added:____ | | | | |
| Lot#:____ Amount added:____ | | | | |
| Date:____ Time:____ Initials:____ | | | | |
| b. pH after 24 hours:____ | | | | |
| Date:____ Time:____ Initials:____ | | | | |
| #16. Sufficient sample amount for indicated test(s)? | Yes | No | | |
| #17. All samples received within sufficient hold time (HT)? | Yes | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration? | Yes | No | N/A | |
| Date:____ Time:____ Initials:____ | | | | |
| #19. Subcontract of sample(s)? | Yes | No | | |
| #20. VOC samples have zero headspace? | Yes | No | N/A | |
| If NO? Bubble size (mm): | | | | |
| Sample ID:____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| #21. Trip blank received where volatiles requested? | Yes | No | N/A | |

Nonconformance Documentation

Customer:____ Contacted by:____ Date/Time:____

Regarding: Sample date/times on sample labels

Corrective Action: Poly $H_2SO_4$ 250mL: 1/6/16 @ 16:15
Poly Unpreserved 1000mL: 1/6/16 @ 16:15
Poly Unpreserved 500mL: 1/6/16 @ 16:15

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

# FPL Central Lab
## List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative |
|---|---|---|---|
| I-006B | P | 250mL | $H_2SO_4$ |
| | | 1000mL | ICE |
| | | 500mL | ICE |
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16A0380

# CHAIN-OF-CUSTODY FORM

NEE

| Site Name and Address: 6501 S. Ocean Dr. Jensen Beach FL 34957 | Sampler PRINT & SIGN: Telephone Number: 772-465-3550 x David Taylor | Page 1 of 1 |
|---|---|---|
| Containers (Describe and identify source using A-Z): 1 Glass Quart Jar | Check Below: ✓ All samples were taken in accordance to State Department of Environmental Protection sampling requirements (if other please indicate below) Other: | |

Sample Container Source:

Analyses Required/ Preservation

| Sample Number | Sample Location | Date | Time | Grab (G) or Composite (C) | MATRIX (S=Soil; W=Water; SS=Saline; GW=Ground Water; SD=Sediment; SW = Surface Water; O = Other (Describe in remarks)) | No. of Containers | O & G |
|---|---|---|---|---|---|---|---|
| 16-E-06 | A1A Run Off | 1-14-16 | 1600 | G | W | 1 | 1 |

Remarks:
Please Charge To Account # 031492 000060 693
O & G has $H_2SO_4$ inside

Send Lab Report To:
Dennis Harte
Howard Cosgrove
Sue Bromstrup

| Clean Sample Containers Relinquished By: | Date/Time | Custody Seal(s) Intact? | Method of Shipment: | Clean Sample Containers Received By: | Date/Time | Custody Seal(s) Intact? |
|---|---|---|---|---|---|---|
| Relinquished By: | Date/Time 1/20/16 ca 09:30 | Custody Seal(s) Intact? N/A | Method of Shipment: Hand | Received By: | Date/Time 1/20/16 09:30 | Custody Seal(s) Intact? N/A |
| Relinquished By: | Date/Time 1/20/16 10:45 | Custody Seal(s) Intact? N/A | Method of Shipment: Hand | Received By: | Date/Time 1/20/16 10:45 | Custody Seal(s) Intact? N/A |
| Relinquished By: | Date/Time | Custody Seal(s) Intact? | Method of Shipment: | Received By: | Date/Time | Custody Seal(s) Intact? |

Laboratory Remarks:
Cooler Temperature: Received in ICE @ 2.4°C

pH<2 check ✓
Temp check ✓

# LABORATORY RESULTS FOR WORK ORDER 16A0331

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/14/2016 17:49

**Client Sample ID: I-006B**
**Client Sample ID (cont):**
**Sampled: 1/6/2016 4:15:00PM Received: 1/14/2016 3:58:00PM**
**Lab Sample #: 16A0331-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Oil & Grease (HEM)** | **1.0** | I | A | 1.0 | 4.1 | mg/L | 1 | F16A156 | 1/14/2016 13:47 | MV | 1/14/2016 13:47 | EPA 1664A | NELAC |

Serial #: 01142016174944

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 16A0331

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/14/2016 17:49

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A156 - EPA 1664A** | | | | | | | | | | | |
| **Blank (F16A156-BLK1)** | | | Prepared & Analyzed: 01/14/2016 | | | | | | | | |
| Oil & Grease (HEM) | U | | 1.0 | 4.1 | mg/L | | | | | | |
| **LCS (F16A156-BS1)** | | | Prepared & Analyzed: 01/14/2016 | | | | | | | | |
| Oil & Grease (HEM) | 38.7 | | | | mg/L | 40.00 | | 97 | 78-114 | | |
| **LCS Dup (F16A156-BSD1)** | | | Prepared & Analyzed: 01/14/2016 | | | | | | | | |
| Oil & Grease (HEM) | 40.7 | | | | mg/L | 40.00 | | 102 | 78-114 | 5 | 18 |

Serial #: 01142016174944

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 16A0331

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/14/2016 17:49

**LIST OF BOTTLES RECEIVED**

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **16A0331-01 I-006B** | | |
| | A | Wide-Mouth H2SO4 - 1000mL |

Serial #: 01142016174944

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 16A0331

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/14/2016 17:49

## Notes and Definitions

| | |
|---|---|
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 01142016174944

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

FPL.

**FPL Central Lab**
**6001A Village Blvd**
**West Palm Beach, FL 33407**

# CHAIN-OF-CUSTODY FORM

ENVIRO | NON-E

1604331

PAGE OF

SAMPLER: Roger Cuzco
PRINT
SIGN
TELEPHONE # 772-465-3550

INITIAL HERE: RC

ALL SAMPLES WERE TAKEN IN ACCORDANCE TO STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION SAMPLING REQUIREMENTS

SITE NAME/ADDRESS: PSL Nuclear

(IF OTHER INDICATE BELOW)
OTHER:

CONTAINERS
(DESCRIBE SOURCE USING A-Z)

ANALYSES REQUIRED/PRESERVATION

| SAMPLE NAME | DATE | TIME (W) | *G/C | # | *MATRIX | 0.1% Glutaral / H2SO4 |
|---|---|---|---|---|---|---|
| I-00613 | 01/06/16 | 16:55 | G | 1 | Water | ✓ |

SAMPLERS REMARKS: Taken 1/6/16 - RUSH

SEND LAB REPORT TO:

| CLEAN SAMPLE CONTAINERS RELINQUISHED BY: | | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | CLEAN SAMPLE CONTAINERS RECEIVED BY: | | DATE | TIME | CUSTODY SEAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1/14/16 | 15:53 | | | Jack C Ortiz | FPL | 1/14/16 | 15:58 | N/A |
| RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |
| RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |
| RELINQUISHED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL | SHIPMENT METHOD | RECEIVED BY: | AFFILIATION: | DATE | TIME | CUSTODY SEAL |

LAB REMARKS:

TEMP CHECK
PH CHECK

*G=GRAB OR C=COMPOSITE *# OF CONTAINERS *MATRIX: SOIL, WATER, OTHER

REC IN ICE 4.9°C

16A0331

Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 1/14/16 15:58
Chain of Custody ID: _____
Initials: SD

Central Laboratory

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | Yes | No | N/A | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | N/A | |
| #3. Shipping container in good condition? | Yes | No | None | |
| #4. Chain of Custody (COC) present? | Yes | No | | |
| #5. COC signed when relinquished? | Yes | No | | |
| #6. Samples received in ice? | Yes | No | N/A | |
| If NO? Temp = ____ °C | | | | |
| Temp = > 6°C? Management/customer notified? | Yes | No | Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | Yes | No | | |
| #8. Container label(s) legible and intact? | Yes | No | | |
| #9. Any missing/extra samples? | Yes | No | | |
| #10. COC signed when received? | Yes | No | | |
| #11. Sample analysis instructions complete on COC? | Yes | No | | |
| #12. Sample matrix/properties agree with COC? | Yes | No | | |
| #13. Samples in proper container/bottle? | Yes | No | | |
| #14. Sample container(s) intact? | Yes | No | | |
| #15. Samples have proper chemical preservation? | Yes | No | N/A | pH= |
| If NO? a. Chemical preservation added:_____ | | | | |
| Lot#:_____ Amount added:_____ | | | | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| b. pH after 24 hours:_____ | | | | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| #16. Sufficient sample amount for indicated test(s)? | Yes | No | | |
| #17. All samples received within sufficient hold time (HT)? | Yes | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration? | Yes | No | N/A | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| #19. Subcontract of sample(s)? | Yes | No | | |
| #20. VOC samples have zero headspace? | Yes | No | N/A | |
| If NO? Bubble size (mm): | | | | |
| Sample ID:____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| ____ a.____ b.____ c.____ d.____ | | | | |
| #21. Trip blank received where volatiles requested? | Yes | No | N/A | |

Nonconformance Documentation

Customer:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

_____

Corrective Action: _____

_____

_____

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

Document Control # 468 Revision 0 07/25/14

# FPL Central Lab
## List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative |
|---|---|---|---|
| I-006 B | Wm Clear Glass | 1L | $H_2SO_4$ |
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16A0380

# CHAIN-OF-CUSTODY FORM

NEE

| Site Name and Address: | Sampler PRINT & SIGN: | Page 1 of 1 |
|---|---|---|
| 6501 S. Ocean Dr. Jensen Beach FL 34957 | Telephone Number: 772-465-3550 x David Taylor | |

Containers (Describe and identify source using A-Z):

1 Glass Quart Jar

Check Below:
✓ All samples were taken in accordance to State Department of Environmental Protection sampling requirements (if other please indicate below)
Other:

Sample Container Source:

Analyses Required/ Preservation

| Sample Number | Sample Location | Date | Time | Grab (G) or Composite (C) | MATRIX (S=Soil; W=Water; SS=Saline; GW=Ground Water; SD=Sediment; SW = Surface Water; O = Other (Describe in remarks)) | No. of Containers | O & G |
|---|---|---|---|---|---|---|---|
| 16-E-06 | A1A Run Off | 1-14-16 | 1600 | G | W | 1 | 1 |

Remarks:
Please Charge To Account # 031492 000060 693
O & G has $H_2SO_4$ inside

Send Lab Report To:
Dennis Harte
Howard Cosgrove
Sue Bromstrup

| Clean Sample Containers Relinquished By: | Date/Time | Custody Seal(s) Intact? | Method of Shipment: | Clean Sample Containers Received By: | Date/Time | Custody Seal(s) Intact? |
|---|---|---|---|---|---|---|
| Relinquished By: | Date/Time 1/20/16 ceb | Custody Seal(s) Intact? N/A | Method of Shipment: Hand | Received By: | Date/Time 1/20/16 09:30 | Custody Seal(s) Intact? N/A |
| Relinquished By: 1/20/16 10:45 | Date/Time | Custody Seal(s) Intact? N/A | Method of Shipment: Hand | Received By: | Date/Time 1/20/16 1045 | Custody Seal(s) Intact? N/A |
| Relinquished By: | Date/Time | Custody Seal(s) Intact? | Method of Shipment: | Received By: | Date/Time | Custody Seal(s) Intact? |

Laboratory Remarks:
Cooler Temperature: Rcvd in ICE @ 2.4°C

pH<2 check ✓
Temp check ✓

# FPL Central Lab
# List of Bottles Received

| Sample Name | Type of Bottle | Size of bottle | Preservative |
|---|---|---|---|
| A1A Runoff | G | 1L | $H_2SO_4$ |
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Prelogin / Nonconformance Report - Sample Log-In
LIMS - Water, Soil, TCLP and PCB Oil Samples

Date/Time: 01/20/16 1045
Chain of Custody ID: 16A0380
Initials: MM

Central Laboratory

Sample Receipt Checklist:

| | | | | |
|---|---|---|---|---|
| #1. Custody seals intact on shipping container/cooler? | Yes | No | (N/A) | |
| #2. Custody seals intact on sample bottles/container? | Yes | No | (N/A) | |
| #3. Shipping container in good condition? | (Yes) | No | None | |
| #4. Chain of Custody (COC) present? | (Yes) | No | | |
| #5. COC signed when relinquished? | (Yes) | No | | |
| #6. Samples received in Ice? 2.4°C<br>If NO? Temp = ____ °C | (Yes) | No | N/A | |
| Temp = > 6°C? Management/customer notified? | Yes | No | Notate Below | |
| #7. COC agrees with sample label(s)? Ex: Sample ID, Dates, Times, etc... | (Yes) | No | | |
| #8. Container label(s) legible and intact? | (Yes) | No | | |
| #9. Any missing/extra samples? | Yes | (No) | | |
| #10. COC signed when received? | (Yes) | No | | |
| #11. Sample analysis instructions complete on COC? | (Yes) | No | | |
| #12. Sample matrix/properties agree with COC? | (Yes) | No | | |
| #13. Samples in proper container/bottle? | (Yes) | No | | |
| #14. Sample container(s) intact? | (Yes) | No | | |
| #15. Samples have proper chemical preservation? | (Yes) | No | N/A | pH= $H_2SO_4$ |
| If NO? a. Chemical preservation added:_____<br>Lot#:_____ Amount added:_____<br>Date:_____ Time:_____ Initials:_____<br>b. pH after 24 hours:_____<br>Date:_____ Time:_____ Initials:_____ | | | | |
| #16. Sufficient sample amount for indicated test(s)? | (Yes) | No | | |
| #17. All samples received within sufficient hold time (HT)? | (Yes) | No | | |
| #18. Chemist notified of sample(s) with imminent HT expiration? | Yes | No | (N/A) | |
| Date:_____ Time:_____ Initials:_____ | | | | |
| #19. Subcontract of sample(s)? | Yes | (No) | | |
| #20. VOC samples have zero headspace? | Yes | No | (N/A) | |
| If NO? Bubble size (mm):<br>Sample ID:____ a.____ b.____ c.____ d.____<br>____ a.____ b.____ c.____ d.____<br>____ a.____ b.____ c.____ d.____<br>____ a.____ b.____ c.____ d.____<br>____ a.____ b.____ c.____ d.____<br>____ a.____ b.____ c.____ d.____ | | | | |
| #21. Trip blank received where volatiles requested? | Yes | No | (N/A) | |

Nonconformance Documentation

Customer:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

_____

Corrective Action: _____

_____

_____

Check all that apply: ☐ Client understands and would like to proceed with analysis.
☐ Cooling process had begun shortly after sampling event.

Document Control # 468 Revision 0 07/25/14

# LABORATORY RESULTS – OUTFALL I-06C

(FORM 2F)

# LABORATORY RESULTS FOR WORK ORDER 15L0353

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

**Client Sample ID: I-006C**
**Client Sample ID (cont):**
**Sampled: 12/18/2015 2:15:00PM Received: 12/18/2015 4:46:00PM**
**Lab Sample #: 15L0353-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: Florida-Spectrum Environmental Services, Inc** | | | | | | | | | | | | | |
| **Microbiology** | | | | | | | | | | | | | |
| Biochemical Oxygen Demand | U | | | 2.00 | 6.00 | mg/L | 1 | 1512566 | 12/18/2015 18:15 | SC | 12/23/2015 18:15 | BOD SM5210B | |
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Chemical Oxygen Demand** | **28** | | A | 3.1 | 12 | mg/L | 1 | F15L500 | 12/31/2015 8:51 | CMS | 12/31/2015 13:21 | SM5220D | NELAC |
| **Nitrate as N** | **0.34** | | C | 0.0015 | 0.0061 | mg/L | 1 | F15L314 | 12/18/2015 18:55 | MV | 12/18/2015 18:55 | EPA 300.0 | NELAC |
| Nitrite as N | U | | C | 0.00080 | 0.0031 | mg/L | 1 | F15L314 | 12/18/2015 18:55 | MV | 12/18/2015 18:55 | EPA 300.0 | NELAC |
| **Phosphorus-Total** | **0.23** | | A | 0.0034 | 0.025 | mg/L | 1 | F15L479 | 12/31/2015 9:31 | CMS | 12/31/2015 9:31 | SM4500-P F | NELAC |

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reporduced in its entirety. All analyses were performed using EPA methods and certified to meet NELAC requirements.*

# LABORATORY RESULTS FOR WORK ORDER 15L0353

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

**Client Sample ID: I-006C**
**Client Sample ID (cont):**
**Sampled: 12/18/2015 2:15:00PM Received: 12/18/2015 4:46:00PM**
**Lab Sample #: 15L0353-01 Sample Matrix: Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Total Kjeldahl Nitrogen** | **0.79** | | A | 0.18 | 0.75 | mg/L | 1 | F15L400 | 12/28/2015 7:55 | CMS | 12/29/2015 12:05 | EPA 351.2 | NELAC |
| **Total Suspended Solids** | **8.0** | I | C | 3.0 | 12 | mg/L | 1 | F15L348 | 12/22/2015 13:00 | CMS | 12/22/2015 13:00 | SM2540 D | NELAC |

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0353

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

Attn: Chrissi-lee Williams

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L314 - EPA 300.0** | | | | | | | | | | | |
| **Blank (F15L314-BLK1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Nitrate as N | U | | 0.0015 | 0.0061 | mg/L | | | | | | |
| Nitrite as N | U | | 0.00080 | 0.0031 | mg/L | | | | | | |
| **LCS (F15L314-BS1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Nitrate as N | 5.42 | | | | mg/L | 5.000 | | 108 | 90-110 | | |
| Nitrite as N | 5.32 | | | | mg/L | 5.000 | | 106 | 90-110 | | |
| **LCS Dup (F15L314-BSD1)** | | | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Nitrate as N | 5.43 | | | | mg/L | 5.000 | | 109 | 90-110 | 0.1 | 20 |
| Nitrite as N | 5.32 | | | | mg/L | 5.000 | | 106 | 90-110 | 0.05 | 20 |
| **Matrix Spike (F15L314-MS1)** | | **Source: 15L0353-01** | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Nitrate as N | 2.77 | | | | mg/L | 2.500 | 0.168 | 104 | 90-110 | | |
| Nitrite as N | 2.31 | | | | mg/L | 2.500 | U | 92 | 90-110 | | |
| **Matrix Spike Dup (F15L314-MSD1)** | | **Source: 15L0353-01** | Prepared & Analyzed: 12/18/2015 | | | | | | | | |
| Nitrate as N | 2.78 | | | | mg/L | 2.500 | 0.168 | 105 | 90-110 | 0.5 | 20 |
| Nitrite as N | 2.34 | | | | mg/L | 2.500 | U | 93 | 90-110 | 1 | 20 |

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0353

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L314 - EPA 300.0** | | | | | | | | | | | |
| **Batch F15L348 - SM2540 D** | | | | | | | | | | | |
| **Blank (F15L348-BLK1)** | | | Prepared & Analyzed: 12/22/2015 | | | | | | | | |
| Total Suspended Solids | U | | 3.0 | 12 | mg/L | | | | | | |
| **LCS (F15L348-BS1)** | | | Prepared & Analyzed: 12/22/2015 | | | | | | | | |
| Total Suspended Solids | 46.0 | | | | mg/L | 54.00 | | 85 | 80-120 | | |
| **LCS Dup (F15L348-BSD1)** | | | Prepared & Analyzed: 12/22/2015 | | | | | | | | |
| Total Suspended Solids | 45.0 | | | | mg/L | 54.00 | | 83 | 80-120 | 2 | 20 |
| **Duplicate (F15L348-DUP1)** | **Source: 15L0373-01** | | Prepared & Analyzed: 12/22/2015 | | | | | | | | |
| Total Suspended Solids | 4.00 | I | 3.0 | 12 | mg/L | | 3.00 | | | 29 | 5 |
| **Batch F15L400 - EPA 351.2** | | | | | | | | | | | |
| **Blank (F15L400-BLK1)** | | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | U | | 0.18 | 0.75 | mg/L | | | | | | |
| **LCS (F15L400-BS1)** | | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |

Serial #: 01032016105517

FPL Central Lab

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# LABORATORY RESULTS FOR WORK ORDER 15L0353

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Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L400 - EPA 351.2** | | | | | | | | | | | |
| **LCS (F15L400-BS1)** | | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | 1.98 | | 0.18 | 0.75 | mg/L | 1.998 | | 99 | 90-110 | | |
| **Matrix Spike (F15L400-MS1)** | **Source: 15L0179-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | 3.03 | | 0.18 | 0.75 | mg/L | 1.998 | 0.883 | 107 | 90-110 | | |
| **Matrix Spike Dup (F15L400-MSD1)** | **Source: 15L0179-01** | | Prepared: 12/28/2015 Analyzed: 12/29/2015 | | | | | | | | |
| Total Kjeldahl Nitrogen | 2.95 | | 0.18 | 0.75 | mg/L | 1.998 | 0.883 | 103 | 90-110 | 3 | 20 |
| **Batch F15L479 - SM4500-P F** | | | | | | | | | | | |
| **Blank (F15L479-BLK1)** | | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Phosphorus-Total | U | | 0.0034 | 0.025 | mg/L | | | | | | |
| **LCS (F15L479-BS1)** | | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Phosphorus-Total | 0.242 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 98 | 90-110 | | |
| **LCS Dup (F15L479-BSD1)** | | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Phosphorus-Total | 0.252 | | 0.0034 | 0.025 | mg/L | 0.2480 | | 102 | 90-110 | 4 | 20 |

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0353

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F15L479 - SM4500-P F** | | | | | | | | | | | |
| **Matrix Spike (F15L479-MS1)** | **Source: 15L0353-01** | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Phosphorus-Total | 0.483 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.226 | 104 | 90-110 | | |
| **Matrix Spike Dup (F15L479-MSD1)** | **Source: 15L0353-01** | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Phosphorus-Total | 0.479 | | 0.0034 | 0.025 | mg/L | 0.2480 | 0.226 | 102 | 90-110 | 2 | 20 |
| **Batch F15L500 - SM5220D** | | | | | | | | | | | |
| **Blank (F15L500-BLK1)** | | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | U | | 3.1 | 12 | mg/L | | | | | | |
| **LCS (F15L500-BS1)** | | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | 40.8 | | | | mg/L | 39.60 | | 103 | 95-105 | | |
| **Matrix Spike (F15L500-MS1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | 35.5 | | | | mg/L | 19.80 | 15.0 | 104 | 95-105 | | |
| **Matrix Spike Dup (F15L500-MSD1)** | **Source: 15L0179-01** | | Prepared & Analyzed: 12/31/2015 | | | | | | | | |
| Chemical Oxygen Demand | 32.9 | J1, | | | mg/L | 19.80 | 15.0 | 91 | 95-105 | 8 | 20 |

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0353

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

## Microbiology - Quality Control

**Analyzed at: Florida-Spectrum Environmental Services, Inc**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1512566 - BOD SM5210B** | | | | | | | | | | | |
| **Blank (1512566-BLK1)** | | | Prepared: 12/18/2015 Analyzed: 12/23/2015 | | | | | | | | |
| Biochemical Oxygen Demand | U | | 2.00 | 6.00 | mg/L | | | | - | | |
| **LCS (1512566-BS1)** | | | Prepared: 12/18/2015 Analyzed: 12/23/2015 | | | | | | | | |
| Biochemical Oxygen Demand | 182 | | 2.00 | 6.00 | mg/L | 198.0 | | 91.9 | 85-115 | | |
| **LCS Dup (1512566-BSD1)** | | | Prepared: 12/18/2015 Analyzed: 12/23/2015 | | | | | | | | |
| Biochemical Oxygen Demand | 181 | | 2.00 | 6.00 | mg/L | 198.0 | | 91.4 | 85-115 | 0.551 | 20 |

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0353

FPL Central Laboratory
6001A Village Blvd.
West Palm Beach, FL 33407
Phone: 561-640-2055

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **15L0353-01 I-006C** | | |
| | A | Poly H2SO4 - 500mL |
| | B | Poly Unpres - 1000mL |
| | C | Poly Unpres - 500mL |

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 15L0353

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/03/2016 10:55

## Notes and Definitions

| | |
|---|---|
| J1 | The Matrix Spike and/or Matrix spike duplicate was outside control limits due to potential matrix interference. Batch is accepted on BKS/BSD recoveries within control limits. |
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 01032016105517

FPL Central Lab

Tom Helton For Phoebe Brown, Central Lab Manager

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**CHAIN OF CUSTODY / BOTTLE ORDER**

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - I-006 Stormwater Permit Renev
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

15L0353

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 01 | I-006B | Water | Grab | NA | | | Poly H2SO4 - 500mL | 1 | Wet Chem - COD<br>Wet Chem - Total Phosphorus by SM4500-P F |
| 01 | I-006B | Water | Grab | | | | Poly Unpres - 1000mL | 1 | SUB - BOD 5 |
| 01 | I-006B | Water | Grab | | | | Poly Unpres - 500mL | 1 | Wet Chem - Nitrate<br>Wet Chem - Nitrite<br>Wet Chem - TSS |
| 02 | I-006C | Water | Grab | 12/18/15 | 1415 | BB | Poly H2SO4 - 500mL | 1 | Wet Chem - COD<br>Wet Chem - Total Phosphorus by SM4500-P F |
| 02 | I-006C | Water | Grab | " | " | " | Poly Unpres - 1000mL | 1 | SUB - BOD 5 |

Certified Clean Bottles: F5K1503 500mL
F5H0504 1000mL

**Lot Number of Preservative Used:** F5D2118 **Amount Used:** 1.5mL **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

In ICE @ 2.7°C

Page 10 of 11

Relinquished By: Koch & Daly Date/Time: 11/12/15 15:40
Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: 12/18/15 16:46
Received By: _____ Date/Time: 12/18/15 1646

Document Control #: 453 revision 0

## CHAIN OF CUSTODY / BOTTLE ORDER

6001A Village Blvd
West Palm Beach, FL 33407

**Client:** PSL - FPL St. Lucie Power Plant
**Project:** PSL - I-006 Stormwater Permit Renev
**Project Manager:** Chrissi-lee Williams
**Project Number:** PSL Permit Renewal Project

| Number | Sample Identification | Matrix | Type | Date Sampled | Time Sampled | Sampled By | Container | Qty | Analyses |
|---|---|---|---|---|---|---|---|---|---|
| 02 | I-006C | Water | Grab | 12/8/15 | 1415 | BB | Poly Unpres - 500mL | 1 | Wet Chem - Nitrate<br>Wet Chem - Nitrite<br>Wet Chem - TSS |

page 1

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

**Lot Number of Preservative Used:** _____ **Amount Used:** _____ **Lot Number of Preservative Used:** _____ **Amount Used:** _____

Page 11 of 11

_____ _____ _____ _____
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_____ _____ _____ _____
eceived By Date/Time Received By Date/Time

Document Control #: 453 revision 0

# LABORATORY RESULTS FOR WORK ORDER 16A0380

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 16:40

**Client Sample ID: A1A Runnoff**
**Client Sample ID (cont): 16-E-06**
**Sampled: 1/14/2016 4:00:00PM Received: 1/20/2016 10:45:00AM**
**Lab Sample #: 16A0380-01 Sample Matrix: Surface Water**

| Analyte | Result | Qualifier | Bottle Used | MDL | PQL | Units | Dilution | Batch | Prepared | Analyst | Analyzed | Method | Certification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyzed at: FPL Central Lab** | | | | | | | | | | | | | |
| **Wet Chemistry** | | | | | | | | | | | | | |
| **Oil & Grease (HEM)** | **1.0** | I | A | 1.0 | 4.1 | mg/L | 1 | F16A262 | 1/22/2016 10:28 | MV | 1/22/2016 10:28 | EPA 1664A | NELAC |

Serial #: 01222016164011

FPL Central Lab

Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0380

**FPL Central Laboratory**
**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 16:40

## Wet Chemistry - Quality Control

**Analyzed at: FPL Central Lab**

| Analyte | Result | Qualifiers | MDL | PQL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch F16A262 - EPA 1664A** | | | | | | | | | | | |
| **Blank (F16A262-BLK1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Oil & Grease (HEM) | U | | 1.0 | 4.1 | mg/L | | | | | | |
| **LCS (F16A262-BS1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Oil & Grease (HEM) | 37.0 | | | | mg/L | 40.00 | | 92 | 78-114 | | |
| **LCS Dup (F16A262-BSD1)** | | | Prepared & Analyzed: 01/22/2016 | | | | | | | | |
| Oil & Grease (HEM) | 37.5 | | | | mg/L | 40.00 | | 94 | 78-114 | 1 | 18 |

Serial #: 01222016164011

FPL Central Lab

Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0380

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**6001A Village Blvd.**
**West Palm Beach, FL 33407**
**Phone: 561-640-2055**

PSL - FPL St. Lucie Power Plant
6501 South Ocean Drive
Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 16:40

## LIST OF BOTTLES RECEIVED

| Lab Number and Client Sample ID | Bottle ID | Container Type |
|---|---|---|
| **16A0380-01 A1A Runnoff** | | |
| | A | Amber Glass H2SO4 - 1000 mL |

Serial #: 01222016164011

FPL Central Lab

Phoebe Brown, Central Lab Manager

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# LABORATORY RESULTS FOR WORK ORDER 16A0380

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Jensen Beach FL, 34957

Attn: Chrissi-lee Williams

NELAC Certification #: E56078

**Reported:**
01/22/2016 16:40

## Notes and Definitions

| | |
|---|---|
| + | Not NELAC Certified |
| I | Analyte detected between the Laboratory MDL and PQL |
| U | Analyte analyzed for but Not Detected at or above the MDL |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| V | Analyte detected in the sample and the associated preparation blank |

Unless otherwise noted all soil samples analyzed for TCLP are considered 100% solid as defined by the TCLP method

Serial #: 01222016164011

FPL Central Lab

Phoebe Brown, Central Lab Manager

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# SAFETY DATA SHEET

# POLY ACRYLIC ACID

# SAFETY DATA SHEET

**Revision Date** 10-Feb-2015 **Revision Number** 1

## 1. Identification

**Product Name** **Poly(acrylic acid), sec. stand.**

**Cat No. :** **AC178060000; AC178060010; AC178060050; AC178060100; AC178060500**

**Synonyms** 2-Propenoic acid polymer; Acrylic acid resin.

**Recommended Use** Laboratory chemicals.

**Uses advised against** No Information available

**Details of the supplier of the safety data sheet**

**Company**
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

**Entity / Business Name**
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

**Emergency Telephone Number**
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
**CHEMTREC** Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

## 2. Hazard(s) identification

**Classification**
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

**Label Elements**
None required

**Hazards not otherwise classified (HNOC)**
None identified

**Unknown Acute Toxicity**
.? % of the mixture consists of ingredients of unknown toxicity.

## 3. Composition / information on ingredients

| Component | CAS-No | Weight % |
|---|---|---|
| Acrylic resin | 9003-01-4 | 100 |

## 4. First-aid measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

| | |
|---|---|
| | Obtain medical attention. |
| **Skin Contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention. |
| **Inhalation** | Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention. |
| **Ingestion** | Clean mouth with water. Get medical attention. |
| **Most important symptoms/effects** | No information available. |
| **Notes to Physician** | Treat symptomatically |

## 5. Fire-fighting measures

| | |
|---|---|
| **Suitable Extinguishing Media** | Water spray. Carbon dioxide ($CO_2$). Dry chemical. chemical foam. |
| **Unsuitable Extinguishing Media** | No information available |
| **Flash Point** | No information available |
| **Method -** | No information available |
| **Autoignition Temperature** | 520 °C / 968 °F |
| **Explosion Limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Sensitivity to Mechanical Impact** | No information available |
| **Sensitivity to Static Discharge** | No information available |

**Specific Hazards Arising from the Chemical**
Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**
Carbon monoxide (CO) Carbon dioxide ($CO_2$)
**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 0 | 0 | 0 | N/A |

## 6. Accidental release measures

| | |
|---|---|
| **Personal Precautions** | Ensure adequate ventilation. Use personal protective equipment. |
| **Environmental Precautions** | See Section 12 for additional ecological information. |
| **Methods for Containment and Clean Up** | Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment. |

## 7. Handling and storage

| | |
|---|---|
| **Handling** | Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. |
| **Storage** | Keep in a dry, cool and well-ventilated place. Keep container tightly closed. |

## 8. Exposure controls / personal protection

Exposure Guidelines

| | |
|---|---|
| **Engineering Measures** | Ensure adequate ventilation, especially in confined areas. |

**Personal Protective Equipment**

| | |
|---|---|
| **Eye/face Protection** | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| **Skin and body protection** | Wear appropriate protective gloves and clothing to prevent skin exposure. |
| **Respiratory Protection** | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| **Hygiene Measures** | Handle in accordance with good industrial hygiene and safety practice. |

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Powder Solid |
| **Appearance** | White |
| **Odor** | vinegar-like |
| **Odor Threshold** | No information available |
| **pH** | 2.5-3.0 1% aq.sol |
| **Melting Point/Range** | No data available |
| **Boiling Point/Range** | No information available |
| **Flash Point** | No information available |
| **Evaporation Rate** | No information available |
| **Flammability (solid,gas)** | No information available |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | No information available |
| **Vapor Density** | No information available |
| **Relative Density** | No information available |
| **Solubility** | No information available |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | 520 °C / 968 °F |
| **Decomposition Temperature** | No information available |
| **Viscosity** | No information available |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactive Hazard** | None known, based on information available |
| **Stability** | Stable under normal conditions. |
| **Conditions to Avoid** | Avoid dust formation. Incompatible products. |
| **Incompatible Materials** | Strong oxidizing agents, Strong bases, Amines, Ammonia |
| **Hazardous Decomposition Products** | Carbon monoxide (CO), Carbon dioxide ($CO_2$) |
| **Hazardous Polymerization** | Hazardous polymerization does not occur. |
| **Hazardous Reactions** | None under normal processing. |

## 11. Toxicological information

**Acute Toxicity**

| | |
|---|---|
| **Product Information** | No acute toxicity information is available for this product |

**Oral LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
**Mist LC50** Based on ATE data, the classification criteria are not met. ATE > 5 mg/l.

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Acrylic resin | 2500 mg/kg ( Rat ) | Not listed | Not listed |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Acrylic resin | 9003-01-4 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known
**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects,both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

## 12. Ecological information

**Ecotoxicity**
Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---|---|---|---|---|
| Acrylic resin | Not listed | 580 mg/L LC50 96 h | Not listed | 168 mg/L EC50 = 96 h |

**Persistence and Degradability** No information available
**Bioaccumulation/ Accumulation** No information available.

**Mobility** No information available.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT** Not regulated
**TDG** Not regulated
**IATA** Not regulated
**IMDG/IMO** Not regulated

## 15. Regulatory information

**International Inventories**

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acrylic resin | X | X | - | - | - | | X | X | X | X | X |

**Legend:**
**X - Listed**
**E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.**
**F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.**
**N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.**
**P - Indicates a commenced PMN substance**
**R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.**
**S - Indicates a substance that is identified in a proposed or final Significant New Use Rule**
**T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.**
**XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).**
**Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.**
**Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.**

**U.S. Federal Regulations**

**TSCA 12(b)** Not applicable

**SARA 313**

**SARA 311/312 Hazardous Categorization**

| | |
|---|---|
| **Acute Health Hazard** | No |
| **Chronic Health Hazard** | No |
| **Fire Hazard** | No |
| **Sudden Release of Pressure Hazard** | No |
| **Reactive Hazard** | No |

**Clean Water Act**

**Clean Air Act** Not applicable

**OSHA** Occupational Safety and Health Administration
Not applicable

**CERCLA**
Not applicable

**California Proposition 65** This product does not contain any Proposition 65 chemicals

**State Right-to-Know**

**U.S. Department of Transportation**

| | |
|---|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

**U.S. Department of Homeland Security**
This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Canada**
**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR**

| | |
|---|---|
| **WHMIS Hazard Class** | Non-controlled |

## 16. Other information

| | |
|---|---|
| **Prepared By** | Regulatory Affairs<br>Thermo Fisher Scientific<br>Email: EMSDS.RA@thermofisher.com |
| **Revision Date** | 10-Feb-2015 |
| **Print Date** | 10-Feb-2015 |
| **Revision Summary** | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) |

**Disclaimer**
**The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.**

**End of SDS**

# LIST OF CHEMICALS

**Florida Power & Light**
**St. Lucie Power Plant**
**Permit Number: FL0002208**
**Chemical List**
**As of 3-14-2016**

| Chemical Name | System Used | Quantity Stored | Frequency of Use | Toxicity |
|---|---|---|---|---|
| Ammonium Hydroxide | Feedwater, Condensate, Steam Generators | None | No longer used on site | NA |
| Carbohydrazide | Steam Generators | Two 55 gallon drums | As needed for corrosion control | LC50 (Lepomis macrochirus - Bluegill) = 190.0 mg/L, 96-hr.<br>LC50 (Daphnia magna - Water flea) = 96 mg/L, 48-hr. |
| Boric Acid (Boron) | Reactor Coolant (RCS) and Support Systems | Two 9,200 gallon tanks | Continuously injected for reactivity control | Fish: LC50 (Ptychocheilus lucius) - 279 mg/l (96 hr)<br>Fish: LC50 Lepomis macrochirus – 1021 mg/l (96 hr)<br>LC50 Daphnia magna – 53.2 mg/l (21 days)<br>EC50 Daphnia magna – 133 mg/l (48 hr) |
| Dimethylamine | Feedwater, Condensate, Steam Generators | Two 450 gallon totes | As needed for pH control | LC50 Brachydanio rerio (zebra fish) = 10.00 – 100.00 mg/L, 96-hr.<br>EC50 Daphnia magna (Water flea) = 4.40 mg/L, 48-hr. |
| Hydrazine | Feedwater, Condensate, Steam Generators - Small quantities to RCS during cold startups | Three 700 gallon totes | As needed (oxygen scavenger for corrosion control) | LC50 (Lebistes reticulatus) =0.61 mg/L, 96-hr.<br>EC50 (Daphnia pulex - Water flea) = 0.16 mg/L, 48 h |
| Sodium Molybdate (Na2MoO4)/Tolytriazole (TTA) | Closed Cooling Systems | 15 gallons | Every 18 months after system drain | LC50 (Rainbow trout) 96-hr = 7,600 mg/L<br>LD50 (Channel catfish) 96-hr = >10,000 mg/L<br>LD50 (Fathead minnow) 96-hr = 7,630 mg/L<br>LD50 (Shrimp) 24-hr = 3,997 mg/L<br>LC50 (Daphnids) 48-hr = 330 mg/L |
| Sodium Nitrite (NaNO2) | Closed Cooling Systems | Up to twenty 22 pound buckets | Every 18 months for cold startups | LC50 (Minnow) 24-hr = 17.1 mg/L<br>LC50 (Golden orfe) 48-hr = 360-565 mg/L<br>LC50 (Rainbow trout) 96-hr = 0.19-1.78 mg/L<br>LC50 (Tilapia) 96-hr = 81 mg/L<br>LC50 (Daphnids) 48-hr = 330 mg/L |
| Glutaraldehyde | Closed Cooling Systems | One 5 gallon container (solid powder) | Not routinely used | EC50 (Daphnia Magna) 24-hr = 19.03 mg/L<br>LC50 (Daphnia) 48-hr = 11.5 mg/L<br>LC50 (Bluegill) 96-hr = 22 mg/L<br>LC50 (Tilapia) 96-hr = 81 mg/L<br>LC50 (Daphnids) 48-hr = 330 mg/L |
| Isothiazolin | Closed Cooling Systems | None | No longer used on site | NA |
| Polyglycol | Closed Cooling Systems | None | No longer used on site | LC50 (Goldfish) 24-hr = >5,000 mg/L |
| Sodium Hypochlorite | Circulating Water and Intake Cooling (Auxiliary Equipment Cooling Water) | Two 8,800 gallon tanks | Continuous dose of 2 ppm for Intake Cooling Water and 4ppm shock dose for Circulating water 3 times per week | LC50 (fish) = 0.07 - 5.9 mg/L, 48 hr |
| Ethanolamine (ETA) | Feedwater, Condensate, Steam Generators | Two 450 gallon totes | As needed for pH control | LC50 (Pimephales promelas) = 640 mg/L, 96 hr<br>EC50 (Daphnia magna) = 22 mg/L, 48 hr |
| Klaraid | Liquid Rad Waste System | None | No longer used on site | LC50 Fathead Minnow = 1.76 mg/L, 96 hr.<br>LC50 Daphnia magna = 18.5 mg/L, 48 hr. |
| Hydrogen Peroxide | RCS | 10-15 gallons | Every 18 months for corrosion product removal during startup | EC50 (Daphnia magna - Water flea) = 7.7 mg/L<br>LC50 Fish = 10 - 37 mg/L, 96 h r. |
| Zinc Acetate | RCS | Two 75 gallon tanks | Continuously while at 100% power | LC50 (Oncorhynchus mykiss -rainbow trout) = 0.55 mg/L, 96 hr. |
| Potassium Hydroxide (KOH) | Closed Cooling Systems | Two 1 lb bottles | As needed ever 18 months during startups for pH adjustment | LC50 (Gambusia affinis - Mosquito fish) = 80 mg/L - 96 hr. |
| Sodium Hydroxide | Closed Cooling Systems | 5,000 gallon tank | Every 18 months As needed for pH control | LC50 aquatic organisms = 33 - 189 mg/L |
| Nitric Acid (HNO3) | | None | No longer used on site | LC50 (Gambusia affinis) = 72 mg/L, 96hr. |
| Lithium Hydroxide | RCS | Two 18 pound containers (solid powder) | as needed for pH control | LC50 (Daphnia magna) = 19.1 mg/L, 48-hr. |
| Poly Acrylic Acid | Feedwater (Iron control) | Four 180-gallon tote tanks | Continuous @ 2-5 ppb dosing each unit | LC50 (Bluegill) = 580mg/L, 96-hr.<br>EC50 (Waterflea) = 168 mg/L, 96-hr. |

COPY OF UPRATE COMPLETION NOTICE TO FDEP

October 29, 2012

Marc Harris, P.E.
Florida Department of Environmental Protection
Industrial Wastewater Section
2600 Blair Stone Road, MS 3545
Tallahassee, Florida 32399-2400

CERTIFIED MAIL
RETURN RECIPT REQUESTED
7006 3450 0003 0174 5162

RE: Florida Power & Light Company
St. Lucie Power Plants Units 1 and 2
Notification of an Increase in Power Generation

Dear Mr. Harris:

The attachment forwards a copy of letter dated October 17, 2012, notifying the Siting Office that the projected increase in power generation expected from the St. Lucie Extended Uprate Project has increased due to better than expected efficiencies from the replacement components. This increase in power generation is neutral to discharge effluent temperatures.

If you have any questions or need additional information, please contact Vince Munné at (772) 263-2847.

Sincerely,

Eric S. Katzman
Licensing Manager
St. Lucie Plant

LIC-PSL-2012-034

Attachment: Letter from FPL-Mathew Raffenburg to FDEP-Cindy Mulkey, dated October 17, 2012 (2 pages)

Florida Power & Light Company

6501 S. Ocean Drive, Jensen Beach, FL 34957

October 17, 2012

Cindy Mulkey
Program Administrator
Siting Coordination Office (SCO)
3900 Commonwealth Blvd. MS 48
Tallahassee, FL 32399-3000

Re: Post EPU - Power Production
Florida Power & Light Company
St. Lucie Power Plant
Nuclear Units 1 & 2
PA 74-02A2

Dear Ms. Mulkey,

On December 13, 2007, pursuant to the Florida Electrical Power Plant Siting Act (PPSA) and Chapter 62-17 FAC, Florida Power & Light Company (FPL) submitted to the Florida Department of Environmental Protection (FDEP), a Site Certification Application (SCA) pertaining to the implementation of Extended Power Uprates (EPU) at the St. Lucie Nuclear Plant, Nuclear Units 1 & 2. The St. Lucie Plant certification was approved and Conditions of Certification were issued for the Plant by the Department on September 17, 2008.

In its SCA, FPL projected that the EPU would result in an increase of 103 MWe nominal for each Unit (from 840 MWe nominal net to about 943 MWe nominal net per unit) or, a total increase of 206 MWe for both units. As a result of the electrical power production estimates FPL provided in its SCA, the Conditions of Certification for the St. Lucie Power Plant include a provision that FPL will operate a 1886 MW (nominal) facility consisting of two nuclear Units 1 & 2 (and ancillary equipment).

Now that the EPU has been implemented at St. Lucie Unit 1, post-EPU steam turbine performance testing has demonstrated that FPL's originally projected power increases were underestimated. Therefore, FPL is herewith updating its power estimates for the St. Lucie Plant, based upon the results of recent Unit 1 post-EPU turbine performance testing which indicated that the actual power increase realized was approximately 148 MWe. A similar result is expected for Unit 2. FPL's estimates for Units 1 & 2 are now as follows:

- Unit 1:
  - Licensed maximum core power level: 3020 MWt[1] (Unchanged)
  - Estimated unit power output 1050 MWe[2] (Nominal[3] Gross)
    1000 MWe (Nominal Net)

- Unit 2:
  - Licensed maximum core power level: 3020 MWt (Unchanged)
  - Estimated unit power output 1050 MWe (Nominal Gross)
    1000 MWe (Nominal Net

- Estimated facility power output ratings: 2100 MWe (Nominal Gross)
  (Units 1 & 2) 2000 MWe (Nominal Net)

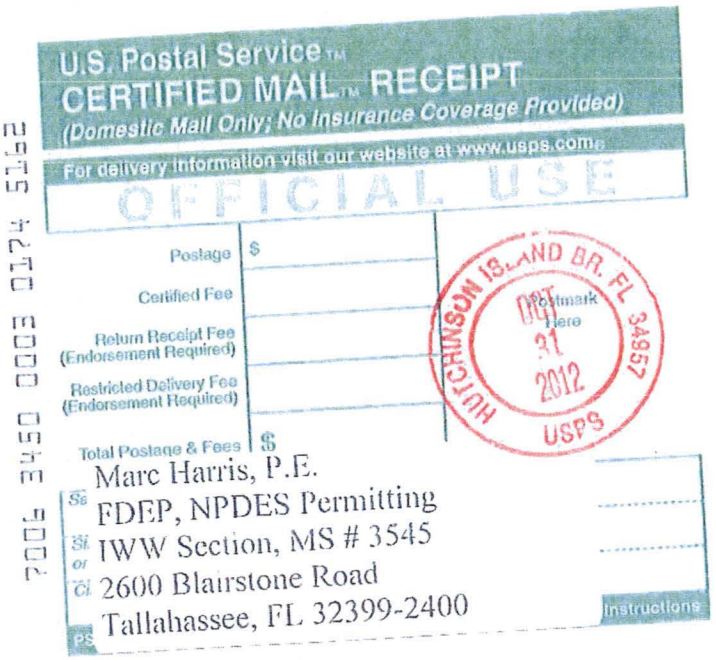
[1] MWt - Megawatts-thermal
[2] MWe- Megawatts-electrical
[3] Nominal power output refers to the approximate power output to allow for normal variation in power generation due to summer vs. winter environmental conditions.

It should be noted that the increase in FPL's power estimates for Units 1 & 2 are not the result of design changes or modifications to the EPU project, but are an update of FPL's original estimates based upon the Unit 1 post-EPU performance testing. The performance testing shows that the unit is operating with greater efficiency than originally calculated. This increase in power will not result in any changes to environmental conditions discussed in the original application. In a parallel process, FPL filed applications with the Nuclear Regulatory Commission in 2010 and 2011 to increase the St. Lucie Units 1 & 2 reactor core power levels from 2700 MWt to 3020 MWt. The NRC approved the reactor power increase license amendments on July 9, 2012 and September 24, 2012 for Units 1 & 2, respectively. Thus, although FPL is updating its electrical power output for both of the St. Lucie units, the maximum reactor core power levels for each unit, as cited in the NRC license applications and approvals, have not changed.

If you have any questions or need additional information on this matter, please contact me at 561-691-2808 or Stacy Foster at 561-691-7065.

Sincerely,
Florida Power & Light Company

Matthew J. Raffenberg
Director, Environmental Licensing and Permitting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IWW Section, MS # 3545
2600 Blairstone Road
Tallahassee, FL 32399-2400
Instructions
7012 0470 0003 0545 5745

COPY OF 2014 PROGRESS REPORT TO FDEP ON STORMWATER POLLUTION PREVENTION PLAN

September 29, 2014

Mr. Marc Harris, P.E.
FDEP, NPDES Permitting
IWW Section, MS #3545
2600 Blairstone Road
Tallahassee, Florida 32399-2400

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7011 3500 0000 7495 6884

RE: Florida Power & Light
NPDES Permit FL0002208
St. Lucie Power Plant
Storm Water Pollution Prevention Plan (SWPPP)

In accordance with the NPDES Permit FL0002208 Section VII.2.g.(3), this correspondence provides the required 3-year Progress/Update Report.

St. Lucie's SWPPP was developed and introduced to the plant as per the schedule mentioned in the above section. SWPPP training has been developed and is administered to the entire plant population on a yearly basis. Additionally, a SWPPP team has been organized with stakeholders from each major discipline represented: Radiation Protection, Operations, Mechanical Maintenance, Communications, Supplemental work force personnel, Engineering, and Training.

Previously, St. Lucie conducted a quarterly meeting with the majority of the disciplines listed above under the BMP3 umbrella. Due to the similarities of these initiatives they have been combined and goals and protocols have been updated, for example, each attendant is now designated as the environmental champion (EC) for each discipline. The EC communicates to their respective groups the direction, goals, and accomplishments of the SWPPP, and conversely bring to the quarterly meeting concerns that their constituents may have in the environmental/ waste reduction area.

During the SWPPP meetings action items are assigned to each participant with an emphasis of waste reduction, hazardous waste reduction, and pollution prevention. The following are recent examples: upgrades to our Sodium Hypochlorite system, new hazardous spill response trailer, secondary containment fuel tank dispenser and awareness initiatives.

Should you have additional questions or need additional information, please contact Vince Munné at 772-263-2847.

Sincerely,

Eric S. Katzman
Licensing Manager
St. Lucie Plant

LIC-PSL-2014-021

cc: Siting office, FDEP Ft. Pierce

# MIXING ZONE JUSTIFICATION FOR TRO

Geosyntec consultants

1200 Riverplace Boulevard, Suite 710
Jacksonville, Florida 32207
PH 904.450.4261
FAX 904.396.1143
www.Geosyntec.com

16 February 2016

Mr. Marc Harris, P.E.
Florida Department of Environmental Protection (FDEP)
Division of Water Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Mixing Zone Justification for Total Residual Oxidants at
Florida Power & Light Company, St. Lucie Plant
NPDES Permit No. FL00002208

Dear Sir,

Florida Power & Light Company (FPL) owns and operates the St. Lucie Plant (Plant) located on the widest section of Hutchinson Island in Jensen Beach, St. Lucie County, Florida **(Figure 1).** The Plant consists of two nuclear-powered, steam-electric generating units, Units 1 and 2, with a total generating capacity of approximately 2,000 megawatts. The generating units obtain water from the Atlantic Ocean to remove heat from the main condensers using the once-through cooling water (OTCW) and auxiliary equipment cooling water (AECW) systems. Cooling water flows by gravity from the Atlantic Ocean through offshore intake structures into the intake canal. The water is then pumped through each unit. Heated cooling water is released to the discharge canal and back to the Atlantic Ocean through offshore diffusers.

The Plant operates under Industrial Wastewater Facility Permit (permit) FL0002208. This permit was issued by FDEP on September 29, 2011 and expires on September 28, 2016. In accordance with the permit, the cooling water is discharged to the Atlantic Ocean at a maximum daily flow rate of 1,487 million gallons per day (MGD) and an annual average daily flow of 1,362 MGD.

Cooling water from the OTCW and AECW systems are treated daily using sodium hypochlorite (NaClO) as an anti-fouling agent. NaClO is also an oxidant. The Plant does not operate a dechlorination system, any chlorine discharged to the canal attenuates through degradation and dispersion processes.

Section I.A.6 of the existing permit specifies that compliance with TRO effluent limitations be monitored at EFF-2. As depicted in **Figure 2**, EFF-2 is a floating dock situated within the

discharge canal. EFF-2 is located approximately 370 feet upgradient of two inlets that conduct canal effluent to diffuser structures located offshore in the Atlantic Ocean. In calculating the existing TRO limit of 0.1 milligram per liter (mg/L), FDEP considered literature-based decay processes to account for TRO attenuation between EFF-2 and the Atlantic Ocean. In summary, an effluent concentration of 0.1 mg/L measured at EFF-2 was predicted to achieve the Class III Marine Water Quality Standard (WQS) of 0.01 mg/L prior to discharge from the diffusers into the Atlantic Ocean in the existing permit. The difference between the limit of 0.1 mg/L at EFF-2 and the WQS of 0.01 mg/L represents a decay allowance of 0.09 mg/L or 90% of the concentration value passing EFF-2.

To evaluate the accuracy of this decay allowance, FDEP required that FPL complete a TRO degradation study. According to Section VI.6 of the permit, FPL was required to design and implement a plan of study (POS) to reaffirm that the discharge from the diffusers meets the Class III Marine WQS of 0.01 mg/L. In accordance with this permit requirement, FPL and their contractor prepared an FDEP-approved POS dated June 2012 **(Attachment 1, Appendix A).**

Geosyntec began implementing the TRO POS on January 9, 2013. Geosyntec completed the POS in December 2014. The report summarizing the results of the 2-year POS was submitted to FDEP in February 2015. A copy of this report is included as **Attachment 1** of this letter. The results presented in this report indicated that TRO did not decay sufficiently between EFF-2 and the diffusers to meet the TRO Class III marine water quality standard of 0.01 mg/L.

Rule 62-4.244 of the Florida Administrative Code (F.A.C.) allows for the consideration of mixing zones to satisfy the TRO Class III marine water quality standard for open ocean discharges. A mixing zone allowance may be granted following adequate demonstration of (1) absence of toxicity, (2) achieved mixing, and (3) required dilution. The purpose of this letter is to request that the Department grant the use of a mixing zone to demonstrate compliance with the TRO Class III marine water quality standard of 0.01 mg/L and present justification for this request.

The February 2015 report summarized the results of the 2-year study and also included a review of data to justify use of a mixing zone to achieve the TRO Class III marine water quality standard. Based on the results of the study, it was concluded that TRO discharged at the original effluent limit of 0.1 mg/liter would not decay to the new 0.01 mg/l requirement at the diffuser inlets. However, the review of the whole effluent toxicity tests, approved diffuser modeling results, and effluent discharge monitoring reports indicated that a mixing zone is justified. Justification for allowance of mixing zone to demonstrate compliance with the TRO Class III marine water quality standards was presented in Section 3.5 of Geosyntec's report submitted to the Department in February 2015, but is reiterated here to facilitate review of this request.

*Absence of Toxicity*

A mixing allowance may be considered if the applicant demonstrates that toxicity is absent from effluent. More specifically, Subparagraph 62-4.244(3)(c)1 F.A.C. offers:

> *"The effluent, when diluted to 30% full strength with water having a salinity representative of the average receiving-water's salinity, shall not cause more than 50% mortality in 96 hours (96 hr. LC50) in a species significant to the indigenous aquatic community. "*

In review of chronic Whole Effluent Toxicity (WET) tests conducted on samples collected at EFF-2 for the past 3-years, it has been observed that chronic toxicity was absent at 100% effluent strength in the reviewed tests (n = 8). These WET tests were conducted for the period of October 3, 2011 through August 25, 2014. Further, samples collected at EFF-2 were not dechlorinated prior to WET testing. As WET test taxa (i.e., *Mysidopsis bahia, Menidia beryllina*) may be considered representative of species significant to the indigenous community, and chronic thresholds were achieved at greater than 30% effluent, it seems reasonable that effluent toxicity requirements specified at Subparagraph 62-4.244(3)(c)1 F.A.C. have been and are being met.

*Achieved Mixing*

From 2007 through 2010, Golder Associates Inc. (Golder) conducted a thermal discharge study (Thermal Study) at the Plant. The purpose of the study was to assess changes in water temperature and biology that may occur in the Atlantic Ocean as a result of increasing the discharge temperature from 113° to 115°F. A key component of the study included numerical modeling of thermal discharge plumes from existing Y and multiport diffusers.

The plume model used in the Thermal Study was MULDIF and is in **Appendix B of Attachment 1**. The plume model includes equations of conservation of mass, horizontal momentum flux, vertical momentum flux, density deficiency flux, thermal energy flux, and two equations of horizontal and vertical distance. The solution of these equations provides jet width, dilution, temperature, density, jet trajectory, and temperature rise as a function of position.

With respect to achieved mixing, the plume model results, approved by the Department, predicted a range of surface dilution values achieved by existing Y and multiport diffusers. As presented in **Table 1**, worst-case dilution predicted by the MULDIF model was 3.9:1 for the Y-diffuser and 11.1:1 for the multiport diffuser. As flow from D-001 was assumed to distribute equally between diffusers, the worst-case flow-weighted dilution ratio for the diffuser pair is 7.5.

**Table 1**
**Surface Dilution Ratios Predicted by the MULDIF Plume Model for Existing Diffuser Structures at the St. Lucie Plant**

| Case | Case Description | Dilution Ratio at Surface |
|---|---|---|
| 1 | Y-diffuser, Existing Conditions | 4.33 |
| 2 | Y-diffuser, Post-Uprate Discharge at 113°F | 4.34 |
| 3 | Y-diffuser, Post-Uprate Discharge at 117°F | 3.88 |
| 4 | Multiport diffuser, Existing Conditions | 12.37 |
| 5 | Multiport diffuser, Post-Uprate Discharge at 113°F | 12.44 |
| 6 | Multiport diffuser, Post-Uprate Discharge at 117°F | 11.08 |

***Required Dilution***

According to sub-paragraph 62-4.244(3)(c)3.a. F.A.C., the worst case effluent concentration (WCEC) is calculated as the effluent concentration 95th percentile for the most recent 3-year period of monitoring data. **(Attachment 1, Appendix H)**. The 95$^{th}$ percentile of TRO concentrations measured at EFF-2 and listed on Discharge Monitoring Reports is 80.8 ug/L **(Table 2)** for the period of March 2011 to December 2015 (**Attachment 2**). On this basis, a dilution ratio of 8.1 **(Table 2)** is required to achieve the marine WQS of 10 µg/L TRO without consideration of decay processes. Dilution needed to achieve the WQS is reduced as a result of TRO decay occurring between EFF-2 (monitoring point) and the diffuser inlets. According to the bench-scale PFO model, TRO decays at a rate of 0.98 hr$^{-1}$ near EFF-2 **(Attachment 1, Section 3.3),** leading to a lower required dilution ratio of approximately 7.0.

**Table 2**
**Descriptive Statistics for Total Residual Oxidant Concentrations Reported on Discharge Monitoring Reports and Required Dilution for Diffusers at the St. Lucie Plant**

| Parameter | Unit | Value |
|---|---|---|
| Mean | µg/L as TRO | 23.3 |
| Geometric Mean | µg/L as TRO | 13.7 |
| Maximum | µg/L as TRO | 93.0 |
| Minimum | µg/L as TRO | < 5.0 |
| 95th Percentile | µg/L as TRO | 80.8 |
| Sample Number | n (#) | 54 |
| Required Dilution (no decay) | dimensionless | 8.1 |
| Required Dilution (*bench-scale decay) | dimensionless | 6.6 |
| Required Dilution (**field-scale decay) | dimensionless | < 7.0 |
| Predicted Dilution from MULDIF (***flow-weighted, worst-case) | dimensionless | 7.5 |

*calculated as decay of 95th percentile DMR value at ks = 0.98 $hr^{-1}$ for 11 minute travel time to inlets from EFF-2.
**assumed less than bench-scale decay based on results obtained at EFF-2 from field-scale study.
***average of Case 3 and Case 6 from Table 1.

Based on FPL's discussions with the Department, the information cited and presented in this document provided an adequate demonstration of an absence of toxicity, achieved mixing, and required dilution, as summarized below:

- According to WET tests performed by others, toxicity to species representing significant and indigenous taxa is absent at thresholds specified by the F.A.C. in effluent sampled at EFF-2;
- Dilution is needed to achieve the TRO WQS because the WCEC is predicted to exceed the WQS when accounting for decay measured at the bench-scale; and
- Dilution ratios provided by existing diffuser structures are predicted to equal or exceed dilution needed to achieve TRO WQS at the ocean surface.

Accordingly, a mixing zone for TRO is justified for the discharge from the St. Lucie Nuclear Power Plant.

Geosyntec recommends a mixing zone of approximately 1,205,484 square feet (sf) (111,993 square meter (sm)). It will extend seaward from the Y-port discharge which accounts for the plume extent 13 ft (4 m) past the final port of the Multiport diffuser and will parallel the shore for 678 ft (207 m) (See **Figure 3**) based on the plume model results from Golder in the TRO plan of study, worst-case, based on 7.5 dilution ratio allowing for a TRO concentration of 0.09 mg/l to meet the 0.01 mg/l Class III Marine Water Quality Standard. The mixing zone would include the plumes from both of the existing diffusers (Y-Port and Multiport Diffuser) as indicated in the Golder plume model results. It is assumed that the flow fields of the diffusers will merge in the open deep water of the ocean. The required mixing zone for the TRO would be larger than that necessary for the thermal mixing zone due to the mechanics of the TRO decay which are not linear as they are with temperature attenuation. The mixing zone sizing is consistent with the EPA mixing zone technical and policy guidance documents, (USEPA. 1991. "Technical Support Document for Water Quality-based Toxics Control" EPA 505-290-001. U.S. Environmental Protection Agency, Office of Water, Washington, DC and USEPA. 1994. "Water Quality Standards Handbook: Second Edition." EPA 823-B-94-005a. U.S. Environmental Protection Agency, Office of Water, Washington, DC.).

Geosyntec appreciates your consideration for this mixing zone justification request and is available to discuss further at your convenience.

Very truly yours,

GEOSYNTEC CONSULTANTS

Glenn R. Carwell III, CHMM
Senior Engineer

Melissa Fagan, P.E.
Design Engineer
PE # 73087
FL Certificate of Authorization #4321

Figure 1: Site Location

Figure 2: Rhodamine Sensor Locations

Figure 3: Mixing Zone Location Map

Attachment 1: TRO POS February 2015

Attachment 2: Data Summary Table through 2015

Attachment 3: FPL Discharge Intake Canal Drawing

1,200 600 0 1,200 Feet

**Site Location**

The Florida Power & Light Company
St. Lucie Nuclear Power Plant
6501 South Ocean Drive
Jensen Beach, FL 34987

Note:
1. 2012 Aerial Photo Source: Florida Department of Transporation Surveying and Mapping Office.

Geosyntec consultants

Titusville, FL | April 2013

Figure 1

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500 250 0 500 Feet

Legend

- EEF-2 (floating dock)
- Extended Discharge Inlet (16' pipe)
- Main Discharge Inlet (12' pipe)

Note:
1. 2012 Aerial Photo Source: Florida Department of Transporation Surveying and Mapping Office.

**Rhodamine Sensor Locations**

The Florida Power & Light Company
St. Lucie Nuclear Power Plant
6501 South Ocean Drive
Jensen Beach, FL 34987

Geosyntec consultants

Titusville, FL | April 2013

Figure 2

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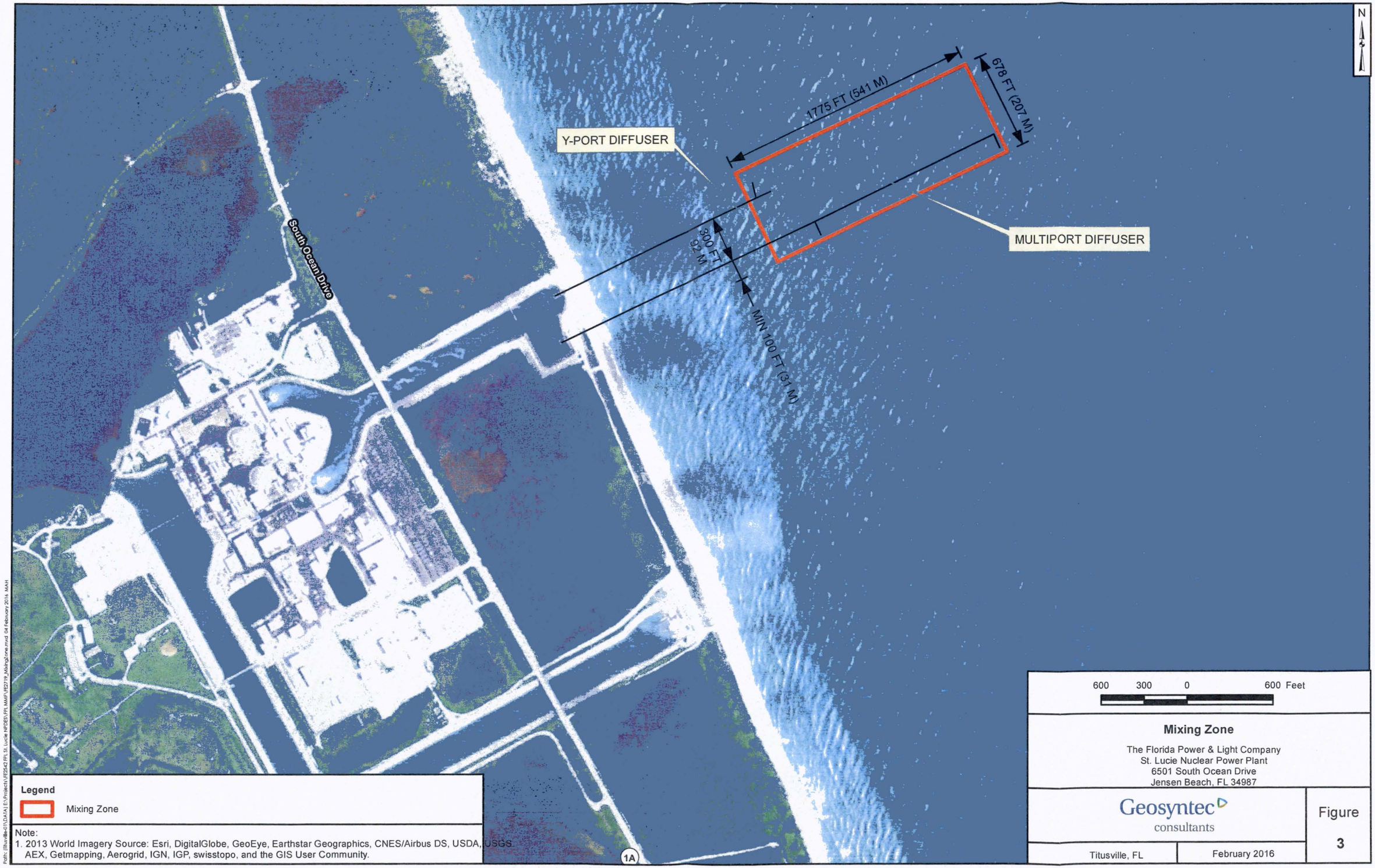


**Legend**

Mixing Zone

Note:
1. 2013 World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

600 300 0 600 Feet

**Mixing Zone**

The Florida Power & Light Company
St. Lucie Nuclear Power Plant
6501 South Ocean Drive
Jensen Beach, FL 34987

Geosyntec consultants

Titusville, FL | February 2016

Figure 3

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**ATTACHMENT 1**

*Submitted to*

**Florida Power and Light Company**

700 Universe Boulevard
Juno Beach, Florida 33408

# Evaluation of Total Residual Oxidant Attenuation at the St. Lucie Nuclear Power Plant

*Submitted by*

Geosyntec consultants

engineers | scientists | innovators

February 2015

# Evaluation of Total Residual Oxidant Attenuation at the St. Lucie Nuclear Power Plant

Geosyntec Consultants

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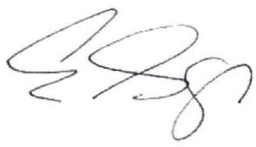


Date: 2/3/15

Eric Sager, P.G.

Date: 2/3/15

Chris Zell, PHWQ

## TABLE OF CONTENTS

1. INTRODUCTION ..... 1-1
1.1 Facility Location and Description ..... 1-1
1.2 Applicable Permits, Conditions, and Standards ..... 1-3
1.3 Purpose and Objectives ..... 1-5
2. METHODOLOGY ..... 2-1
2.1 Travel Time ..... 2-1
2.2 Bench-Scale Decay ..... 2-2
2.2.1 Phase 1 Decay Methods ..... 2-2
2.2.2 Phase 2 Decay Methods ..... 2-3
2.2.3 Chlorine Decay Processes and Data Analysis ..... 2-3
2.3 Field-Scale Decay ..... 2-4
2.4 Outfall Diffuser Modeling ..... 2-4
3. RESULTS AND DISCUSSION ..... 3-1
3.1 Travel Time ..... 3-1
3.1.1 Full Operating Conditions ..... 3-1
3.1.1 Single Unit Operating Conditions ..... 3-2
3.2 Phase 1 Decay Evaluation ..... 3-3
3.2.1 Demonstration of Laboratory Capability ..... 3-3
3.2.2 Initial Bench-Scale Sampling and Decay Series Analysis ..... 3-4
3.3. Phase 2 Bench-Scale Decay ..... 3-5
3.4. Field-Scale Verification ..... 3-7
3.5. Effluent Toxicity, Diffuser Dilution, and Mixing Considerations ..... 3-9
3.6. Summary and Recommendations ..... 3-12
4. REFERENCES ..... 4-1

## LIST OF APPENDICES

Appendix A Golder & Associates Plan of Study dated June 2012
Appendix B Golder & Associates Plume Model, 2007
Appendix C Travel Time Plots
Appendix D Phase 1 Decay Data Tables
Appendix E Phase 2 Decay Data Tables
Appendix F Field Scale Data
Appendix G Total Residual Oxidant Recovery Curves
Appendix H Discharge Monitoring Report Data

## LIST OF TABLES

Table 1 Plan of Study Components to Estimate Total Residual Oxidant Decay at the St. Lucie Plant
Table 2 Mean Travel Times in the St. Lucie Discharge Canal during Full Operating Conditions measured from January 10, 2013 through January 12, 2013
Table 3 Mean Travel Times in the St. Lucie Discharge Canal during Single Unit Operating Conditions measured from October 14, 2013 through October 18, 2013
Table 4 Results of Laboratory Demonstration Study using HACH AutoCat 9000 Amperometric Titrator
Table 5 Summary of Total Residual Oxidant Field-Scale Decay Evaluation in the St. Lucie Discharge Canal conducted on December 9, 2014
Table 6 Surface Dilution Ratios Predicted by the MULDIF Plume Model for Existing Diffuser Structures at the St. Lucie Plant
Table 7 Descriptive Statistics for Total Residual Oxidant Concentrations reported on Discharge Monitoring Reports and Required Dilution for Diffusers at the St. Lucie Plant

## LIST OF FIGURES

Figure 1 Site Location

Figure 2 Rhodamine Sensor Locations

Figure 3 Bench-Scale Total Residual Oxidant Data and Model Predictions for Phase 1 Decay Series with Initial Concentration Greater than 100 µg/L (n = 32)

Figure 4 Bench-Scale Total Residual Oxidant Half-Life by Month for Phase 2 Decay Series Conducted from January 28, 2013 through December 10, 2014 (n = 70)

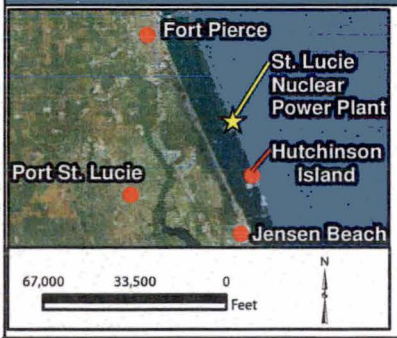
Figure 5 Bench-Scale Total Residual Oxidant Data and Model Predictions for Phase 2 Decay Series for the Period of January 28, 2013 through January 10, 2014 (n = 831)

# 1. INTRODUCTION

Geosyntec Consultants, Inc. (Geosyntec) prepared this Project Report on behalf of Florida Power & Light Company (FPL) to document information obtained from Total Residual Oxidant (TRO) degradation studies at the St. Lucie Plant (Plant). FPL retained Geosyntec in November 2012 to implement the TRO Plan of Study (POS) approved by the Florida Department of Environmental Protection (FDEP). Field data collected and modeling analyses evaluated to support this project are described herein.

## 1.1 Facility Location and Description

The St. Lucie Plant is located on the widest section of Hutchison Island in Jensen Beach, St. Lucie County, Florida (Figure 1). The Plant consists of two nuclear-powered, steam-electric generating units (Unit 1 and Unit 2) with a total generating capacity of approximately 2,000 megawatts. Generating Units 1 and 2 obtain intake water from the Atlantic Ocean to remove heat from the main condensers via the once-through cooling water (OTCW) and auxiliary equipment cooling water (AECW) systems. Cooling water flows by gravity from the Atlantic Ocean through offshore intake structures into the intake canal. The water is then pumped through the main condensers for each unit. Heated cooling water is released to the discharge canal and back to the Atlantic Ocean through two offshore diffusers.



1,200 600 0 1,200 Feet

**Site Location**

The Florida Power & Light Company
St. Lucie Nuclear Power Plant
6501 South Ocean Drive
Jensen Beach, FL 34987

Note:
1. 2012 Aerial Photo Source: Florida Department of Transporation Surveying and Mapping Office.

Geosyntec consultants

Titusville, FL | April 2013

Figure 1

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## 1.2 Applicable Permits, Conditions, and Standards

The Plant operates under Industrial Wastewater Facility Permit (permit) FL0002208. The permit was issued by FDEP on September 29, 2011 and expires on September 28, 2016. In accordance with the permit, cooling water is discharged to the Atlantic Ocean at a maximum daily flow rate of 1,487 million gallons per day (MGD) and an annual average daily flow of 1,362 MGD. Cooling water from the OTCW and AECW systems are treated daily using sodium hypochlorite (NaClO) as an anti-fouling agent. The Plant does not operate a dechlorination system. Chlorine discharged to the canal attenuates through degradation and dispersion processes.

Section I.A.6 of the existing permit specifies that compliance with TRO effluent limitations be monitored at EFF-2. As depicted in Figure 2, EFF-2 is a floating dock situated within the discharge canal. EFF-2 is located approximately 370 feet upgradient of two inlets that conduct canal effluent to diffuser structures located offshore in the Atlantic Ocean. In calculating the existing TRO limit of 0.1 milligram per liter (mg/L), FDEP considered literature-based decay processes to account for TRO attenuation between EFF-2 and the Atlantic Ocean. In summary, an effluent concentration of 0.1 mg/L measured at EFF-2 was predicted to achieve the Class III Marine Water Quality Standard (WQS) of 0.01 mg/L prior to discharge from the diffusers into the Atlantic Ocean in the existing permit. The difference between the limit of 0.1 mg/L at EFF-2 and the WQS of 0.01 mg/L represents a decay allowance of 0.09 mg/L or 90% of the concentration value passing EFF-2.

To evaluate the accuracy of this decay allowance, FDEP required that FPL complete a TRO degradation study. According to Section VI.6 of the permit, FPL was required to design and implement a POS to reaffirm that the discharge from the diffusers meets the Class III Marine WQS of 0.01 mg/L. In accordance with this permit requirement, FPL and their contractor prepared an FDEP-approved POS dated June 2012 (Rev 1) (Appendix A). Geosyntec began implementing the TRO POS on January 9, 2013. Data collection was completed on December 9-10, 2014 following conclusion of field-scale decay components of the POS.

500 250 0 500 Feet

Legend

- EEF-2 (floating dock)
- Extended Discharge Inlet (16' pipe)
- Main Discharge Inlet (12' pipe)

Note:
1. 2012 Aerial Photo Source: Florida Department of Transporation Surveying and Mapping Office.

**Rhodamine Sensor Locations**

The Florida Power & Light Company
St. Lucie Nuclear Power Plant
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Jensen Beach, FL 34987

Geosyntec consultants

Titusville, FL | April 2013

Figure 2

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## 1.3 Purpose and Objectives

The purpose of this study was to quantify TRO degradation within canal water. According to the approved POS (Appendix A), the objective of the study was to develop a procedure and collect data to estimate and potentially reaffirm that the discharge from the Plant's diffusers meets the TRO Class III Marine WQS of 0.01 mg/L. To accomplish this objective, the POS included three study components (Table 1). This report contains study data and interprets findings following implementation of the POS.

**Table 1. Plan of Study Components to Estimate Total Residual Oxidant Decay at the St. Lucie Plant**

| Study Component | Rationale |
|---|---|
| Travel Time | TRO decay processes are time-dependent. Mean water velocity at low tide in the canal was measured with one and two units in operation. |
| Bench-Scale Decay | Measurement of TRO concentrations over time in a bench top vessel containing a canal water sample spiked with sodium hypochlorite (antifouling agent). Provides conservative estimate of *in-situ* decay with greater statistical replication. |
| Field-Scale Decay | Direct measurement of TRO concentrations within the canal following injection of sodium hypochlorite. Provides representative estimate of field-scale decay that accounts for chemical reactions and hydrodynamic dispersion processes that attenuate TRO *in-situ*. |

## 2. METHODOLOGY

Section 2 describes the methods and materials used during implementation of the approved POS. In addition, Section 2 includes a brief summary of the model applied by Golder and Associates in 2007 (Appendix B) to predict dilution ratios for existing Y and multiport diffusers.

### 2.1 Travel Time

Mean water velocity and travel time in the canal was measured using dye tracing techniques (Hubbard et al., 1982). The technique used in this study involves short-term (i.e., slug) injection of conservative tracer dye into the water column and recovery (measurement) of the dye cloud downstream of the injection. The elapsed time between the injection and dye cloud centroid represents the mean travel time between the injection point and downstream measurement location(s). Elapsed time between centroids represents the mean travel time between adjacent dye clouds.

The centroid of a dye cloud is the center of mass and is calculated using integral calculus. For a given dye cloud represented by a tracer recovery curve, the centroid is composed of an elapsed time component (x-axis) and concentration component (y-axis). The time of centroid (travel time) is calculated in this study according to Equation 1, from Martin and McCutcheon (1999).

Equation 1:
$$t_c = \frac{\int_{ti}^{tf} C*t* \, dt}{\int_{ti}^{tf} C*dt}$$

*where $t_c$ = travel time, C = Rhodamine WT concentration at time t, t = elapsed time from injection, dt = elapsed time increment, $t_f$ = time when dye cloud passes sampling site, and $t_i$ = time when dye cloud arrives at sampling site.*

In accordance with the POS, travel time in the canal was measured a total of six times. Three measurements were conducted with two units in operation and an additional three measurements conducted when the Plant was operating only one unit. Tide elevations at the Ft. Pierce Inlet South Jetty gauge were used in identifying injection times coinciding with low-tide. Note that high and low tides at the Plant lag behind those at the Ft. Pierce Inlet South Jetty by approximately 55 minutes (analysis not shown).

Rhodamine WT (RhoWT) is a red conservative tracer dye widely used in travel time studies. RhoWT was specified for use by the approved POS. Tracer recovery curves and travel times were obtained using YSI Model 6600 Series sondes equipped with flourometers. Sondes were deployed at the following three locations: EFF-2 (floating dock), main discharge inlet (12-foot [ft] pipe), and extended discharge inlet (16-ft pipe). Slugs of RhoWT were injected at both Unit 1 and Unit 2.

The POS indicated that RhoWT would be injected to achieve a peak concentration of 100 to 300 micrograms per Liter (µg/L). RhoWT is visible at concentrations as low as 2 to 5 µg/L, and these low concentration are within the range of the YSI fluorometer probe. Therefore, the maximum targeted RhoWT concentration was decreased to approximately 30 µg/L to address any perceived health and safety issues associated with changes in the color of the discharge water at the Plant. Figure 2 depicts the location of deployed fluorometers. Travel times calculated during the study are reported in Section 3.

## 2.2 Bench-Scale Decay

Measurement of TRO decay at the bench-scale involved spiking a 4-liter (L) sample of canal water collected at EFF-2 with sodium hypochlorite and subsequently measuring TRO concentrations over time. To estimate decay, each 4 L spiked canal sample was split into 20 separate 250 milliliter beakers. Each pretreated beaker was placed into a water bath having a temperature equivalent to that of the canal. TRO was then measured in each beaker, a process that takes approximately 4 to 6 minutes using titration techniques. Measurement of TRO decay proceeded for a period of approximately 50 to 60 minutes (usually about 10 to 12 beakers). In summary, analysis of the individual subsamples (beakers) provided a series of measured concentrations at a specific elapsed time, which then provided an estimated decay rate for each 4 L sample.

TRO in canal samples were measured using a HACH AutoCat 9000 titrator (AutoCat - HACH, 2007). The AutoCat is an automated chlorine amperometric end point titration instrument that uses a dual platinum electrode (DPE) probe. The concentration of TRO was measured using the forward titration procedure that features a low-level detection limit of 1.2 µg/L. The AutoCat forward titration procedure is equivalent to United States Environmental Protection Agency (USEPA) methods 330.1 and 330.3, and *Standard Methods* 4500-Cl D. for wastewater specified by the POS.

### 2.2.1 Phase 1 Decay Methods

The purpose of Phase 1 activities was to develop a reliable and reproducible procedure for generating bench-scale decay data. During Phase 1, Geosyntec demonstrated laboratory capability and collected separate 4 L samples of canal water to identify appropriate spike concentrations of sodium hypochlorite. Phase 1 methods employed were consistent with the approved POS. Results from laboratory demonstration and initial sodium hypochlorite dosing trials are reported in Section 3.

### 2.2.2 Phase 2 Decay Methods

According to the approved POS, the purpose of Phase 2 was to quantify bench-scale decay under naturally variable water characteristics of the cooling water. The second phase consisted of 24 monthly sampling events. For each monthly sampling event, three estimates (replicates) of decay rates and parameters were generated from three separate samples (4 L) of canal water. An initial spiked concentration of approximately 100 and 200 µg/L TRO was targeted for each sample. Sample collection and titration methods are summarized above. Additional procedure information can be obtained from HACH (2007) and Geosyntec on request. Phase 2 methods are consistent with the approved POS. Results and analyses from Phase 2 are reported in Section 3.

### 2.2.3 Chlorine Decay Processes and Data Analysis

Decay mechanisms for TRO in fresh and saltwater environments include: oxidation, substitution, addition, and light catalyzed decomposition (Fang et al., 1999). In addition to various chemical reactions, TRO concentrations in the water column are attenuated by physical dispersion and mixing processes (Martin and McCutcheon, 1999). Several researchers including Vasconcelos et al. (1995) and Gang et al. (2003) have identified a parallel first-order model (PFO, Equation 2) as representing fast and slow oxidant decay reactions. As presented in Section 3, the PFO model fit bench-scale decay data better than a typical first order exponential decay model.

Equation 2:
$$C_t = C_0 \left[ f\, e^{-k_f t} + (1 - f) e^{-k_s t} \right]$$

*where $C_t$ = Concentration of TRO at elapsed time t, t = elapsed time, $C_0$ = initial concentration of TRO in vessel, $f$ = fraction of fast-reacting TRO(in %), $k_f$ = first-order rate for fast-reacting TRO (per hour), and $k_s$ = first-order rate for slow-reacting TRO (per hour).*

Fitting of Equation 2 to bench-scale decay series was performed using non-linear regression routines available in SYSTAT software. Aggregated variability of Equation 2 parameters $f$, $k_f$, and $k_s$ were characterized as 95% confidence intervals (C.I.) using bootstrap methods (Efron and Tibshirani, 1998) available in SYSTAT.

The dependent variable used in PFO regression analyses for this study is the dimensionless quantity $C_t$ / $C_0$. Use of dimensionless response as the dependent variable facilitated data aggregation over different elapsed times and initial concentrations obtained during bench-scale testing.

## 2.3 Field-Scale Decay

Attenuation of TRO *in-situ* was measured during a single field verification event according to the POS. During this field event, sodium hypochlorite was injected at a volume estimated to produce a 75 µg/L peak of TRO at EFF-2. Following injection, concentrations of TRO were measured at approximately 4-minute intervals at EFF-2 and the Main Inlet using two AutoCat amperometric titrators. Loss of TRO through decay processes were approximated from centroids and mass recovery timeseries at EFF-2 using numerical integration techniques referenced in Kilpatrick (1993).

## 2.4 Outfall Diffuser Modeling

From 2007 through 2010, Golder and Associates Inc. (Golder) conducted a thermal discharge study (Thermal Study) at the Plant. The purpose of the study was to assess changes in water temperature and biology that may occur in the Atlantic Ocean as a result of increasing the discharge temperature from 113° to 115°F. A key component of the study included numerical modeling of thermal discharge plumes from existing Y and multiport diffusers.

The plume model used in the Thermal Study was MULDIF. MULDIF is the Envirosphere version of the near-field Koh and Fan model (see Appendix B). The Koh and Fan near-field model (Koh and Fan, 1970) is a submerged jet model consisting of a set of seven simultaneous differential equations. They include equations of conservation of mass, horizontal momentum flux, vertical momentum flux, density deficiency flux, thermal energy flux, and two equations of horizontal and vertical distance. The solution of these equations provides jet width, dilution, temperature, density, jet trajectory, and temperature rise as a function of position. Thermal Study modeling results presented by Golder are summarized in Section 3.

# 3. RESULTS AND DISCUSSION

In Section 3 we present and interpret data obtained during implementation of the approved POS.

## 3.1 Travel Time

Geosyntec conducted travel time studies during full operating conditions during the period of January 10, 2013 through January 12, 2013. Travel times resulting from a single unit in operation were obtained during the period of October 14, 2013 through October 18, 2013.

### 3.1.1 Full Operating Conditions

To evaluate travel times at average flow conditions, Geosyntec completed a travel time study under full operating conditions. Under these conditions, both units and associated circulating pumps are running. To evaluate the effects of tides, the initial travel time study consisted of three separate dye injection events. These events were scheduled to measure travel time under different tidal conditions. Geosyntec conducted the first and third events at low tide when the volume of the discharge canal and residence time of cooling water in the canal should be lower. The second event was conducted at high tide when the volume of the discharge canal and residence time of cooling water should be higher. Conducting tests at both low and high tides approximate an upper and lower bound on travel times during full operating conditions. The time of high and low tides were estimated based on the tidal predictions for the Ft. Pierce Inlet South Jetty and were corrected to account for the lag time to the Plant's discharge canal.

As listed in Table 2, mean (centroid) travel time to EFF-2 from Outfall D-001 varied from 32.9 to 37.7 minutes during low-tide. Travel time from EFF-2 to the main inlet varied from 6.2 minutes (injection 03) to 11.2 minutes during low-tide. Travel times in the canal were 20% to 30% longer during high-tide compared to low-tide. Dye from the high-tide injection was not completely flushed from the canal before initiation of the second low-tide injection (I-03 in Table 2). Consequently, the tracer recovery curve for the second low-tide injection featured substantive variance and transient storage effects. For these reasons, travel times measured during the first injection are believed to be most representative of low-tide conditions. Travel time from the main discharge inlet through the diffusers is qualitatively estimated at approximately 10 minutes based on visual observations made during Injection-01. Tracer recovery curves are provided in Appendix C.

**Table 2. Mean Travel Times in the St. Lucie Discharge Canal during Full Operating Conditions Measured from January 10, 2013 through January 12, 2013**

| Travel Time Characteristic | Injection ID | Segment 1<br>Outfall D-001 to EFF-2 | Segment 2<br>EFF-2 to Main Diffuser Inlet |
|---|---|---|---|
| RhoWT Injection Time and Volume | I-01 (low-*tide) | D-001 on 1/11/2013 14:17 = 4.5 L per Unit | |
| | I-02 (high-tide) | D-001 on 1/11/2013 20:28 = 5.5 L per Unit | |
| | I-03 (low-tide) | D-001 on 1/12/2013 02:59 = 5.5 L per Unit | |
| Travel Time and Centroid RhoWT Concentration | I-01 (low-tide) | 32.9 minutes, 8 µg/L | 11.2 minutes, 6 µg/L |
| | I-02 (high-tide) | 43.0 minutes, 8 µg/L | 13.5 minutes, 6 µg/L |
| | I-03 (low-tide) | 37.7 minutes, 19 µg/L | **6.2 minutes, 8 µg/L |

*Predicted Tide Elevation at Ft. Pierce Inlet:I-01 = -0.6 ft, I-02 = +3.0 ft, I-03 = -1.2 ft
**Transient storage effects at EFF-2 from high tide injection resulted in less certain travel times for I-03

### 3.1.1 Single Unit Operating Conditions

Travel time during single unit operating conditions was measured during the period of October 14, 2013 to October 18, 2013. During this period, Unit 1 was shut down for maintenance leaving Unit 2 in operation. All three injections during the single unit travel time study were conducted at low-tide. Tide elevation at the Plant was estimated from tidal predictions at the Ft. Pierce Inlet South Jetty and corrected to account for the lag time to the Plant's discharge canal.

As listed in Table 3, mean (centroid) travel time to EFF-2 from Outfall D-001 varied from 31.6 to 33.8 minutes during low-tide. Travel time from EFF-2 to the inlets varied from 9.0 to 11.3 minutes during low-tide. Travel times between EFF-2 and individual inlets differed by 2 or less minutes. Operating conditions (i.e., one vs two units in operation) did not substantively affect travel times. In Segment 1 (D-001 to EFF-2), mean low-tide travel time (Unit 2 only) was 33.0 minutes as compared to 32.9 minutes (both units) measured by Injection-01 (most representative).

Within Segment 2 (EFF-2 to Diffuser Inlets), mean low-tide travel time during single unit conditions was 9.9 minutes at the main inlet in comparison to 11.2 minutes for Injection-01. Tracer recovery curves are provided in Appendix C.

**Table 3. Mean Travel Times in the St. Lucie Discharge Canal during Single Unit Operating Conditions measured from October 14, 2013 through October 18, 2013**

| Travel Time Characteristic | Injection ID | Segment 1 Outfall D-001 to EFF-2 | Segment 2 EFF-2 to Diffuser Inlets | |
|---|---|---|---|---|
| RhoWT Injection Time and Volume | I-04 (low-*tide) | D-001 on 10/16/2013 01:00 = 6.7 L (Unit 2) | | |
| | I-05 (low-tide) | D-001 on 10/17/2013 01:45 = 6.7 L (Unit 2) | | |
| | I-06 (low-tide) | D-001 on 10/18/2013 02:30 = 6.7 L (Unit 2) | | |
| | | | Main Inlet | **Extended Inlet |
| Travel Time and Centroid RhoWT Concentration | I-04 (low-tide) | 33.8 minutes, 10 µg/L | 11.3 minutes, 8 µg/L | 10.6 minutes, 8 µg/L |
| | I-05 (low-tide) | 33.7 minutes, 10 µg/L | 9.0 minutes, 8 µg/L | 11.0 minutes, 8 µg/L |
| | I-06 (low-tide) | 31.6 minutes, 11 µg/L | 9.3 minutes, 8 µg/L | 11.1 minutes, 8 µg/L |

*Predicted Tide Elevation at Ft. Pierce Inlet: I-04 = 0.4 ft, I-05 = 0.3 ft, I-06 = 0.2 ft
** Tracer was also measured at the extended inlet to assess travel time differences between inlets

## 3.2 Phase 1 Decay Evaluation

Geosyntec conducted Phase 1 decay evaluations from January 9, 2013 through January 11, 2013. During Phase 1, Geosyntec demonstrated laboratory capability, identified appropriate spike concentrations of sodium hypochlorite, and preliminarily assessed the ability of the PFO model to fit decay response data.

### 3.2.1 Demonstration of Laboratory Capability

Geosyntec conducted seven replicate tests of a known 1 mg/L standard solution of Total Chlorine on December 12, 2012. The results of replicate tests are listed in Table 4. Single-operator precision for these tests against the 1 mg/L standard solution was 0.026 mg/L and less than ASTM (2008) precision estimates. Single-operator bias for 7 replicate analyses was low (-6%) compared to the standard solution. On this basis, Geosyntec determined the HACH AutoCAT and laboratory procedures implemented in this demonstration were adequate to support TRO decay studies.

**Table 4. Results of Laboratory Demonstration Study using HACH AutoCat 9000 Amperometric Titrator**

| Test Description | Total Residual Chlorine (mg/L) | 95% Confidence Interval (mg/L) |
|---|---|---|
| Ref. Std. = 1.00 mg/L TRC | 0.975 | ± 0.197 |
| Ref. Std. = 1.00 mg/L TRC | 0.980 | ± 0.050 |
| Ref. Std. = 1.00 mg/L TRC | 0.927 | ± 0.137 |
| Ref. Std. = 1.00 mg/L TRC | 0.925 | ± 0.057 |
| Ref. Std. = 1.00 mg/L TRC | 0.941 | ± 0.084 |
| Ref. Std. = 1.00 mg/L TRC | 0.938 | ± 0.056 |
| Ref. Std. = 1.00 mg/L TRC | 0.911 | ± 0.055 |
| Study Single-Operator Precision: 0.026<br>ASTM (2008) Single-Operator Precision: 0.084<br>Study Single-Operator Bias: - 0.058 (underestimate) | | |

### 3.2.2 Initial Bench-Scale Sampling and Decay Series Analysis

During Phase 1, Geosyntec collected five separate samples from EFF-2 and spiked the samples with sodium hypochlorite to achieve an initial chlorine concentration that ranged from 661 µg/L to 47 µg/L. Geosyntec then measured TRO decay resulting from these n=5 initial concentrations (Appendix D) for a period of approximately 60 minutes per series using the HACH AutoCat 9000 titrator. Phase 1 decay time series suggested that initial concentrations greater than 100 µg/L were needed to achieve a consistent and smooth decay response. To support adequate measurement (at least 5 response values) of decay within the relevant concentration range (i.e., near criterion of 100 µg/L), Geosyntec determined that initial concentrations between 100 and 200 µg/L would be targeted during Phase 2 bench-scale evaluations.

Data obtained during Phase 1 were also used to assess the fit of the PFO model (Equation 2) as compared to the common First Order (FO) decay model described by Chapra (1997). As depicted in Figure 3, the PFO model fit Phase 1 data better than the first order model. The PFO model had a lower Root Mean Square Error (RMSE) and greater correlation to data ($r^2$) (Figure 3). In addition, several researchers including Gang et al. (2003) have identified physical and chemical processes that necessitate chlorine decay be modeled with fast and slow reacting components. On this basis, Geosyntec selected the PFO model to quantify TRO decay in the discharge canal.

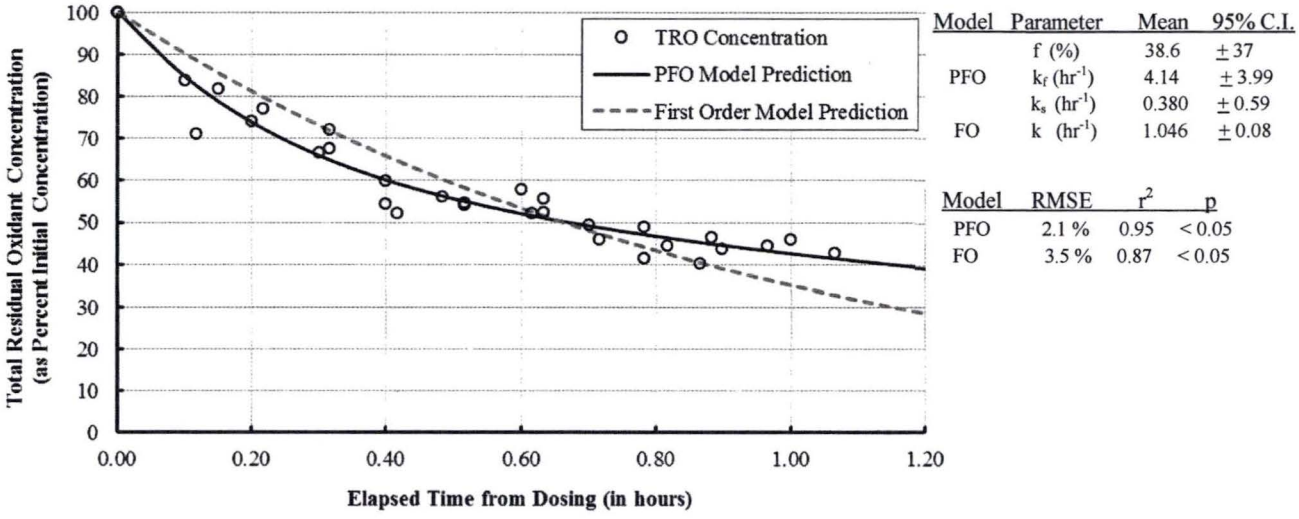



**Figure 3. Bench-Scale Total Residual Oxidant Data and Model Predictions for Phase 1 Decay Series with Initial Concentration Greater than 100 µg/L (n = 32)**

## 3.3. Phase 2 Bench-Scale Decay

Geosyntec conducted Phase 2 decay evaluations from January 28, 2013 through December 10, 2014. Phase 2 data are included as Appendix E. During Phase 2, Geosyntec quantified TRO decay in canal water samples at the bench-scale according to the approved POS.

In this section, we present bench-scale decay rates measured under varying environmental conditions during the two-year sampling period. In addition, we use Phase 2 data to calibrate a robust PFO model that may be used to predict TRO behavior along the discharge canal.

Half-life ($t_{50}$) is a standard metric used to describe the degradation rate of an environmental constituent. Half-life is the amount of time required for 50% of the initial mass to be degraded. Mean $t_{50}$ for TRO during the study period was 11 minutes (standard deviation = 7.6 minutes, n = 70). As depicted in Figure 4, decay was slowest in February (mean $t_{50}$ = 23 minutes, n = 6) and fastest in October (mean $t_{50}$ = 6.9 minutes, n = 6). Water temperature and half-life were not significantly correlated ($r^2 < 0.1$, $p > 0.05$, n= 70) indicating that Arrhenius temperature relationships (Chapra, 1997) play a minor role in describing TRO decay variability compared to other factors. Greater levels of water column organic matter were visually observed by FPL and Geosyntec on dates coinciding with faster decay rates. Such observations are consistent with literature as chlorine can react quickly with organic matter via oxidation, addition, and substitution reactions (Koechling, 1998).

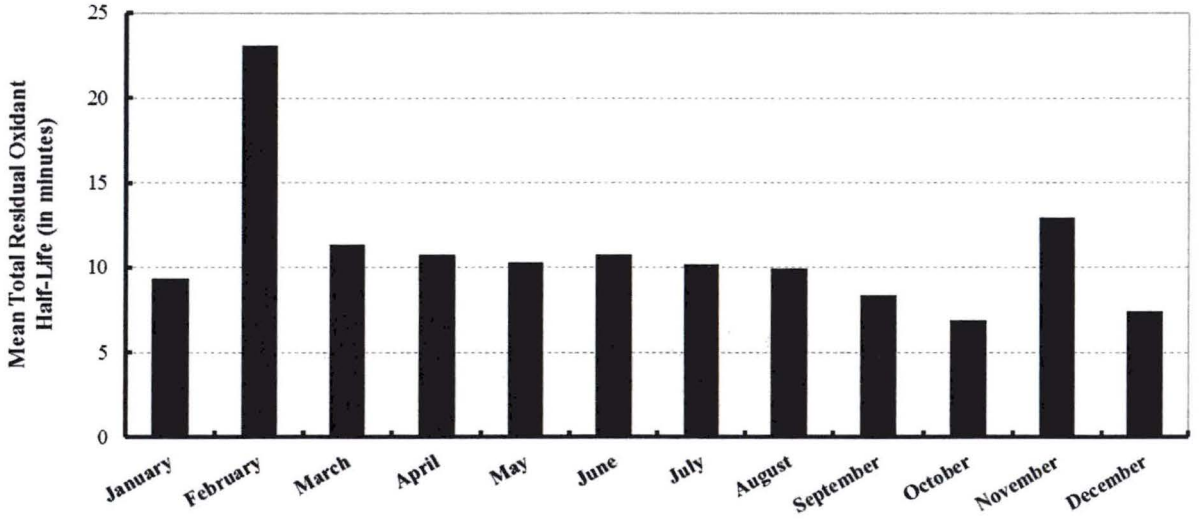


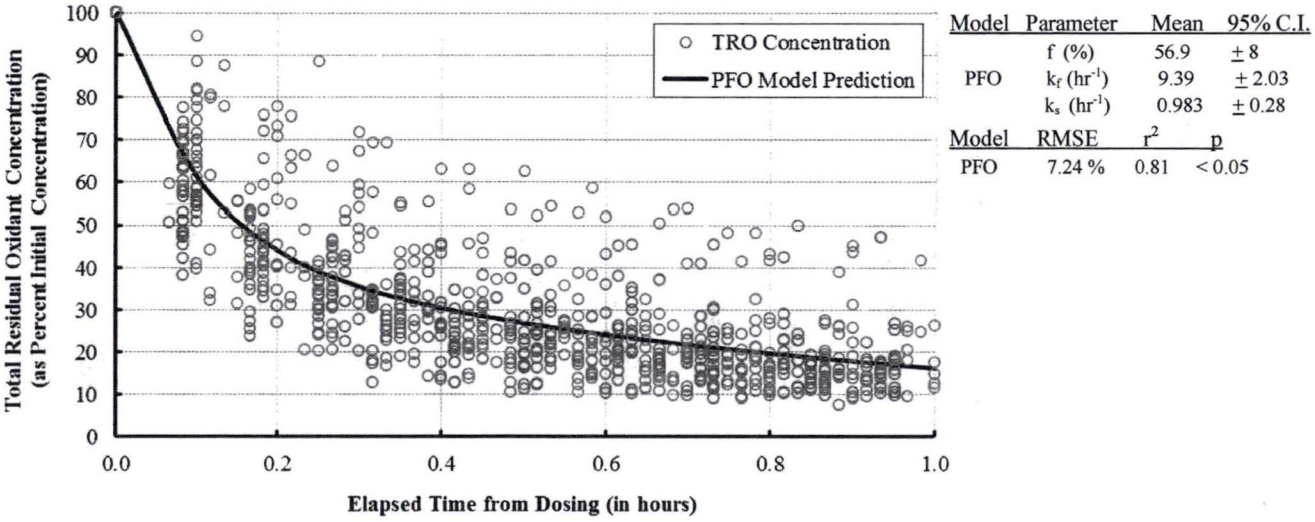

**Figure 4. Bench-Scale Total Residual Oxidant Half-Life by Month for Phase 2 Decay Series Conducted from January 28, 2013 through December 10, 2014 (n = 70)**

To aid in predicting TRO decay behavior within the canal, the PFO model (Figure 5) was calibrated with the entire Phase 2 bench-scale dataset (n = 831 discrete TRO measurements). As with Phase 1 activities, we observed during Phase 2 that TRO decays rapidly during degradation of fast-reacting components followed by a gradual decline of the slow-reacting fraction. According to the calibrated PFO model (Figure 5), only 5% of the fast-reacting fraction of TRO remains after an elapsed time of 19.2 minutes (0.32 hrs) following dosing canal samples with sodium hypochlorite. That is, slow decay reactions ($k_s$ = 0.98 $hr^{-1}$) principally influence the TRO degradation process after t = 19 minutes from dosing. As a result, slow reacting TRO likely

dominates composition at EFF-2 because travel time to EFF-2 from dosing at the intakes is at least 34 minutes during low-tide (Table 3). Results from the field verification test presented in Section 3.4 suggest a faster decay rate than the PFO bench-scale rates.

Evidence suggests that slow decaying forms likely occurring near EFF-2 may not threaten aquatic life because chronic Whole Effluent Toxicity (WET) tests conducted on EFF-2 samples have passed required thresholds (i.e., $IC_{25}$ > 100% effluent) for multiple years. WET test results are further discussed in Section 3.5.

**Figure 5. Bench-Scale Total Residual Oxidant Data and Model Predictions for Phase 2 Decay Series for the Period of January 28, 2013 through January 10, 2014 (n = 831)**




## 3.4. Field-Scale Verification

Geosyntec conducted the field verification component of the TRO attenuation study on December 9, 2014 during low-tide conditions. Field verification data are included as Appendix F and TRO recovery curves are provided in Appendix G. Quantification of *in-situ* decay rates were performed by injecting sodium hypochlorite and subsequent measurement of TRO concentrations at EFF-2 and the Main Inlet. In this section, we present the results of the field-scale degradation assessment and provide a comparison to TRO decay rates determined from Phase 2 bench-scale studies.

To obtain measurable TRO concentrations in the discharge canal, FPL gravity fed 200 gallons of sodium hypochlorite solution (10.5% by weight) into each branch of D-001 over a period of 19 minutes (Table 5). Center of mass (centroid) TRO concentrations obtained at EFF-2 and the Main Inlet were 3.7 µg/L and 8.0 µg/L, respectively. Operational injections of sodium hypochlorite prior to the field-scale study injection potentially contributed to greater TRO concentration at the Main Inlet compared to EFF-2.

Given such interference, it is not possible to directly calculate TRO decay between EFF-2 and Main Inlet. However, if we assume that TRO concentrations at EFF-2 are unaffected by previous operational injections, estimation of *in-situ* decay may be approximated as the difference between the injection pulse chlorine concentration and centroid TRO concentration at EFF-2.

**Table 5. Summary of Total Residual Oxidant Field-Scale Decay Evaluation in the St. Lucie Discharge Canal conducted on December 9, 2014**

| Study Characteristic | Segment 1<br>Outfall D-001 to EFF-2 | Segment 2<br>EFF-2 to Main Inlet |
|---|---|---|
| Injection Time, Volume, and Mass | D-001 Time: 12/9/2014 15:36 – 15:55<br>Total Volume: 400 gallons (1,503 L) of 10.5% NaOCl solution<br>Chlorine Mass: 75.6 kg (estimated from solution stoichiometry) | |
| Travel Time, Centroid TRO Concentration | Travel Time: 35.5 minutes<br>Centroid Concentration: 3.7 µg/L | Travel Time: 12 minutes<br>Centroid Concentration: 8.0 µg/L |

The mean chlorine injection pulse concentration is estimated to be 1.12 mg/L. Estimation of the chlorine pulse concentration is based on an injection of 400 gallons of a 49.98 gram per liter (g/L) chlorine solution (10.5% NaOCl by weight) into a cumulative discharge flow of 1,350 MGD over a period of 19 minutes. As with the PFO model, if we express the EFF-2 TRO concentration (0.037 mg/L TRO) as a percent of the initial concentration (1.12 mg/L chlorine), we estimate the value of 3.3% of the initial concentration at an elapsed time of 35.5 minutes (Table 5). In comparison, the calibrated bench-scale PFO model predicts that a mean value of 24% of the initial concentration will remain after 35.5 minutes (0.59 hours) following dosing. In other words, relative concentrations (i.e., $C / C_o$) measured during the field-scale assessment were approximately 7-fold less than predicted by the PFO model calibrated with bench-scale data.

The effect of scale on environmental rates and processes is an ongoing area of research. It is a common occurrence for apparent reaction or process rates measured in the field or pilot-scale to be considerably different than the laboratory counterpart (Chapra, 1997; Hill and Root, 2014). As reported by Carpenter et al. (1981), chlorine-produced oxidants decayed much more quickly

(a factor of 10) at the field-scale than under controlled laboratory dosing conditions at a power plant on the Patuxent estuary in Maryland. While the 7-fold difference between bench and field-scale obtained during this study is based on limited field-scale data, it seems reasonable to conclude that decay in the discharge canal likely proceeds at a faster rate and to a greater extent than quantified from Phase 2 bench-scale studies.

## 3.5. Effluent Toxicity, Diffuser Dilution, and Mixing Considerations

According to the Rule 62-4.244 Florida Administrative Code (F.A.C.), mixing zones for open ocean discharges may be allowed. Such mixing allowances may be granted following adequate demonstration of (1) absence of toxicity, (2) achieved mixing, and (3) required mixing. Each of these mixing zone requirements are informed and discussed below.

A mixing allowance may be considered if the applicant demonstates that toxicity is absent from effluent. More specifically, Subparagraph 62-4.244(3)(c)1 F.A.C. offers:

*"The effluent, when diluted to 30% full strength with water having a salinity representative of the average receiving-water's salinity, shall not cause more than 50% mortality in 96 hours (96 hr. $LC_{50}$) in a species significant to the indigenous aquatic community. "*

In review of chronic WET tests conducted on samples collected at EFF-2 for the past 3-years, it has been observed that chronic toxicity was absent at 100% effluent strength in the reviewed tests (n = 8). These WET tests were conducted for the period of October 3, 2011 through August 25, 2014. Further, we note samples collected at EFF-2 were not dechlorinated prior to WET testing. As WET test taxa (i.e., *Mysidopsis bahia, Menidia beryllina*) may be considered representative of species significant to the indigenous community, and chronic thresholds ($IC_{25}$) were achieved at greater than 30% effluent, it seems reasonable that effluent toxicity requirements specified at Subparagraph 62-4.244(3)(c)1 F.A.C. have been and are being met.

With respect to achieved mixing, the MULDIF plume model results approved by FDEP as part of the Thermal Study at the Plant (Appendix B) predicted a range of surface dilution values achieved by existing Y and multiport diffusers (Table 6). Worst-case dilution predicted by the MULDIF model was 3.9:1 for the Y-diffuser and 11.1:1 for the multiport diffuser. As flow from D-001 was assumed to distribute equally between diffusers (Appendix B), the worst-case flow-weighted dilution ratio for the diffuser pair is 7.5.

**Table 6. Surface Dilution Ratios Predicted by the MULDIF Plume Model for Existing Diffuser Structures at the St. Lucie Plant**

| Case | Case Description | Dilution Ratio at Surface |
|---|---|---|
| 1 | Y-diffuser, Existing Conditions | 4.33 |
| 2 | Y-diffuser, Post-Uprate Discharge at 113°F | 4.34 |
| 3 | Y-diffuser, Post-Uprate Discharge at 117°F | 3.88 |
| 4 | Multiport diffuser, Existing Conditions | 12.37 |
| 5 | Multiport diffuser, Post-Uprate Discharge at 113°F | 12.44 |
| 6 | Multiport diffuser, Post-Uprate Discharge at 117°F | 11.08 |

According to sub-paragraph 62-4.244(3)(c)3.a. F.A.C., "...demonstration of required dilution shall be determined by the ratio of the worst case effluent concentration (WCEC) minus the worst case background concentration to the criterion minus the worst case background concentration." Additionally, the Rule specifies that the WCEC be calculated as the effluent concentration 95th percentile for the most recent 3-year period of monitoring data (Appendix H). The 95th percentile of TRO concentrations measured at EFF-2 and listed on Discharge Monitoring Reports is 40 ug/L for the period of March 2011 to February 2014 (Table 7). On this basis, a dilution ratio of 4 (Table 7) is required to achieve the marine WQS of 10 µg/L TRO without consideration of decay processes. Dilution needed to achieve the WQS is reduced as a result of TRO decay occurring between EFF-2 (monitoring point) and the diffuser inlets. According to the bench-scale PFO model, TRO decays at a rate of 0.98 $hr^{-1}$ near EFF-2 (Section 3.3), leading to a lower required dilution ratio of approximately 3.3 (Table 7). Insufficient sample size prevents calculation of required dilution based on field-scale decay.

**Table 7. Descriptive Statistics for Total Residual Oxidant Concentrations reported on Discharge Monitoring Reports and Required Dilution for Diffusers at the St. Lucie Plant**

| Parameter | Unit | Value |
|---|---|---|
| Mean | µg/L as TRO | 14.0 |
| Geometric Mean | µg/L as TRO | 9.6 |
| Maximum | µg/L as TRO | 50.0 |
| Minimum | µg/L as TRO | < 5.0 |
| 95th Percentile | µg/L as TRO | 40.0 |
| Sample Number | n (#) | 36 |
| Required Dilution (no decay) | dimensionless | 4.0 |
| Required Dilution (*bench-scale decay) | dimensionless | 3.3 |
| Required Dilution (**field-scale decay) | dimensionless | < 3.3 |
| Predicted Dilution from MULDIF (***flow-weighted, worst-case) | dimensionless | 7.5 |

*calculated as decay of 95th percentile DMR value at $k_s = 0.98\ hr^{-1}$ for 11 minute travel time to inlets from EFF-2.
**assumed less than bench-scale decay based on results obtained at EFF-2 from field-scale study.
***average of case 3 and case 6 in Table 6.

In this section, we have provided data and information that supports a mixing zone for TRO at the St. Lucie Plant. More specifically, we have cited or provided data that indicate:

- According to WET tests performed by others, toxicity to species representing significant and indigenous taxa is absent at thresholds specified by the FAC in effluent sampled at EFF-2;
- Dilution is needed to achieve the TRO WQS because the WCEC is predicted to exceed the WQS when accounting for decay measured at the bench-scale; and
- Dilution ratios provided by existing diffuser structures are predicted to equal or exceed dilution needed to achieve TRO WQS at the ocean surface.

For these reasons, we believe a mixing zone for TRO is justified and could be pursued during the next permit renewal. With this recommendation we note two implicit margins of safety in

allocating a mixing allowance and determining effluent limitations. The first safety factor is the difference between *in-situ* decay of TRO and decay measured at the bench-scale. Effluent limitations and mixing allowances based on bench-scale decay are likely to be conservative because decay *in-situ* is likely greater than bench-scale. The second safety factor is that physical dispersion (e.g., attenuation of peak concentrations) and decay of TRO in the discharge pipes leading to the diffusers has not been included in this analysis. Additional decay time and friction from discharge pipes will further attenuate TRO prior to discharge from the diffusers. These implicit safety factors provide additional assurance that a mixing allowance would be protective of aquatic life beneficial uses.

## 3.6. Summary and Recommendations

According to Section VI.6 of the St. Lucie permit, FPL is required to design and implement a POS to reaffirm that the discharge from the diffusers meets the Class III Marine WQS of 0.01 mg/L. In accordance with this permit requirement, FPL and their contractor prepared an FDEP-approved POS dated June 2012 (Rev 1) (Appendix A). Geosyntec successfully implemented the TRO POS from January 9, 2013 to December 10, 2014 by (1) conducting low-tide travel time studies, (2) quantifying TRO decay rates at the bench-scale, and (3) performing a field-scale decay test.

Travel time during low-tide with both units in operation between EFF-2 and inlets to the diffuser was measured to be approximately 11 minutes (0.19 hours). Decay rates quantified at the bench-scale ($k_f$ = 9.39 $hr^{-1}$, $k_s$ = 0.98 $hr^{-1}$) using the PFO model indicate that TRO discharged at the current effluent limit of 100 µg/L at EFF-2 will not decay to the 10 µg/L WQS at the diffuser inlets. Results from decay studies at the field-scale suggest the *in-situ* rate is greater than predicted from bench-scale studies.

Review of available WET test data, approved diffuser modeling results, and effluent DMRs justify a mixing zone allowance for TRO at the St. Lucie Plant. Therefore, we recommend a mixing zone allowance pursuant to FAC 62-4.244(3) be considered by FDEP. Any revised effluent limitations for TRO at EFF-2 will vary according to the size of mixing zone and associated dilution ratio ultimately granted to the Plant. For example, use of the flow-weighted worst-case dilution ratio of 7.5:1 (Tables 6 and 7) and a bench-scale decay rate of $k_s$ = 0.98 $hr^{-1}$ would result in a water quality-based wasteload allocation of approximately 90 µg/L TRO. That is, a TRO concentration of 90 µg/L (at EFF-2) is calculated to meet the 10 ug/L WQS at the surface of the Atlantic Ocean under the dilution and decay assumptions listed above.

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# APPENDIX A

REPORT

# TOTAL RESIDUAL OXIDANTS PLAN OF STUDY

## Florida Power & Light Company
## St. Lucie Nuclear Power Plant

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**June 2012 (Rev.1)**

**113-87706**

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# Table of Contents

1.0 INTRODUCTION ..... 1
2.0 PLAN OF STUDY OBJECTIVES ..... 3
2.1 Dye Study ..... 3
2.2 Decay Study ..... 4
2.3 Field Validation ..... 5
3.0 INSTRUMENTATION ..... 6
4.0 DATA COLLECTION ..... 7
5.0 SCHEDULE ..... 8
6.0 REPORTING ..... 9

## List of Figures

Figure 1 St. Lucie Nuclear Plant and Sampling Location EFF-2

## Attachments

Attachment A Material Safety Data Sheet for Rhodamine WT

## 1.0 INTRODUCTION

The St. Lucie Nuclear Power Plant (St. Lucie Plant) [National Pollutant Discharge Elimination System (NPDES) Permit No. FL 0002208] is located on a 1,132-acre site on Hutchinson Island in St. Lucie County, Florida. The Plant consists of two nuclear-fueled electric-generating units. Unit 1 received an operating license in March 1976 and Unit 2 in April 1983. The St. Lucie Plant is located on the widest section of Hutchinson Island. The island is separated from the mainland on its western side by the Indian River Lagoon (IRL) and borders the Atlantic Ocean on the east (see Figure 1).

The source of once-through cooling water for the St. Lucie Plant is the Atlantic Ocean. Cooling water is treated daily using sodium hypochlorite as an anti-fouling agent. There are no de-chlorination processes in place at the St. Lucie Plant, and Total Residual Oxidants (TRO) are monitored in the cooling water prior to discharge to the Atlantic Ocean.

The FDEP issued an Administrative Order effective September 29, 2011, along with the Industrial Wastewater Facility (IWWF) permit modification that specifies a new TRO monitoring requirement for the Plant. The following is the Condition 6 language for the TRO monitoring requirement:

> "6. No later than 90 days after the effective date of this Order, the Permittee shall prepare and submit for the Department's review and approval a plan of study (Total Residual Oxidants POS) that includes a schedule. The Total Residual Oxidant POS shall be designed and implemented to reaffirm that the discharge from the diffusers meets the total residual oxidants Class III marine water quality standard of 0.01* mg/L. The study shall last no less than 24 months from commencement. The results of the study shall be submitted in a report (Total Residual Oxidants Report) to the Department for review and approval no later than 60 days after the approved Total Residual Oxidant POS completion date. The schedule shall include milestones and the completion date."
>
> *Corrected limit, Condition 6 misstates the limit as 0.1 mg/L.

The discharge monitoring point for the St. Lucie Plant is EFF-2 (see Figure 1) and is located within the discharge canal. The Plant's previous IWWF permit allowed for a TRO concentration of 0.1 milligram per liter (mg/L) at EFF-2 for compliance. This assumed that the TRO would decay prior to the ocean discharge from the diffusers. The Class III marine water quality standard is 0.01 mg/L at the point of discharge.

This Plan of Study (POS) has been designed to reaffirm compliance with this water quality standard. Should the data collected not support compliance in the Atlantic Ocean, alternative limits at EFF-2 will be evaluated as predictors for compliance in marine waters. This POS outlines the methods to generate data on TRO decay in seawater under conditions similar to the discharge canal. These data and cooling water travel-time calculations will be used to estimate the TRO at the point of discharge.

There are several processes that result in the decay of chlorine in seawater. Chlorine reacts readily with some organic and inorganic compounds, becoming reduced and no longer contributing to TRO. Sunlight can also cause chlorine decay. The rapid decay of chlorine in seawater is dependent on the concentration of oxidizable material (such as fouling organisms) or 'demand' for chlorine. However, if the chlorination dose exceeds the demand, residual oxidants measured as TRO, will remain in the water and continue to decay over time.

## 2.0 PLAN OF STUDY OBJECTIVES

The objective of the TRO POS is to develop a procedure and data to estimate and potentially reaffirm that the discharge from the Plant's diffusers meets the TRO Class III marine water quality standard of 0.01 mg/L. TRO is currently measured at EFF-2 and the majority of the time it is below the detection limit of 0.01 mg/L at this monitoring point. TRO has been detected above 0.01 mg/L at EFF-2, and this POS will evaluate the decay rate of TRO in the discharge canal and pipes to calculate the TRO concentrations at the diffusers during events of measurable TRO at EFF-2.

There are three factors that determine the concentration of TRO in seawater at the point of discharge from the St. Lucie Plant: the initial concentration, the decay rate, and the travel time. The initial concentration is controlled by St. Lucie Plant operations (see St. Lucie Plant Procedures 0-NOP-40.01 and 0-NOP-40.02). The POS includes three components to evaluate the TRO decay rate, determine cooling water travel time, and validate the results:

- Dye Study – A dye study will be conducted within the St. Lucie Plant discharge canal to estimate travel times of cooling water as it flows through the discharge canal.
- Decay Study – A TRO decay study will be conducted to measure the rate of decay of TRO in cooling water.
- Field Confirmation – A Plant-level experiment replicating conditions when elevated TRO levels are detected at EFF-2

### 2.1 Dye Study

The dye study will be used to measure the travel time of water in the Plant's cooling water system. The interval of primary importance will be from EFF-2 to the entrances to the discharge pipes. Travel time within the canal will vary with the number of circulating pumps running (total flow) and tidal influences. To provide a conservative estimate of TRO decay between EFF-2 and the point of discharge to the Atlantic Ocean, the shortest potential travel time from EFF-2 to the point of discharge will be used.

Under typical St. Lucie Plant operating conditions, the volume of the discharge canal and, therefore, residence time of cooling water, will be lowest at low tide. Therefore, the dye study will be conducted at Mean Lower Low Water (MLLW). At least three measurements of travel time will be conducted under full operating conditions (both units and all circulating pumps running) and three measurements when only a single unit (four circulating pumps) is operating. The injection point for the Rhodamine WT dye will be determined in the first phase of the project but will be appropriate to provide the necessary travel times. Rhodamine WT fluoresces and can be detected using a fluorometer at very low concentrations [<1 microgram per liter (µg/L)]. For each dye study, it is estimated that approximately 1 gallon of 20-percent Rhodamine WT solution will be required to achieve a peak concentration of 100 to 300 parts per billion (ppb) at EFF-2 and the entrance to the discharge pipes. This concentration should be easily detectable but not visible. The Material Safety Data Sheet (MSDS) for Rhodamine WT is provided as

Attachment A. Time of travel from the chlorine injection point to the sampling points (at a minimum, EFF-2 and the entrance to the discharge pipes) will be measured as the time from injection to the time when the maximum concentration is observed at each sampling point. The dye study time-of-travel measurements may be conducted at any point during the 24-month sampling window and will be scheduled when tidal and Plant operating conditions provide the proper circumstances for the study.

## 2.2 Decay Study

The decay study will estimate the rate of decay of TRO in cooling waters under the varying environmental and water quality conditions present over the course of the 24-month study period. Understanding the rate of decay of TRO in cooling waters has regulatory relevance only when there is a detectable concentration of TRO (concentration >0.01 mg/L) in cooling waters at EFF-2. If the discharge water from the circulating pumps is well mixed and the TRO is detectable at EFF-2, it can be assumed that the combined chlorine demand of all cooling waters has been fulfilled and TRO decay will continue at a lower rate.

To assess the decay rate of TRO in cooling waters, it is important to identify the conditions under which TRO would be detectable at EFF-2. This is expected to occur when the chlorination dosage exceeds the demand from the rapid oxidation reactions. Actual detection of TRO in cooling water at EFF-2 is an intermittent and unpredictable occurrence. It will therefore be necessary to simulate these conditions in order to measure the TRO decay rate in cooling waters near the EFF-2 sampling point. To accomplish this, cooling water will be sampled from EFF-2 and spiked with sodium hypochlorite until a concentration of approximately 0.1 mg/L is reached. It is expected that initial additions of sodium hypochlorite will fulfill any residual chlorine demand, after which further sodium hypochlorite additions will increase the TRO concentration. This will simulate the conditions under which TRO would be detectable at EFF-2. Additionally, through the use of water baths and appropriately designed sample vessels, the physical conditions (temperature, sunlight, etc.) that water would be subjected to in the discharge canal will be replicated. By monitoring the concentration of TRO in the spiked sample of water over time, the decay rate can be calculated. Measurements will be made at approximately 4-minute intervals until TRO concentrations are no longer measureable (<0.01 mg/L) or for a maximum of 1 hour. This will be performed three times per sampling event, and 24 monthly events are planned.

The decay study will be implemented in two phases. The first phase will validate the technique of dosing cooling water samples with excess sodium hypochlorite to generate a TRO concentration of 0.1 mg/L and subsequently monitoring its decay. The second phase will consist of 24 monthly sampling events to measure the decay rate of TRO under the naturally variable water quality characteristics of the cooling water. Modifications may be made to the sampling design during the second phase based on the results from the first phase.

Should the first 6 months of data collection indicate that the TRO decay rate is not sufficient to generate levels of TRO at the diffusers that are in compliance with the Class III marine water quality standard, FPL may request a re-evaluation of this permit requirement based on the anticipated magnitude and frequency of TRO discharges that exceed the water quality standard.

## 2.3 Field Validation

A Plant-scale verification of the results of the decay study will be conducted within the final 6 months of the study period. Sodium hypochlorite will be added to intake cooling waters in concentrations sufficient to produce a measurable TRO concentration at EFF-2. TRO concentration will be monitored at EFF-2 and at the intake to the discharge pipes, allowing calculation of in-situ TRO decay rates. Results of the validation study will be compared to the results of the decay study.

## 3.0 INSTRUMENTATION

TRO in seawater can be measured by several methodologies. Amperometric titration is the method that will provide the necessary accuracy and precision in the range of concentrations to be tested. Development of this POS is based on the assumption that TRO concentration can be measured by amperometric titration approximately every 4 minutes. The travel time from EFF-2 to the point of discharge (the timeframe of interest) is estimated to be in the range of 15 to 20 minutes which will allow approximately ten measurements to be made using two sets of instrumentation.

## 4.0 DATA COLLECTION

All TRO measurements will be conducted according to the procedures defined in 40 CFR 136.3. Data collection efforts for this project will follow FDEP-approved quality assurance/quality control (QA/QC) procedures.

## 5.0 SCHEDULE

A detailed schedule for implementing the POS is presented in the table below:

| Milestone | Duration | Start Date | End Date |
|---|---|---|---|
| Submittal of POS to FDEP | | 12/28/2011 | |
| Approval by FDEP | 90 days | 7/20/2012 | |
| FPL contracting and procurement | 60 days | 7/20/2012 | 9/25/2012 |
| Contractor mobilization | 30 days | 9/25/2012 | 10/24/2012 |
| Dye study | 2 years | 10/24/2012 | 10/24/2014 |
| Decay study - Phase 1 | 30 days | 10/24/2012 | 11/23/2012 |
| Decay study - Phase 2 | 2 years | 11/23/2012 | 11/23/2014 |
| Plant-level verification study | 6 months | 5/23/2014 | 11/23/2014 |
| Final TRO Report to FDEP | 60 days | 11/24/2014 | 01/22/2015 |

## 6.0 REPORTING

A status report will be completed every 6 months during the study period, and a final TRO Report will be submitted within 60 days of completion of the study.

**GOLDER ASSOCIATES INC.**

Kennard F. Kosky, P.E.
Principal

Isabel C. Johnson
Associate and Practice Leader

FIGURE

G:\PROJECTS\FPL\St_Lucie\113_87706\A_0200_Final_PlanOfStudy\MapDocuments\11387706_A001_MonitoringLocation.mxd

**LEGEND**

- EFF-2

**REFERENCES**

1. Monitoring Station, Golder Associates Inc., 2011
2. Aerial Imagery, USDA/FSA - Aerial Photography Field Office, 2007

0 350 700 Feet

| REV | DATE | DES | REVISION DESCRIPTION | GIS | CHK | RVW |
|---|---|---|---|---|---|---|

PROJECT

FPL
ST. LUCIE NUCLEAR PLANT

TITLE

**SAMPLING LOCATION EFF-2**

Golder Associates
Gainesville, Florida

| | | | | |
|---|---|---|---|---|
| PROJECT No | | 113-87706 | FILE No | 11387706_A001 |
| DESIGN | SJL | 12/16/11 | SCALE AS SHOWN | REV 0 |
| GIS | NRL | 12/16/11 | | |
| CHECK | SJL | 12/16/11 | | |
| REVIEW | ICJ | 12/16/11 | | |

**FIGURE 1**

**ATTACHMENT A**

# Material Safety Data Sheet

Issue Date: 12/6/2006



**Section 1: Chemical Product and Company Identification**

Cat#: 19922

Part Name: RHODAMINE WT WATER TRACING DYE

Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976
Telephone #215-343-6484

**Section 2: Composition/ Information on Ingredients**

| Item# | Name | CAS# | % in product |
|---|---|---|---|
| 1 | Rhodamine WT | CASRNHX19922 | 5 |
| 2 | Water | 007732185 | 95 |

OSHA (ACGIH) Exposure Limits

| | | TWA | | STEL | | CEILING | |
|---|---|---|---|---|---|---|---|
| | | ppm | mg/ | ppm | mg/m3 | ppm | mg/m3 |
| CAS#: 007732185 | IDLH: NE | | | | | | |
| OSHA | | NE | NE | NE | NE | NE | NE |
| ACGIH | | NE | NE | NE | NE | NE | NE |
| CAS#: CASRNHX1992 | IDLH: NE | | | | | | |
| OSHA | | NE | NE | NE | NE | NE | NE |
| ACGIH | | NE | NE | NE | NE | NE | NE |

**Section 3: Hazards Identification**

Causes eye irritation.

Hazard Ratings:
These ratings are Polysciences' Inc. own assesments of the properties of the material using the ANSI/NFPA 704 Standard.
Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

| Health | Flammability | Reactivity |
|---|---|---|
| 2 | 0 | 1 |

**Section 4: First Aid Measures**

Flush eyes with flowing water for at least 15 minutes.

If breathing is difficult, contact emergency personnel.

If swallowed, induce vomiting as directed by medical personnel.

Remove contaminated clothing.

Remove to fresh air.

Wash skin with deluge of water for at least 15 minutes.

**Section 5: Fire Fighting Measures**

Flash point, deg F.: no data Method: no data

UEL: no data LEL: no data Autoignition temperature, deg. F.: no data

Flammability Classification: no data Flame Propagation Rate: no data

Hazardous Combustion Products: no data

**Section 6: Accidental Release Measures**

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

Absorb liquids on absorbent material.

Contain spilled liquids.

**Section 7: Handling and Storage**

Store at room temp

**Section 8: Exposure Controls/ Personal Protection**

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

Use chemical splash goggles and face shield.

**Section 9: Physical and Chemical Properties**

| | | | |
|---|---|---|---|
| Formula: | no data | vapor pressure: | no data |
| Formula Weight: | no data | vapor density: | heavier than air |
| boiling point: | no data | Specific gravity: | 0 |
| melting point: | no data | ph: | 10.5 @1.0 % |
| solubility: | miscible | appearance: | fluorescing red liquid |

**Section 10: Stability and Reactivity**

Chemical Stabilit no data
Conditions to Avoid: no data
Incompatibility with other materials: no data
Hazardous Decomposition Products: no data
Hazardous Polymerization: will not occur

**Section 11:Toxicological Information**

Acute Data: no data
Subchronic data: no data

**Section 12: Ecological Information**

LC50: >320 mg/l rainbow trout (96 hour)
LC50: 170 mg/l daphnia magna
No developmental abnormalities or toxicity to oyster larvae at 100 mg/L.

**Section 13: Disposal Considerations**

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

| CAS# | Waste Code | Regulated Name |
|---|---|---|
| 007732185 | not listed | not listed |
| CASRNHX19922 | not listed | not listed |

**Section 14: Transportation Data**

Refer to bill of lading or container label for DOT or other transportation hazard classification , if any.

**Section 15: Regulatory Information**

All components of this product are on the TSCA public inventory.

Prop 65 - Column A identifies those items which are known to the State of California to cause cancer. Column B identified items which are known to the State of California to cause reproductive toxicity.

| CAS# | Column A | Column B |
|---|---|---|
| 007732185 | no | no |
| CASRNHX19922 | no | no |

State Regulatory Information :If a CAS# is listed below this material is subject to the listed state right-to-know requirements.

| CAS# | |
|---|---|
| 007732185 | not listed |
| CASRNHX199 | not listed |

SARA Toxic Release Chemicals(as defined in Section 313 of SARA Title III)
This list identifies the toxic chemicals, including their de minimis concentrations for which reporting is required under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). The list is also referred to as the Toxics Release Inventory (TRI) List.

| CAS# | Regulated name | de minimis conc. % | Rep. Thres. |
|---|---|---|---|
| 007732185 | not listed | not listed | not listed |
| CASRNHX19922 | not listed | not listed | not listed |

SARA Extremely Hazardous Substances and TPQs
This list includes hazardous chemicals as defined in 29 CFR 1910.1200(c); and extremely hazardous substances regulated under Section 302 of SARA Title III with their TPQs (in pounds), as listed in 40 CFR 355, Appendices A and B.

| CAS# | Regulated name | TPQ (pounds) | EHS-RQ(pounds) |
|---|---|---|---|
| 007732185 | not listed | not listed | not listed |
| CASRNHX19922 | not listed | not listed | not listed |

CERCLA
The hazardous substances, and their reportable quantities (RQs) are listed in the federal regulations at 40 CFR Part 302, Table 302.4. Release of a CERCLA hazardous substance in an amount equal to or greater than its RQ, in any 24-hour period, must be reported to the National Response Center at (800) 424-8802.

| CAS# | Regulated name | RQ (pounds) |
|---|---|---|
| 007732185 | Not listed | Not listed |
| CASRNHX19922 | Not listed | Not listed |

**Section 16: Other Information**

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END OF MSDS

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.


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# APPENDIX B

# APPENDIX 10.6

## 10.6 Thermal Discharge modeling

This appendix includes a set of calculations which were done to document the thermal discharge modeling and associated results that were performed to analyze both the existing thermal discharge plumes and the expected thermal discharge plumes that will result from the Project. The model used is called MULDIF, which is the Envirosphere version of the near-field Koh and Fan model. A listing of the program is included as Attachment 1. The calculations are as follows:

Calculation 12 - Revised Y-Port Diffuser MULDIF Runs

Calculation 13 - Revised Multiport Diffuser MULDIF Runs

Calcualtion 14 - Predicted vs. Allowed Mixing Zones

Detailed studies were performed following commercial operation of St. Lucie Unit 1 in June, 1976 to verify the accuracy of the thermal discharge model which had been used during the plant licensing (Envirosphere, 1977). That modeling consisted of a near-field model, based on the work of Koh and Fan (Koh and Fan, 1970), and a far-field model based on the work of Pritchard (Pritchard, 1970). Now that the extent of the mixing zone is defined as the 17°F isotherm above ambient, only the near-field model is necessary to show mixing zone compliance.

The Koh and Fan near-field model is a submerged jet model consisting of a set of seven simultaneous differential equations. They include equations of conservation of mass, horizontal momentum flux, vertical momentum flux, density deficiency flux, and thermal energy flux, and two equations of horizontal and and vertical distance. The solution of these equations provides jet width, dilution, temperature, density, jet trajectory, and temperature rise as a function of position.

The field monitoring program that was performed consisted of thermal mapping of the St. Lucie Unit No. 1 discharge plume and ambient conditions using a mobile mapping system, supplemented by vertical, temperature profiles and airborne infrared photography. In addition, fixed *in situ* temperature and current instruments were moored at a depth of about ten feet below the surface at

four pre-selected points, two on each side of the diffuser, to obtain continuous records of water temperature and current. Thermal mapping was performed by boat-mounted fast scanning thermal sensors, designed and provided by Environmental Devices Corporation (ENDECO). This system employed three thermistors at three depths with a towed V-fin depressor, a digital data display printer, and a magnetic cassette recorder. Continental Shelf Associates, Inc. of Tequesta, FL, provided field support and a 24-foot V-hull boat in which the mapping system was mounted. Boat position was established using a Motorola Mini-Ranger III and two shore-based transponders The thermistor probes measured temperatures between 32 and 122 ° F with an accuracy of + or - 0.1°F and a resolution of 0.1° F.

For the near field, boat speed was set to about four knots and the interval of data logging was set to two seconds. At this combination of boat speed and rate of data collection, temperatures were measured at about 15-foot intervals. Track spacing was 30 to 45 feet apart and track lengths were usually 1200 feet. Ten to fifteen tracks were run for each near-field map. To supplement temperature measurements taken at three depths by the mobile mapping system, vertical temperature measurements were conducted at selected points in the plume area. Temperatures were measured at 1, 3, 5, 10, 15, and 25-foot depths with a Hydrolab Thermistor probe and deck read-out unit. Four to seven temperature profiles were obtained during each survey.

The field survey was conducted between March 25 and April 4, 1977. With respect to the near-field model, Envirosphere reached the following conclusions:

1. "Based on the near-field results, it is concluded that the diffuser performs close to its expected performance."

2. "The near-field (Koh-Fan) model gives satisfactory comparisons (*i.e.*,0.2 to 1°F) between the predicted and measured results."

References:

Koh, R.C.Y. and Fan, L.N., "Mathematical Models for the Prediction of Temperature Distributions Resulting from the Discharge of Heated Water". Report for the U.S. Environmental Protection Agency, Water Quality Office, Program #16310, DWO, Contract #14-12-570. October, 1970.

Pritchard, D.W., "Design and Siting Criteria for Once-Through Cooling Systems." Chesapeake Bay Institute, The John Hopkins University. AIChE 68th National Meeting. March 2, 1970.

**Calculations**

| Golder Associates | SUBJECT Revised Y-Nozzle Diffuser MULDIF Runs | | |
|---|---|---|---|
| | Job No. 07387685<br>Ref. St Lucie Uprate Calc 12 | Made By H. Frediani<br>Checked S.Asamenaw<br>Reviewed | Date 11/20/2007<br>Sheet 1 of 2 |

Based on the SCA Review Meeting on Nov. 13 and 14, it was decided to model the Y-Port Diffuser for an existing plant case using the highest recorded plant discharge temperature from calc 11. It was also decided to model two uprate cases as follows:

- Adding 2.9 ° F to the existing case discharge temperature will result in a post-uprate discharge temperature which exceeds the existing NPDES permit limit of 113 ° F. FPL has committed to shed load in such a case, assuming the discharge temperature exceeding 113 ° F is not caused by " ...condenser and/or circulating water pump maintenance, throttling circulating water pumps to minimize use of chlorine, and/or fouling of circulating water system." as allowed by the NPDES Permit Effluent Limitation I.A.3. Therefore, the maximum discharge temperature under normal C.W. flow conditions will be 113 ° F. Assuming worst case is with maximum DT, ambient temperature in this case will be 113 - 28.6 (see calc 6) = 84.4 ° F

- When flow is reduced due to " ...condenser and/or circulating water pump maintenance, throttling circulating water pumps to minimize use of chlorine, and or fouling of circulating water system.", the maximum discharge temperature will be 117 ° F. For this case, it is assumed the flow has been reduced by the temporary condition. Assuming the DT is 32 ° F (from the NPDES Permit Effluent Limitation I.A.3), the corresponding ambient temperature is 117 - 32 = 85 ° F.

The following cases will be modeled:

Case 1 Existing plant. (Pre-Uprate)

Case 2 Post-Uprate with Discharge at 113 ° F

Case 3 Post-Uprate with Discharge at 117 ° F

The input parameters for each case are delineated in attached worksheets called "Input-x", where "x: is the case number.

Case 1

From Calc. 10, the peak discharge temperature over the period of record was 111.1 ° F, we will use that for discharge temp:
Since existing peak DT is 25.7 ° F, ambient is 84.4 ° F.
For associated densities, use Book1.xls which was developed in Calc 7.

| Golder Associates | SUBJECT Revised Y-Nozzle Diffuser MULDIF Runs | | |
|---|---|---|---|
| | Job No. 07387675<br>Ref. PSL Uprate<br>Calc 12 | Made By H. Frediani<br>Checked S.Asamenaw<br>Reviewed | Date 11/20/2007<br>Sheet 2 of 2 |

From Calc 6, CW flow is (2,301 cfs) /2 = 1151 cfs for both ports. Therefore, each port has a flow of 2301/4 = 575.25 cfs
Calculate jet velocity = 575.3/(7.5*7.5*3.14159/4) = 13.02 feet per second
Rest of parameters remain the same as in calc 7. See worksheet "Input-1" for results.

Case 2

Parameters are the same, except for temperatures and densities, see book1.xls for values derived.

Case 3

Parameters are the same except for temperatures and densities, see book1.xls for values derived, and the velocity is reduced. From page 1, flow is reduced by the inverse ratio of the DTs which are 32 and 28.6. Therefore the flow is 575.3 * (28.6/32) = 514.1 cfs

Velocity = 514.1/(7.5*7.5*3.14159/4) = 11.64 feet per second

---

Set up files as follows:

| | Input file | Output File |
|---|---|---|
| Case 1 | PSL-1.dat | PSL-1.out |
| Case 2 | PSL-2.dat | PSL-2.out |
| Case 3 | PSL-3.dat | PSL-3.out |

Create the files and run the programs. Open the output files as Word files and save as .doc files, which are attached.

Note that the DT drops below 17 ° F in the second step for all three runs. Plot Center line temperature against center line horizontal distance for all three runs and compare to the runs in Calc 7. Do this by importing them all into Excel, file called PSL-Y-OUT.xls

**MULDIF- Y-Port Diffuser Case 1**
**Input Parameters**

| Parameter | Existing Y-Port | Units | Definition | Note |
|---|---|---|---|---|
| NC | 2 | none | Number of layers | Assume 2 layers at same temp and density |
| DO | 7.5 | Ft | Jet diameter | Discharge is through |
| UO | 13.02 | Ft/Sec | Discharge velocity per jet | From Calc 6 |
| TO | 111.1 | Deg F | Discharge Temperature | From Conference call on 10/19 with Ron Hix |
| DEN1 | 1.017838 | $g/cm^3$ | Discharge density | Calculated |
| THETAO | 0 | none | Angle of discharge with respect to horizontal | Two scenarios |
| DJ | 34 | Ft | Depth of discharge | Depth of discharge |
| SPACJ | 115 | Ft | Spacing between jet centers | Only 1 jet |
| | | | | |
| D | 34 | Ft | Depth of discharge | Depth of discharge |
| TA | 85.4 | Deg F | Ambient River temperature | |
| Dena | 1.023365 | $g/cm^3$ | Ambient River density | |
| | | | | |
| GRAVAC | 32.2 | $Ft/Sec^2$ | Gravitational constant | Gravitational constant |
| BLDR | 575.3 | cfs | Discharge flow | Calculated |
| RIVR | 0 | | River flow ( 0 for slack tide) | Assume slack tide |

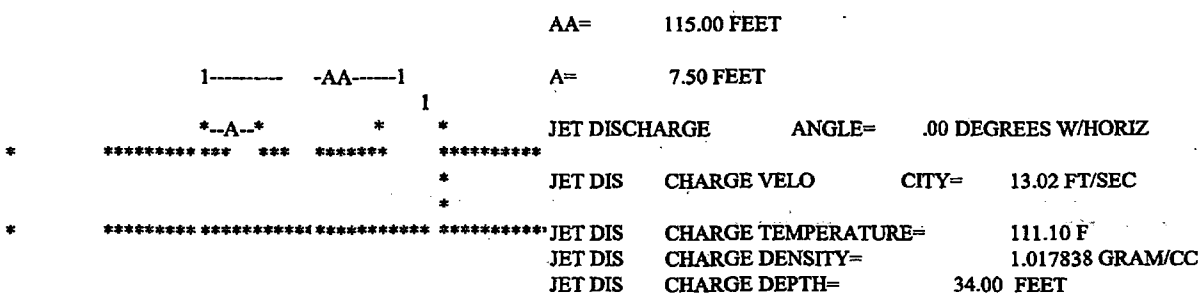
**MULDIF- Y-Port Diffuser - Case 2**
**Input Parameters**

| Parameter | Proposed Y-Port | Units | Definition | Note |
|---|---|---|---|---|
| NC | 2 | none | Number of layers | Assume 2 layers at same temp and density |
| DO | 7.5 | Ft | Jet diameter | Discharge is through |
| UO | **13.02** | Ft/Sec | Discharge velocity per jet | From Calc 6 |
| TO | **113** | Deg F | Discharge Temperature | From Conference call on 10/19 with Ron Hix |
| DEN1 | **1.017362** | $g/cm^3$ | Discharge density | Calculated |
| THETAO | 0 | none | Angle of discharge with respect to horizontal | Two scenarios |
| DJ | 34 | Ft | Depth of discharge | Depth of discharge |
| SPACJ | 115 | Ft | Spacing between jet centers | Only 1 jet |
| | | | | |
| D | 34 | Ft | Depth of discharge | Depth of discharge |
| TA | **85** | Deg F | Ambient River temperature | |
| Dena | **1.023438** | $g/cm^3$ | Ambient River density | |
| | | | | |
| GRAVAC | 32.2 | $Ft/Sec^2$ | Gravitational constant | Gravitational constant |
| BLDR | **575.3** | cfs | Discharge flow | Calculated |
| RIVR | 0 | | River flow ( 0 for slack tide) | Assume slack tide |

**MULDIF- Y-Port Diffuser - Case 3**
**Input Parameters**

| Parameter | Proposed Y-Port | Units | Definition | Note |
|---|---|---|---|---|
| NC | 2 | none | Number of layers | Assume 2 layers at same temp and density |
| DO | 7.5 | Ft | Jet diameter | Discharge is through |
| UO | 11.64 | Ft/Sec | Discharge velocity per jet | From Calc 6 |
| TO | 117 | Deg F | Discharge Temperature | From Conference call on 10/19 with Ron Hix |
| DEN1 | 1.01633 | $g/cm^3$ | Discharge density | Calculated |
| THETAO | 0 | none | Angle of discharge with respect to horizontal | Two scenarios |
| DJ | 34 | Ft | Depth of discharge | Depth of discharge |
| SPACJ | 115 | Ft | Spacing between jet centers | Only 1 jet |
| | | | | |
| D | 34 | Ft | Depth of discharge | Depth of discharge |
| TA | 85 | Deg F | Ambient River temperature | |
| Dena | 1.023438 | $g/cm^3$ | Ambient River density | |
| | | | | |
| GRAVAC | 32.2 | $Ft/Sec^2$ | Gravitational constant | Gravitational constant |
| BLDR | 514.1 | cfs | Discharge flow | Calculated |
| RIVR | 0 | | River flow ( 0 for slack tide) | Assume slack tide |

MULTIPORT SUBAQUEOUS DIFFUSER IN AN ARBITRARILY DENSITY STRATIFIED ENVIRONMENT




| X | Y | JET WIDTH | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 46.84 | 0.00014 | 15.15771 | 1.01051 | 107.4291 | 1.01862 | 1.02355 | 84.4 | 23.02909 | 17 |
| **63.1925** | **0.814116** | **22.714747** | | **101.4** | | | | **17** | |
| 76.70811 | 1.48688 | 28.96076 | 1.93655 | 96.41686 | 1.02098 | 1.02355 | 84.4 | 12.01686 | 17 |
| 91.50193 | 3.68498 | 35.70835 | 2.40173 | 94.08938 | 1.02147 | 1.02355 | 84.4 | 9.68938 | 17 |
| 106.0567 | 7.12125 | 42.22679 | 2.87068 | 92.50653 | 1.02181 | 1.02355 | 84.4 | 8.10653 | 17 |
| 120.2216 | 11.91491 | 48.40776 | 3.34601 | 91.35493 | 1.02206 | 1.02355 | 84.4 | 6.95493 | 17 |
| 133.8389 | 18.09402 | 54.17075 | 3.83077 | 90.47482 | 1.02225 | 1.02355 | 84.4 | 6.07482 | 17 |
| 146.7748 | 25.59637 | 59.48996 | 4.32811 | 89.77677 | 1.0224 | 1.02355 | 84.4 | 5.37677 | 17 |

T HIS IS FRI SURFACE

**Interpolated Point**

M ULTIPOR BAQUEOUS FUSER IN A ARBITRARII DENSITY S TRATIFIED E VIRONMENT

AA= 115. 00 FEET

1------ AA------1 A= 7. 50 FEET

1

*--A--* * * JET DISC HARGE ANG .00 DEG REES W/HO IZ

* ********* *** **** ****** **********

* JET DISC HARGE VEL( TY= 13.02 FT/SEC

*

* ********* ********** ********** ********** JET DISC HARGE TEM ATURE= 112 00 F

JET DISC HARGE DEN Y= 1.017362 GRAM/CC

JET DISC HARGE DEP 134.00 FEE T

| X | Y | JET WIDTH | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 46.84 | 0.00015 | 15.15771 | 1.01051 | 109.1504 | 1.0182 | 1.02344 | 85 | 24.15036 | 17 |
| **65.32795** | **0.979604** | **23.69739966** | | | | | | 17 | |
| 76.70126 | 1.58214 | 28.9508 | 1.93665 | 97.60127 | 1.0207 | 1.02344 | 85 | 12.60128 | 17 |
| 91.47353 | 3.91752 | 35.67405 | 2.40216 | 95.15929 | 1.02123 | 1.02344 | 85 | 10.1593 | 17 |
| 105.9779 | 7.55859 | 42.14262 | 2.87192 | 93.49754 | 1.02159 | 1.02344 | 85 | 8.49754 | 17 |
| 120.0498 | 12.61691 | 48.2433 | 3.34881 | 92.28745 | 1.02186 | 1.02344 | 85 | 7.28745 | 17 |
| 133.5237 | 19.10192 | 53.90034 | 3.83613 | 91.36169 | 1.02206 | 1.02344 | 85 | 6.36169 | 17 |
| 146.2664 | 26.92742 | 59.10154 | 4.33722 | 90.62671 | 1.02222 | 1.02344 | 85 | 5.62671 | 17 |

THIS IS FREE SURFACE

MUL TIPORT S BAQUEO USER IN . ARBITRA DENSITY RATIFIED VIRONMENT

AA= 115.0 0 FEET

1------A A------1 A= 7.5 0 FEET

1

*--A--* * * JET DISC ARGE AN .00 DEG REES W/I Z

*** ********** *** *** ***** ********** JET DISC ARGE VE TY= 11.6 FT/SEC

*

*** ********** ********** ********** ********** JET DISC ARGE TE ATURE= 00 F

JET DISC ARGE DE Y= 1.0163 GRAM/CC

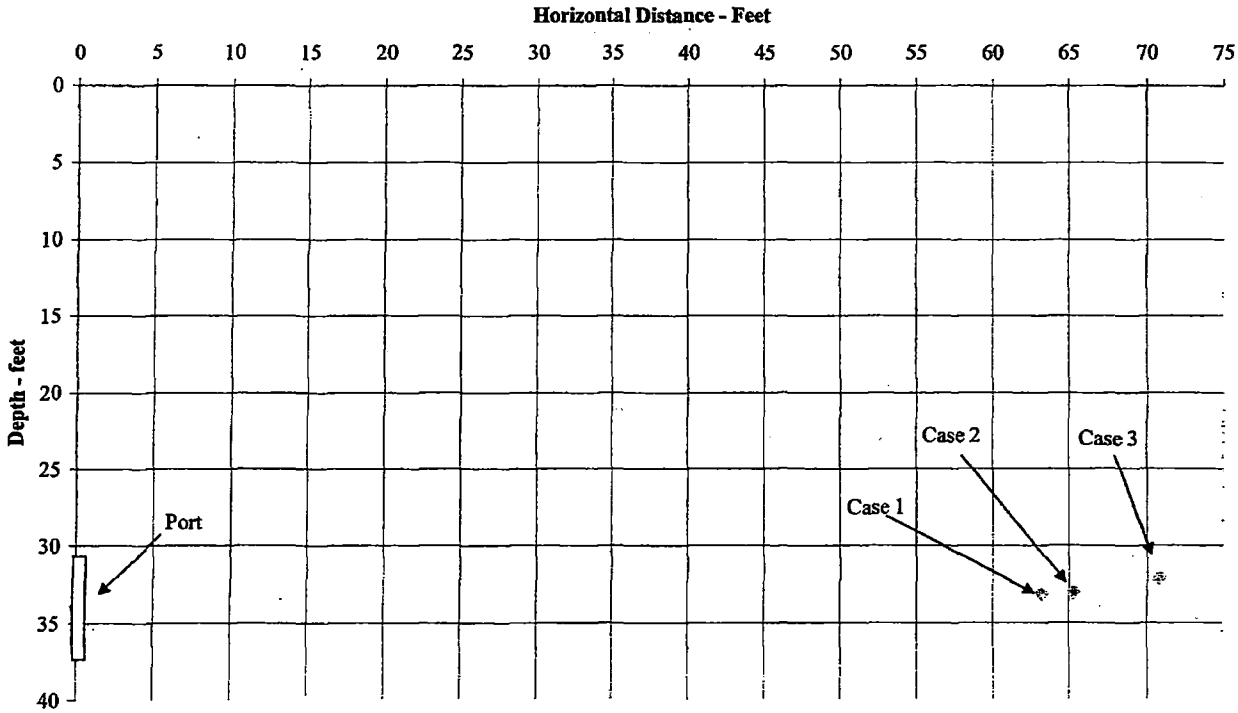
JET DISC ARGE DE 34.00 FEE T

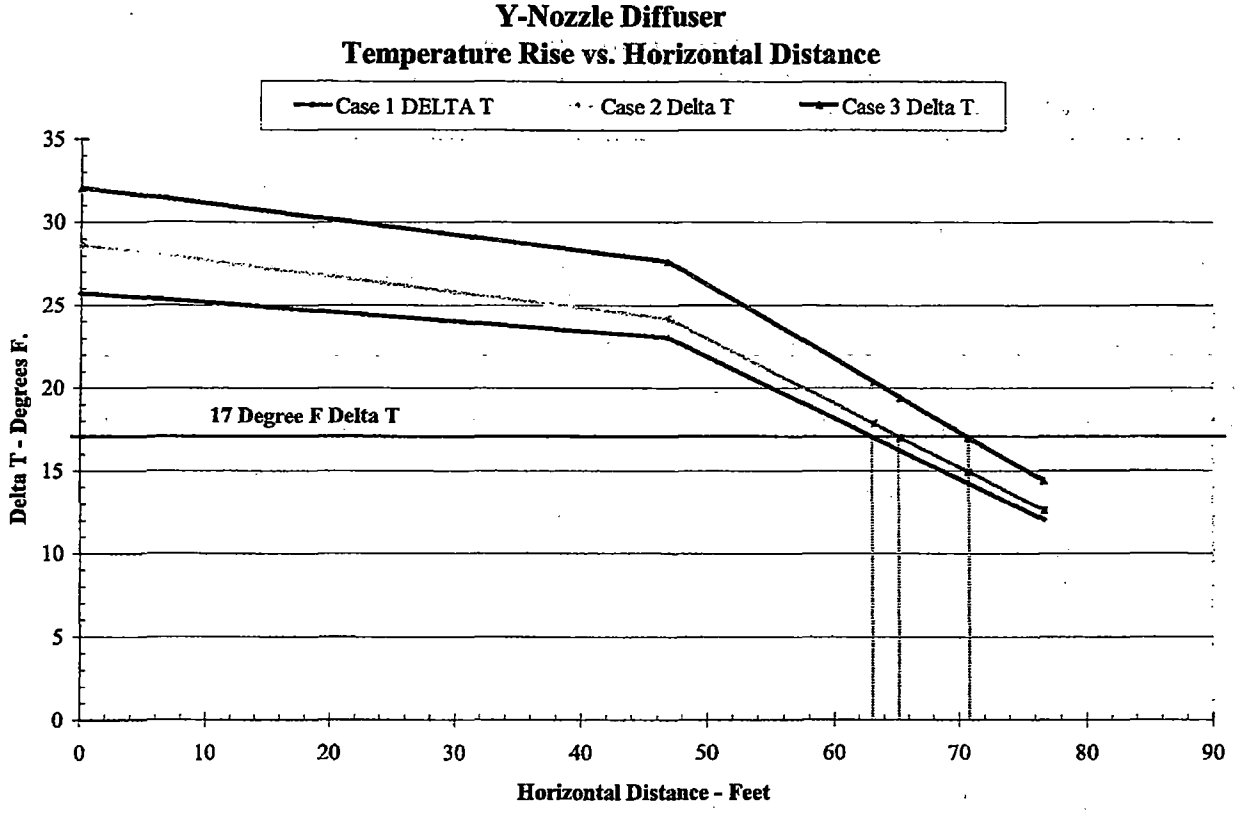
| X | Y | JET WIDT | DILUTIO | JET TEM | JET DENS | AMB DEN | AMB TEN | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 46.84 | 0.00022 | 15.15771 | 1.01051 | 112.6004 | 1.01731 | 1.02344 | 85 | 27.60041 | 17 |
| **70.75587** | **1.850115** | | | | | | | **17** | |
| 76.63532 | 2.30489 | 28.85568 | 1.93765 | 99.39401 | 1.02024 | 1.02344 | 85 | 14.39401 | 17 |
| 91.2058 | 5.65904 | 35.35647 | 2.40634 | 96.59048 | 1.02086 | 1.02344 | 85 | 11.59048 | 17 |
| 105.2571 | 10.76426 | 41.40145 | 2.88355 | 94.67231 | 1.02129 | 1.02344 | 85 | 9.67231 | 17 |
| 118.5446 | 17.61576 | 46.88834 | 3.37425 | 93.26571 | 1.0216 | 1.02344 | 85 | 8.26571 | 17 |
| 130.8926 | 26.04585 | 51.83208 | 3.88326 | 92.18227 | 1.02184 | 1.02344 | 85 | 7.18228 | 17 |

THI S IS FREE SURFACE

| X | Y | Case 1 DELTA T | Case 2 Delta T | Case 3 Delta T |
|---|---|---|---|---|
| 0 | 0 | 25.7 | 28.6 | 32 |
| 46.84 | 0.00014 | 23.02909 | 24.15036 | 27.60041 |
| **63.1925** | **0.814116** | **17** | **17.82589933** | 20.35236921 |
| **65.32795** | **0.941532** | **16.21267257** | **17** | 19.40586131 |
| **70.75587** | **1.850115** | **14.21142081** | **14.90196869** | **17** |
| 76.70811 | 1.48688 | 12.01686 | 12.60128 | 14.39401 |
| 91.50193 | 3.68498 | 9.68938 | | |
| 106.0567 | 7.12125 | 8.10653 | | |
| 120.2216 | 11.91491 | 6.95493 | | |
| 133.8389 | 18.09402 | 6.07482 | | |
| 146.7748 | 25.59637 | 5.37677 | | |
| T | HIS IS FR | SURFACE | | |
| | | | | |
| | | | | |
| | **Interpolated Point** | | | |
| | | | | |
| | | | | |
| X | Depth | Y | | |
| 0 | 34 | 0 | | |
| 63.1925 | 33.18588 | 0.814115849 | | |
| 65.32795 | 33.05847 | 0.941532237 | | |
| 70.75587 | 32.14989 | 1.850114514 | | |

**Centerline Location of 17Degree F isotherm**

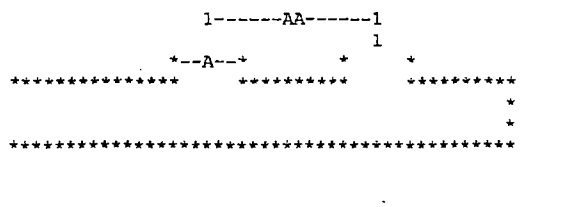



Y-Nozzle Diffuser
Temperature Rise vs. Horizontal Distance
Case 1 DELTA T
Case 2 Delta T
Case 3 Delta T
Delta T - Degrees F.
17 Degree F Delta T
Horizontal Distance - Feet
0
5
10
15
20
25
30
35
0
10
20
30
40
50
60
70
80
90

| T | Rho(actual) | Rho(est) | |
|---|---|---|---|
| 30 | 64.25 | 64.2420 | |
| 40 | 64.20 | 64.2090 | |
| 50 | 64.17 | 64.1600 | |
| 60 | 64.10 | 64.0950 | |
| 70 | 64.02 | 64.0140 | |
| 80 | 63.95 | 63.9170 | |
| **84.4** | | **63.8693** | **1.023546** |
| **85** | | **63.8625** | **1.023438** |
| **85.4** | | **63.8580** | **1.023365** |
| 90 | 63.80 | 63.8040 | |
| 91 | | 63.7918 | |
| 92 | | 63.7795 | |
| 93 | | 63.7670 | |
| 94 | | 63.7543 | |
| 95 | | 63.7415 | |
| 96 | | 63.7285 | |
| 97 | | 63.7154 | |
| 98 | | 63.7021 | |
| 99 | | 63.6886 | |
| 100 | 63.70 | 63.6750 | |
| 101 | | 63.6612 | |
| 102 | | 63.6473 | |
| 103 | | 63.6332 | |
| 104 | | 63.6189 | |
| 105 | | 63.6045 | |
| 106 | | 63.5899 | |
| 107 | | 63.5752 | |
| 108 | | 63.5603 | |
| 109 | | 63.5452 | |
| 110 | | 63.5300 | |
| 111 | | 63.5146 | |
| **111.1** | | **63.5131** | **1.017838** |
| 112 | | 63.4991 | |
| 113 | | 63.4834 | **1.017362** |
| 114 | | 63.4675 | |
| 115 | | 63.4515 | |
| 116 | | 63.4353 | |
| 117 | | 63.4190 | **1.01633** |
| 118 | | 63.4025 | |
| 119 | | 63.3858 | |
| 120 | | 63.3690 | |

| | | | | |
|---|---|---|---|---|
| Unit 1 | 4 CW pumps @ 121,000 gpm each = | 484,000 | gpm (from Circ Water pump Curves) | |
| Unit 1 | 2 AECW pumps @ 14,500 gpm each= | 29,000 | gpm (assumed same as Unit 2 ) | |
| Unit 2 | 4 CW pumps @ 122,650 gpm each = | 490,600 | gpm (from Circ Water pump Curves) | |
| Unit 2 | 2 AECW pumps @ 14,500 gpm each= | 29,000 | gpm (from Unit 2 FES p 4-12) | |
| | | | | |
| | Total = | 1,032,600 | gpm | |
| | Total = | 1,487 | MGD | |
| | Total = | 2,301 | CFS | |

MULTIPORT SUBAQUEOUS DIFFUSER IN AN ARBITRARILY DENSITY STRATIFIED ENVIRONMENT




AA= 115.00 FEET

A= 7.50 FEET

JET DISCHARGE ANGLE= .00 DEGREES W/HORIZ

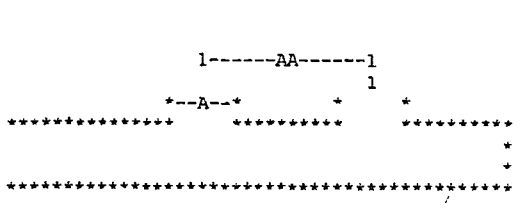
JET DISCHARGE VELOCITY= 13.02 FT/SEC

JET DISCHARGE TEMPERATURE= 111.10 F
JET DISCHARGE DENSITY= 1.017838 GRAM/CC
JET DISCHARGE DEPTH= 34.00 FEET

| X | Y | JET WIDTH | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 46.84000 | .00014 | 15.15771 | 1.01051 | 107.42910 | 1.01862 | 1.02355 | 84.40000 | 23.02909 | 17.00000 |
| 76.70811 | 1.48688 | 28.96076 | 1.93655 | 96.41686 | 1.02098 | 1.02355 | 84.40000 | 12.01686 | 17.00000 |
| 91.50193 | 3.68498 | 35.70835 | 2.40173 | 94.08938 | 1.02147 | 1.02355 | 84.40000 | 9.68938 | 17.00000 |
| 106.05670 | 7.12125 | 42.22679 | 2.87068 | 92.50653 | 1.02181 | 1.02355 | 84.40000 | 8.10653 | 17.00000 |
| 120.22160 | 11.91491 | 48.40776 | 3.34601 | 91.35493 | 1.02206 | 1.02355 | 84.40000 | 6.95493 | 17.00000 |
| 133.83890 | 18.09402 | 54.17075 | 3.83077 | 90.47482 | 1.02225 | 1.02355 | 84.40000 | 6.07482 | 17.00000 |
| 146.77480 | 25.59637 | 59.48996 | 4.32811 | 89.77677 | 1.02240 | 1.02355 | 84.40000 | 5.37677 | 17.00000 |

THIS IS FREE SURFACE

MULTIPORT SUBAQUEOUS DIFFUSER IN AN ARBITRARILY DENSITY STRATIFIED ENVIRONMENT




AA= 115.00 FEET

A= 7.50 FEET

JET DISCHARGE ANGLE= .00 DEGREES W/HORIZ

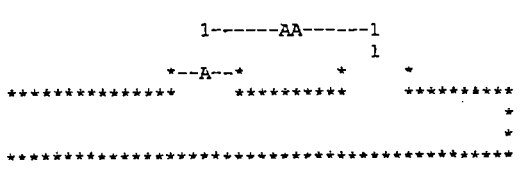
JET DISCHARGE VELOCITY= 13.02 FT/SEC

JET DISCHARGE TEMPERATURE= 113.00 F
JET DISCHARGE DENSITY= 1.017362 GRAM/CC
JET DISCHARGE DEPTH= 34.00 FEET

| X | Y | JET WIDTH | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 46.84000 | .00015 | 15.15771 | 1.01051 | 109.15040 | 1.01820 | 1.02344 | 85.00000 | 24.15036 | 17.00000 |
| 76.70126 | 1.58214 | 28.95080 | 1.93665 | 97.60127 | 1.02070 | 1.02344 | 85.00000 | 12.60128 | 17.00000 |
| 91.47353 | 3.91752 | 35.67405 | 2.40216 | 95.15929 | 1.02123 | 1.02344 | 85.00000 | 10.15930 | 17.00000 |
| 105.97790 | 7.55859 | 42.14262 | 2.87192 | 93.49754 | 1.02159 | 1.02344 | 85.00000 | 8.49754 | 17.00000 |
| 120.04980 | 12.61691 | 48.24330 | 3.34881 | 92.28745 | 1.02186 | 1.02344 | 85.00000 | 7.28745 | 17.00000 |
| 133.52370 | 19.10192 | 53.90034 | 3.83613 | 91.36169 | 1.02206 | 1.02344 | 85.00000 | 6.36169 | 17.00000 |
| 146.26640 | 26.92742 | 59.10154 | 4.33722 | 90.62671 | 1.02222 | 1.02344 | 85.00000 | 5.62671 | 17.00000 |

THIS IS FREE SURFACE

MULTIPORT SUBAQUEOUS DIFFUSER IN AN ARBITRARILY DENSITY STRATIFIED ENVIRONMENT




AA= 115.00 FEET

A= 7.50 FEET

JET DISCHARGE ANGLE= .00 DEGREES W/HORIZ

JET DISCHARGE VELOCITY= 11.64 FT/SEC

JET DISCHARGE TEMPERATURE= 117.00 F
JET DISCHARGE DENSITY= 1.016330 GRAM/CC
JET DISCHARGE DEPTH= 34.00 FEET

| X | Y | JET WIDTH | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 46.84000 | .00022 | 15.15771 | 1.01051 | 112.60040 | 1.01731 | 1.02344 | 85.00000 | 27.60041 | 17.00000 |
| 76.63532 | 2.30489 | 28.85568 | 1.93765 | 99.39401 | 1.02024 | 1.02344 | 85.00000 | 14.39401 | 17.00000 |
| 91.20580 | 5.65904 | 35.35647 | 2.40634 | 96.59048 | 1.02086 | 1.02344 | 85.00000 | 11.59048 | 17.00000 |
| 105.25710 | 10.76426 | 41.40145 | 2.88355 | 94.67231 | 1.02129 | 1.02344 | 85.00000 | 9.67231 | 17.00000 |
| 118.54460 | 17.61576 | 46.88834 | 3.37425 | 93.26571 | 1.02160 | 1.02344 | 85.00000 | 8.26571 | 17.00000 |
| 130.89260 | 26.04585 | 51.83208 | 3.88326 | 92.18227 | 1.02184 | 1.02344 | 85.00000 | 7.18228 | 17.00000 |

THIS IS FREE SURFACE

| Golder Associates | SUBJECT Revised Multiport Diffuser MULDIF Runs | | |
|---|---|---|---|
| | Job No. 07387685<br>Ref. St Lucie Uprate Calc 13 | Made By H. Frediani<br>Checked S. Asamenaw<br>Reviewed | Date 11/20/2007<br>Sheet 1 of 2 |

Based on the SCA Review Meeting on Nov. 13 and 14, it was decided to model the Multiport Diffuser for an existing plant case using the highest recorded plant discharge temperature from calc 11. It was also decided to model two uprate cases as follows:

- Adding 2.9 ° F to the existing case discharge temperature will result in a post-uprate discharge temperature which exceeds the existing NPDES permit limit of 113 ° F. FPL has committed to shed load in such a case, assuming the discharge temperature exceeding 113 ° F is not caused by " ...condenser and/or circulating water pump maintenance, throttling circulating water pumps to minimize use of chlorine, and or fouling of circulating water system." as allowed by the NPDES Permit Effluent Limitation I.A.3. Therefore, the maximum discharge temperature under normal C.W. flow conditions will be 113 ° F. Assuming worst case is with maximum DT, ambient temperature in this case will be 113 - 28.6 (see calc 6) = 84.4 ° F

- When flow is reduced due to " ...condenser and/or circulating water pump maintenance, throttling circulating water pumps to minimize use of chlorine, and or fouling of circulating water system.", the maximum discharge temperature will be 117 ° F. For this case, it is assumed the flow has been reduced by the temporary condition. Assuming the DT is 32 ° F (from the NPDES Permit Effluent Limitation I.A.3), the corresponding ambient temperature is 117 - 32 = 85 ° F.

The following cases will be modeled:

Case 4 Existing plant. (Pre-Uprate)

Case 5 Post-Uprate with Discharge at 113 ° F

Case 6 Post-Uprate with Discharge at 117 ° F

The input parameters for each case are delineated in attached worksheets called "Input-x", where "x: is the case number.

Case 4

From Calc. 10, the peak discharge temperature over the period of record was 111.1 ° F, we will use that for discharge temp..
Since existing peak DT is 25.7 ° F, ambient is 85.4 ° F.
For associated densities, use Book1.xls which was developed in Calc 7.

| Golder Associates | SUBJECT Revised Multiport Diffuser MULDIF Runs | | |
|---|---|---|---|
| | Job No. 07387675<br>Ref. PSL Uprate Calc 13 | Made By H. Frediani<br>Checked S. Asamenaw<br>Reviewed | Date 11/20/2007<br>Sheet 2 of 2 |

From Calc 6, CW flow is (2,301 cfs) /2 = 1151 cfs for all ports. Therefore, each port has a flow of 2301/(2*58) = 19.836 cfs
Calculate jet velocity = 19.84/(((17.75/12)*(17.75/12))*3.14159/4) = 11.54 feet per second
Rest of parameters remain the same as in calc 7. See worksheet "Input-4" for results.

Case 5

Parameters are the same, except for temperatures and densities, see book1.xls for values derived.

Case 6

Parameters are the same except for temperatures and densities, see book1.xls for values derived, and the velocity is reduced.
From page 1, flow is reduced by the inverse ratio of the DTs which are 32 and 28.6. Therefore the flow is 19.84* (28.6/32) =
17.7 cfs

Velocity = 17.7/(((17.75/12)*(17.75/12)*3.14159/4) = 10.32 feet per second

---

Set up files as follows:

| | Input file | Output File |
|---|---|---|
| Case 4 | PSL-4.dat | PSL-4.out |
| Case 2 | PSL-5.dat | PSL-5.out |
| Case 3 | PSL-6.dat | PSL-6.out |

Create the files and run the programs. Open the output files as Word files and save as .doc files, which are attached.

Note that the DT drops below 17 ° F in the second step for all three runs. Plot Center line temperature against center line horizontal distance for all three runs and compare to the runs in Calc 7. Do this by importing them all into Excel, file called PSL-multiport-OUT.xls

**MULDIF- Multiport Diffuser Case 4**
**Input Parameters**

| Parameter | Existing Multiport | Units | Definition | Note |
|---|---|---|---|---|
| NC | 2 | none | Number of layers | Assume 2 layers at same temp and density |
| DO | 1.4792 | Ft | Jet diameter | Discharge is through |
| UO | 11.54 | Ft/Sec | Discharge velocity per jet | From Calc 6 |
| TO | 111.1 | Deg F | Discharge Temperature | From Conference call on 10/19 with Ron Hix |
| DEN1 | 1.017838 | $g/cm^3$ | Discharge density | Calculated |
| THETAO | 0 | none | Angle of discharge with respect to horizontal | Two scenarios |
| DJ | 26.5 | Ft | Depth of discharge | Depth of discharge |
| SPACJ | 42 | Ft | Spacing between jet centers | |
| | | | | |
| D | 34 | Ft | Depth of water body | Depth of water body |
| TA | 85.4 | Deg F | Ambient River temperature | |
| Dena | 1.023365 | $g/cm^3$ | Ambient River density | |
| | | | | |
| GRAVAC | 32.2 | $Ft/Sec^2$ | Gravitational constant | Gravitational constant |
| BLDR | 19.84 | cfs | Discharge flow | Calculated |
| RIVR | 0 | | River flow ( 0 for slack tide) | Assume slack tide |

**MULDIF- Multiportort Diffuser - Case 5**
**Input Parameters**

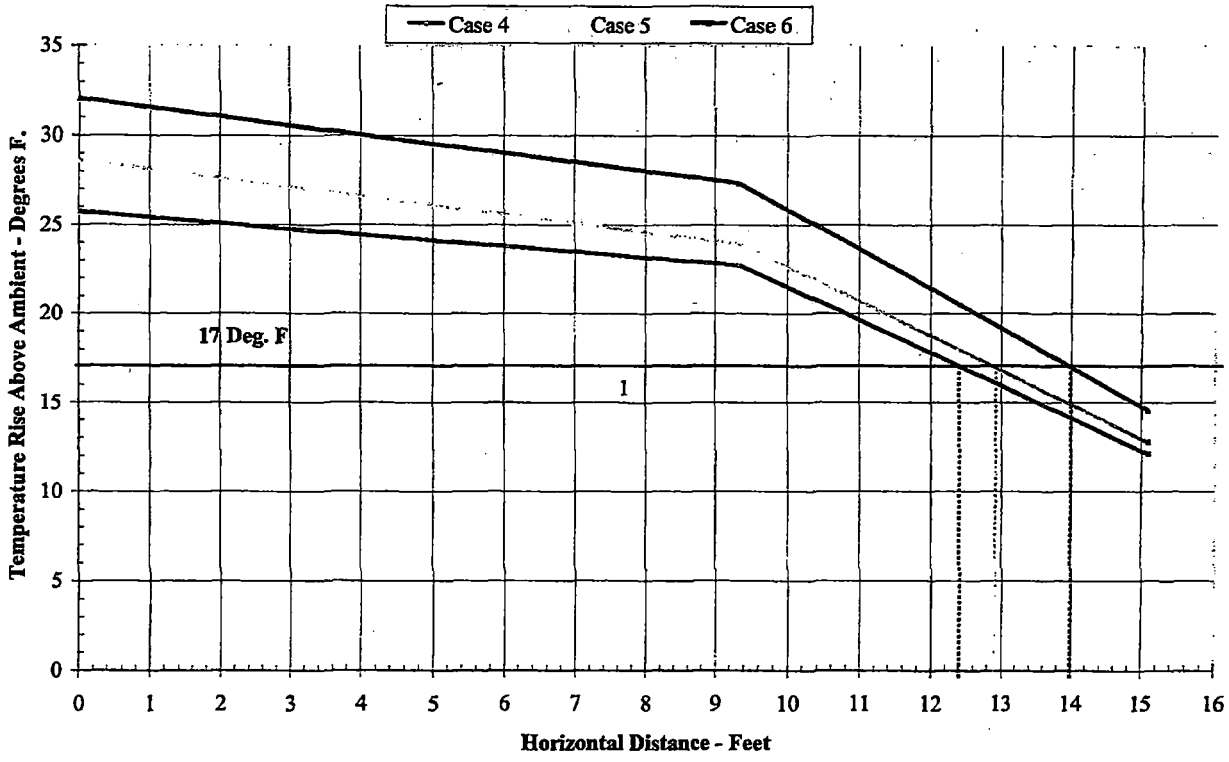
| Parameter | Proposed Multiport | Units | Definition | Note |
|---|---|---|---|---|
| NC | 2 | none | Number of layers | Assume 2 layers at same temp and density |
| DO | 1.4792 | Ft | Jet diameter | Discharge is through |
| UO | 11.54 | Ft/Sec | Discharge velocity per jet | From Calc 6 |
| TO | 113 | Deg F | Discharge Temperature | From Conference call on 10/19 with Ron Hix |
| DEN1 | 1.017362 | $g/cm^3$ | Discharge density | Calculated |
| THETAO | 0 | none | Angle of discharge with respect to horizontal | Two scenarios |
| DJ | 26.5 | Ft | Depth of discharge | Depth of discharge |
| SPACI | 42 | Ft | Spacing between jet centers | Only 1 jet |
| | | | | |
| D | 34 | Ft | Depth of water body | Depth of water body |
| TA | 85 | Deg F | Ambient River temperature | |
| Dena | 1.023438 | $g/cm^3$ | Ambient River density | |
| | | | | |
| GRAVAC | 32.2 | $Ft/Sec^2$ | Gravitational constant | Gravitational constant |
| BLDR | 19.84 | cfs | Discharge flow | Calculated |
| RIVR | 0 | | River flow ( 0 for slack tide) | Assume slack tide |

**MULDIF- Multiport Diffuser - Case 6**
**Input Parameters**

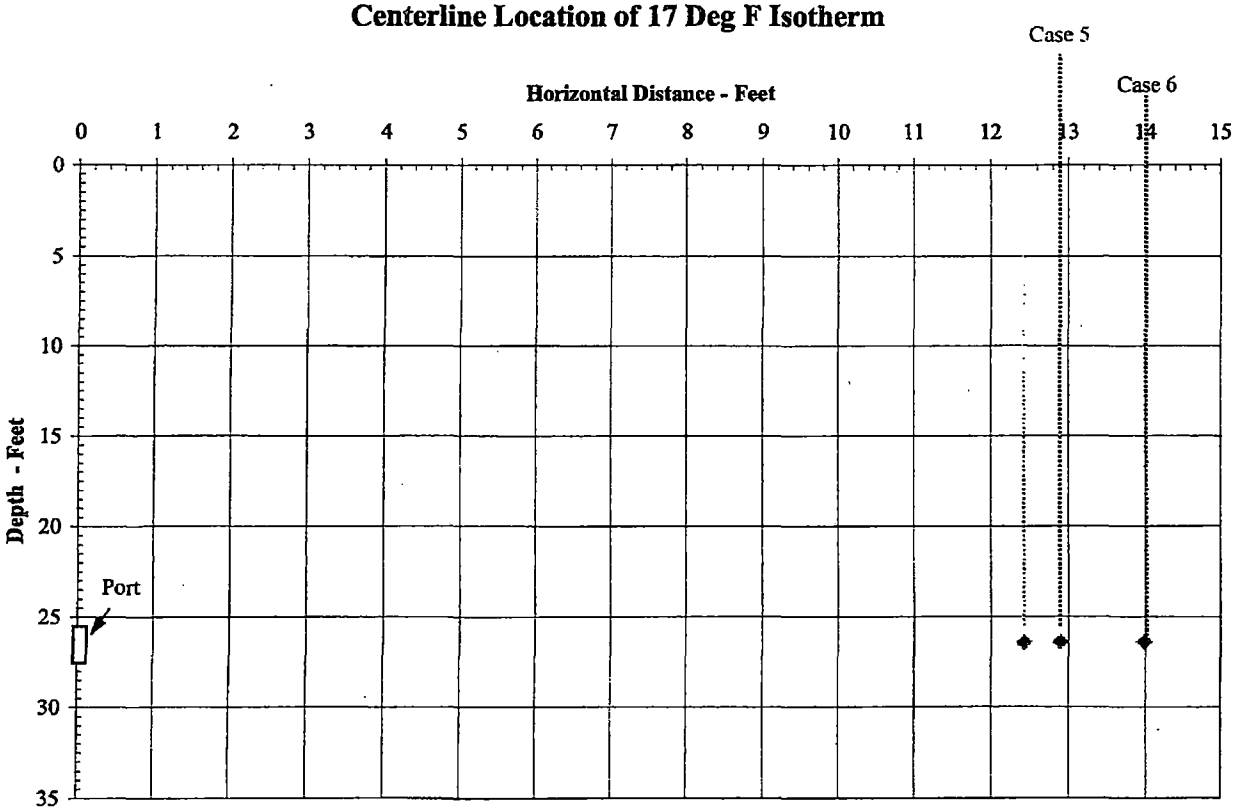
| Parameter | Proposed Multiport | Units | Definition | Note |
|---|---|---|---|---|
| NC | 2 | none | Number of layers | Assume 2 layers at same temp and density |
| DO | 1.4792 | Ft | Jet diameter | Discharge is through |
| UO | 10.32 | Ft/Sec | Discharge velocity per jet | From Calc 6 |
| TO | 117 | Deg F | Discharge Temperature | From Conference call on 10/19 with Ron Hix |
| DEN1 | 1.01633 | $g/cm^3$ | Discharge density | Calculated |
| THETAO | 0 | none | Angle of discharge with respect to horizontal | Two scenarios |
| DJ | 26.5 | Ft | Depth of discharge | Depth of discharge |
| SPACJ | 42 | Ft | Spacing between jet centers | Only 1 jet |
| | | | | |
| D | 34 | Ft | Depth of discharge | Depth of discharge |
| TA | 85 | Deg F | Ambient River temperature | |
| Dena | 1.023438 | $g/cm^3$ | Ambient River density | |
| | | | | |
| GRAVAC | 32.2 | $Ft/Sec^2$ | Gravitational constant | Gravitational constant |
| BLDR | 17.7 | cfs | Discharge flow | Calculated |
| RIVR | 0 | | River flow ( 0 for slack tide) | Assume slack tide |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| X | Y | JET WIDTH | Case 4 ΔT | Case 5 ΔT | Case 6 ΔT |
| 0 | 0 | 1.492 | 25.7 | 28.6 | 32 |
| 9.33539 | 0.00004 | 3.03464 | 22.68659 | 23.90364 | 27.30238 |
| 15.08721 | 0.07247 | 5.70205 | 12.07158 | 12.72115 | 14.53009 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | X | Depth | Y | JET WIDTH | |
| Case 4 | 12.41671 | 26.4611584 | 0.038842 | 4.463604 | |
| Case 5 | 12.88629 | 26.4523576 | 0.047642 | 4.681316 | |
| Case 6 | 13.9742 | 26.4089917 | 0.091008 | 5.185152 | |

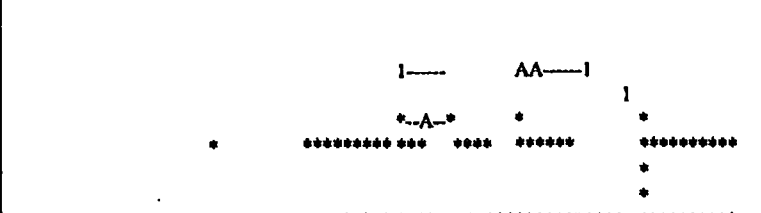
## Multiport Diffuser Temperature Rise vs. Horizontal Distance



## Centerline Location of 17 Deg F Isotherm



MULTIPORT SUBAQUEOUS DIFFUSER IN AN ARBITRARILY DENSITY STRATIFIED ENVIRONMENT



AA= 42. 00 FEET

A= 1. 48 FEET

JET DISCHARGE ANGLE = .00 DEGREES W/IZ

JET DISCHARGE VELOCITY= 11.54 FT/SEC

JET DISCHARGE TEMPERATURE= 111.10 F

JET DISCHARGE DENSITY= 1.01783 8 GRAM/CC

JET DISCHARGE DEPTH = 26.50 FEET

| X | Y | JET WIDTH | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 9.33539 | 0.00004 | 3.03464 | 1.02577 | 107.0866 | 1.0187 | 1.02355 | 84.4 | 22.68659 | 17 |
| **12.41671** | **0.038842** | **4.46360399** | | | | | | **17** | |
| 15.08721 | 0.07247 | 5.70205 | 1.92777 | 96.47157 | 1.02097 | 1.02355 | 84.4 | 12.07158 | 17 |
| 18.04352 | 0.18222 | 7.07187 | 2.39179 | 94.12963 | 1.02147 | 1.02355 | 84.4 | 9.72963 | 17 |
| 21.16055 | 0.36981 | 8.51419 | 2.88186 | 92.47507 | 1.02182 | 1.02355 | 84.4 | 8.07508 | 17 |
| 24.10752 | 0.62835 | 9.87468 | 3.3466 | 91.3537 | 1.02206 | 1.02355 | 84.4 | 6.9537 | 17 |
| 27.04511 | 0.97754 | 11.22617 | 3.81207 | 90.50462 | 1.02224 | 1.02355 | 84.4 | 6.10462 | 17 |
| 29.80682 | 1.40049 | 12.49069 | 4.25267 | 89.87215 | 1.02238 | 1.02355 | 84.4 | 5.47214 | 17 |
| 32.71232 | 1.95641 | 13.81255 | 4.72067 | 89.32964 | 1.02249 | 1.02355 | 84.4 | 4.92964 | 17 |
| 35.59235 | 2.63182 | 15.11182 | 5.19072 | 88.88324 | 1.02259 | 1.02355 | 84.4 | 4.48324 | 17 |
| 38.4398 | 3.43344 | 16.38319 | 5.66342 | 88.50904 | 1.02267 | 1.02355 | 84.4 | 4.10904 | 17 |
| 41.2471 | 4.3659 | 17.62163 | 6.13947 | 88.19043 | 1.02274 | 1.02355 | 84.4 | 3.79043 | 17 |
| 44.00659 | 5.43157 | 18.82279 | 6.6196 | 87.9155 | 1.02279 | 1.02355 | 84.4 | 3.51551 | 17 |
| 46.71082 | 6.63053 | 19.98342 | 7.10458 | 87.67553 | 1.02285 | 1.02355 | 84.4 | 3.27552 | 17 |
| 49.35301 | 7.96064 | 21.10163 | 7.5952 | 87.46394 | 1.02289 | 1.02355 | 84.4 | 3.06394 | 17 |
| 51.92731 | 9.41782 | 22.17697 | 8.09223 | 87.27575 | 1.02293 | 1.02355 | 84.4 | 2.87575 | 17 |
| 54.42904 | 10.99637 | 23.21041 | 8.59639 | 87.10709 | 1.02297 | 1.02355 | 84.4 | 2.70709 | 17 |
| 56.85479 | 12.6894 | 24.20412 | 9.10837 | 86.95493 | 1.023 | 1.02355 | 84.4 | 2.55493 | 17 |
| 59.20241 | 14.48924 | 25.16113 | 9.62878 | 86.81684 | 1.02303 | 1.02355 | 84.4 | 2.41684 | 17 |
| 61.47092 | 16.38785 | 26.08507 | 10.15818 | 86.69089 | 1.02306 | 1.02355 | 84.4 | 2.29089 | 17 |
| 63.66044 | 18.37707 | 26.97981 | 10.69703 | 86.57549 | 1.02308 | 1.02355 | 84.4 | 2.17548 | 17 |
| 65.77192 | 20.44896 | 27.84928 | 11.24575 | 86.46934 | 1.0231 | 1.02355 | 84.4 | 2.06934 | 17 |
| 67.80704 | 22.59595 | 28.6972 | 11.80466 | 86.37136 | 1.02312 | 1.02355 | 84.4 | 1.97136 | 17 |
| 69.76798 | 24.8109 | 29.52706 | 12.37404 | 86.28065 | 1.02314 | 1.02355 | 84.4 | 1.88065 | 17 |

THIS IS FREE SURFACE

interpolated value

MUL TIPORT S BAQUEOUS FFUSER IN N ARBITR DENSITY RATIFIED INVIRONMENT

AA= 42.0 0 FEET

1----- #NAME? A= 1.4 8 FEET

1

*--A--* * * JET DISCHARGE ANG= .00 DE GREES WZ

*** ********** *** *** ******* ********** *

* JET DISCHARGE VELOCITY= 11.54 FT/SEC

*

*** ********** ********** ********** ********** JET DISCHARGE TEMPERATURE= 1.00 F.

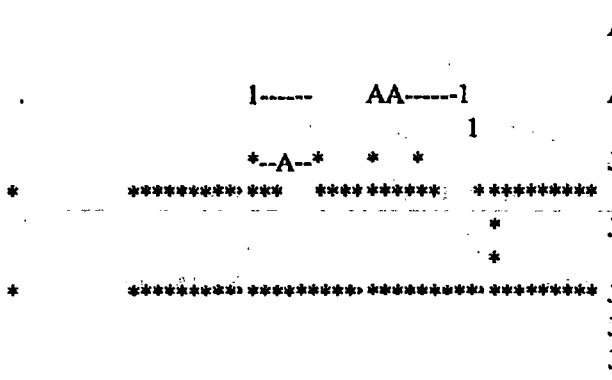
JET DISCHARGE DENSITY= 1.017312 GRAM/CC

JET DISCHARGE DEPTH= 26.50 FEET

| X | Y | JET WIDTH | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 9.33539 | 0.00005 | 3.03464 | 1.02577 | 108.7713 | 1.01828 | 1.02344 | 84.86765 | 23.90364 | 17 |
| **12.88629** | **0.047642** | **4.6813163** | | | | | | **17** | |
| 15.08713 | 0.07714 | 5.70192 | 1.92778 | 97.58743 | 1.02069 | 1.02344 | 84.86629 | 12.72115 | 17 |
| 18.04317 | 0.19398 | 7.07142 | 2.39182 | 95.1206 | 1.02122 | 1.02344 | 84.86423 | 10.25637 | 17 |
| 21.15943 | 0.39361 | 8.51292 | 2.88194 | 93.37845 | 1.0216 | 1.02344 | 84.8607 | 8.51774 | 17 |
| 24.1049 | 0.66866 | 9.87186 | 3.3468 | 92.19843 | 1.02186 | 1.02344 | 84.85585 | 7.34257 | 17 |
| 27.03975 | 1.03995 | 11.22065 | 3.81248 | 91.30576 | 1.02205 | 1.02344 | 84.8493 | 6.45646 | 17 |
| 29.79727 | 1.48931 | 12.48117 | 4.25341 | 90.64164 | 1.02219 | 1.02344 | 84.84136 | 5.80028 | 17 |
| 32.69601 | 2.07932 | 13.79679 | 4.72195 | 90.07298 | 1.02232 | 1.02344 | 84.83096 | 5.24202 | 17 |
| 35.56625 | 2.79513 | 15.08735 | 5.19279 | 89.60609 | 1.02242 | 1.02344 | 84.81832 | 4.78777 | 17 |
| 38.4002 | 3.64318 | 16.34723 | 5.6666 | 89.21583 | 1.0225 | 1.02344 | 84.80336 | 4.41247 | 17 |
| 41.18972 | 4.62753 | 17.57129 | 6.14415 | 88.88463 | 1.02258 | 1.02344 | 84.78599 | 4.09864 | 17 |
| 43.92667 | 5.74976 | 18.75531 | 6.62624 | 88.59991 | 1.02264 | 1.02344 | 84.76618 | 3.83374 | 17 |
| 46.6034 | 7.00888 | 19.89643 | 7.11369 | 88.35243 | 1.02269 | 1.02344 | 84.74397 | 3.60846 | 17 |
| 49.2131 | 8.40164 | 20.99334 | 7.60734 | 88.13516 | 1.02274 | 1.02344 | 84.71938 | 3.41578 | 17 |
| 51.75012 | 9.92278 | 22.04634 | 8.10798 | 87.94277 | 1.02278 | 1.02344 | 84.69254 | 3.25023 | 17 |
| 54.21018 | 11.5655 | 23.05716 | 8.61638 | 87.77106 | 1.02282 | 1.02344 | 84.66355 | 3.10751 | 17 |
| 56.5904 | 13.32197 | 24.02867 | 9.13321 | 87.61673 | 1.02286 | 1.02344 | 84.63255 | 2.98417 | 17 |
| 58.88924 | 15.1837 | 24.9645 | 9.6591 | 87.47712 | 1.02289 | 1.02344 | 84.5997 | 2.87742 | 17 |
| 61.10639 | 17.14204 | 25.86874 | 10.19458 | 87.35009 | 1.02292 | 1.02344 | 84.56514 | 2.78495 | 17 |
| 63.24258 | 19.18842 | 26.74555 | 10.7401 | 87.23388 | 1.02294 | 1.02344 | 84.52903 | 2.70485 | 17 |
| 65.29939 | 21.31461 | 27.59901 | 11.29605 | 87.12704 | 1.02297 | 1.02344 | 84.49151 | 2.63553 | 17 |
| 67.27898 | 23.51289 | 28.4329 | 11.86273 | 87.02835 | 1.02299 | 1.02344 | 84.45271 | 2.57564 | 17 |
| 69.18401 | 25.77611 | 29.25064 | 12.4404 | 86.93682 | 1.02301 | 1.02344 | 84.41277 | 2.52405 | 17 |

THIS IS FREE SURFACE

M ULTIPOR BAQUEOI FUSER IN ARBITRA DENSITY RATIFIED VIRONMENT




| X | Y | JET WIDT | DILUTION | JET TEM | JET DENS | AMB DEN | AMB TEM | DELTA T | ALLOW T |
|---|---|---|---|---|---|---|---|---|---|
| 9.33539 | 0.00007 | 3.03464 | 1.02577 | 112.17 | 1.0174 | 1.02344 | 84.86765 | 27.30238 | 17 |
| **13.9742** | **0.091008** | **5.185152** | | | | | | **17** | |
| 15.08631 | 0.11281 | 5.70072 | 1.92784 | 99.39574 | 1.02022 | 1.02344 | 84.86565 | 14.53009 | 17 |
| 18.03966 | 0.2835 | 7.06706 | 2.39208 | 96.5776 | 1.02085 | 1.02344 | 84.86265 | 11.71495 | 17 |
| 21.14861 | 0.57459 | 8.50067 | 2.88277 | 94.58665 | 1.02129 | 1.02344 | 84.85751 | 9.72915 | 17 |
| 24.07964 | 0.97431 | 9.84494 | 3.34874 | 93.2373 | 1.02159 | 1.02344 | 84.85046 | 8.38684 | 17 |
| 26.98863 | 1.51109 | 11.16857 | 3.81644 | 92.21555 | 1.02181 | 1.02344 | 84.84098 | 7.37458 | 17 |
| 29.70689 | 2.15608 | 12.3925 | 4.2605 | 91.4544 | 1.02198 | 1.02344 | 84.8296 | 6.6248 | 17 |
| 32.5435 | 2.99476 | 13.65279 | 4.73407 | 90.80144 | 1.02213 | 1.02344 | 84.8148 | 5.98664 | 17 |
| 35.32558 | 3.99948 | 14.869 | 5.21222 | 90.26404 | 1.02225 | 1.02344 | 84.79707 | 5.46697 | 17 |
| 38.04129 | 5.17179 | 16.03531 | 5.69614 | 89.81347 | 1.02235 | 1.02344 | 84.77638 | 5.03708 | 17 |
| 40.67979 | 6.50884 | 17.1484 | 6.18705 | 89.42973 | 1.02244 | 1.02344 | 84.75278 | 4.67694 | 17 |
| 43.23207 | 8.00395 | 18.20785 | 6.68615 | 89.09853 | 1.02251 | 1.02344 | 84.7264 | 4.37213 | 17 |
| 45.69145 | 9.64746 | 19.21586 | 7.19456 | 88.80935 | 1.02258 | 1.02344 | 84.6974 | 4.11196 | 17 |
| 48.05373 | 11.42778 | 20.17673 | 7.71328 | 88.55434 | 1.02263 | 1.02344 | 84.66598 | 3.88836 | 17 |
| 50.31712 | 13.33232 | 21.09603 | 8.24321 | 88.32748 | 1.02269 | 1.02344 | 84.63237 | 3.69511 | 17 |
| 52.48186 | 15.34833 | 21.97987 | 8.78506 | 88.12411 | 1.02273 | 1.02344 | 84.59679 | 3.52731 | 17 |
| 54.54987 | 17.46351 | 22.83433 | 9.33943 | 87.94055 | 1.02277 | 1.02344 | 84.55947 | 3.38108 | 17 |
| 56.52425 | 19.66639 | 23.66506 | 9.90678 | 87.77387 | 1.02281 | 1.02344 | 84.52059 | 3.25328 | 17 |
| 58.40893 | 21.94654 | 24.47704 | 10.48749 | 87.6217 | 1.02285 | 1.02344 | 84.48035 | 3.14134 | 17 |
| 60.20831 | 24.29461 | 25.2745 | 11.0818 | 87.48209 | 1.02288 | 1.02344 | 84.43892 | 3.04317 | 17 |

T HIS IS FRI SURFACE

| Golder Associates | SUBJECT Predicted vs Allowed Mixing Zones | | |
|---|---|---|---|
| | Job No. 07387685<br>Ref. FPL Uprate PSL<br>Calculation 14 | Made By H. Fredlani<br>Checked S. Asamenaw<br>Reviewec | Date: 11/21/2007<br>Sheet 1 of 4 |

From the NPDES Permit (see attachment1), page 4, we have the following mixing zone (ΔT <= 17 deg F) limits:

(numbers in black are from permit, numbers in red are calculated from black numbers)

| | Y-port | | Multiport | | Both |
|---|---|---|---|---|---|
| Acre-Feet | 283.9 | | 10.7 | | |
| cubic meters | 350,202 | | 13,198 | | |
| cubic feet | 12,367,168 | | 466,092 | | |
| seaward extent (feet) | 380.0 | | 1,385.5 | | |
| width perpendicular to pipe axis (feet) | | | 21.0 | | |
| height above bottom of discharge (feet) | 27.26 | | 8.0 | | |
| length (meters) | 115.82 | | | | |
| height above bottom (meters) | 8.31 | | | | |
| square meters | 42,142 | | 5,406 | | 47,548 |
| square feet | 453,613 | | 58,191 | | 511,804 |

From Calc 12, calculate the mixing zone size for the Y-Port Diffuser for pre- and post-uprate conditions:

At the origin, for each port, there is a circular cross section with radius = 7.5/2 = 3.75 feet

Area = $\pi * R^2 = \pi * (3.75)^2$ = 44.18 sq ft.

First point for Case 1 is at X = 46.84 ft where jet width = 15.2 ft, radius = 15.2/2 = 7.6 ft., Area = 180.5 sq ft

Second point is at 61.45 ft (see calc 12) . At this point, radius of circle = area = zero.

Using average end-area method, volume = (44.18+180.5)*(46.84/2) + (180.5+0)*((61.45-46.84)/2)

Volume = 6,581 cubic feet per nozzle, total = 13,161 cubic feet

Similarly, cross sectional area =(((7.5 + 15.2)/2)*46.84)+ (((15.2+0.0)/2)*(61.45-46.84)) = 643 sq ft per nozzle

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First point for Case 2 at X = 46.84 ft where jet width = 15.2 ft, radius = 15.2/2= 7.6 ft, A = 180.504 sq ft

Second point is at X = 65.3; At this point, radius of circle = area = zero.

Using average end-area method, volume = (44.18+180.5)*(46.84/2) + (180.5+0)*((65.3-46.84)/2)

Volume = 6,928 cubic feet per nozzle, total = 13,856 cubic feet

Similarly, cross sectional area =(((7.5 + 15.16)/2)*46.84)+ (((15.16+0.0)/2)*(65.3-46.84)) = 671 sq ft per nozzle

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Similarly, for case 3, distance to first point is still 46.84 ft, to second point at 17 deg isotherm, its 70.8 ft

Volume =(44.18+180.5)*(46.84/2) + ((180.5 + 0)*(70.8-46.84)/2) = 7,424 cubic feet per nozzle, = 14,849 cu ft

Area = (((7.5 + 15.16)/2)*46.84)+ (((15.16+0.0)/2)*(70.8-46.84)) = 712 sq ft per nozzle.

On page 2, tabulate permitted values vs. predicted for Y-port diffuser.

| Golder Associates | SUBJECT Predicted vs Allowed Mixing Zones | | |
|---|---|---|---|
| | Job No. 07387685<br>Ref. FPL Uprate PSL<br>Calculation 14 | Made By H. Frediani<br>S. Asamenaw<br>Reviewed | Date: 11/21/2007<br>Sheet 2 of 4 |

From the previous page, tabulate the Y-Port Diffuser values (in blue) for the pre- and post-uprate plumes with the permitted limits:

| | permitted | Case 1 - (existing) | Case 2- (113°F) | Case 3 -(117°F) |
|---|---|---|---|---|
| Acre-Feet | 283.9 | 0.31 | 0.32 | 0.34 |
| cubic meters | 350,202 | 373 | 392 | 420 |
| cubic feet | 12,367,168 | 13,161 | 13,856 | 14,849 |
| seaward extent (feet) | 380.0 | 63.20 | 65.3 | 70.8 |
| width perpendicular to pipe axis (feet) | | | | |
| height above bottom of discharge (feet) | 27.26 | 7.6 | 7.6 | 7.6 |
| length (meters) | 115.82 | 19.3 | 19.9 | 21.6 |
| height above bottom (meters) | 8.31 | 2.32 | 2.32 | 2.32 |
| square meters | 42,142 | 119 | 125 | 132 |
| square feet | 453,613 | 1,285 | 1,341 | 1,425 |

From Calc 13, calculate the mixing zone size for the Multiport Diffuser for pre- and post-uprate conditions:

At the origin, for each port, there is a circular cross section with radius = 17.75/(12*2) = 0.74 feet

Area = $\pi * R^2$ = $\pi$ *( 0.74) ^ 2 = 1.72 sq ft.

First point for Case 4 is at X = 9.3 ft where jet width = 3.0 ft, radius = 3.0/2 = 1.50 ft., Area = 7.07 sq ft

Second point is at X = 12.4 ft; At this point, radius of circle = area = zero.

Using average end-area method, volume = (1.72+7.07)*(9.3/2) + (7.07+0)*((12.4-9.3)/2)

Volume = 52 cubic feet per nozzle, total = 3,006 cubic feet

Similarly, cross sectional area =(((1.48 + 3.0)/2)*9.3)+ (((3.0+0.0)/2)*(12.4-9.3)) = 25.5 sq ft per nozzle = 1,478 sq ft

Distance from pipe centerline = X * SIN(25°) = 5.24 ft.

Length along main pipe from first to last port = (58-1)*24 = 1,368 feet

Add in the extent of the plume from the last port = 12.4 * COS(25°) = 11.2 ft

Total mixing zone extent seaward = 1368 + 11.2 = 1,379 feet

| Golder Associates | SUBJECT Predicted vs Allowed Mixing Zones | | |
|---|---|---|---|
| | Job No. 07387685<br>Ref. FPL Uprate PSL<br>Calculation 14 | Made By H. Frediani<br>Checked S. Asamenaw<br>Reviewed | Date: 11/21/2007<br>Sheet 3 of 4 |

For the Multiport Diffuser for post-uprate conditions (Cases 5 and 6):

At the origin, for each port, there is a circular cross section with radius =17.75/(2*12) = 0.74 feet

Area = $\pi * R^2 = \pi * (0.74)^2 =$ 1.72 sq ft.

First point for Case 5 is at X = 9.3 ft where jet width = 3.0 ft, radius = 3.0/2 = 1.50 ft., Area = 7.07 sq ft

Second point is at X = 12.9; At this point, radius of circle = area = zero.

Using average end-area method, volume = (1.72+7.07)*(9.3/2) + (7.07+0)*((12.9-9.3)/2)

Volume = 54 cubic feet per nozzle, total = 3,109 cubic feet

Similarly, cross sectional area =(((1.48 + 3.0)/2)*9.3)+ (((3.0+0.0)/2)*(12.9-9.3)) = 26 sq ft per nozzle
= 1,521 sq ft

Distance from pipe centerline = X * SIN(25°) = 5.45 ft.

Length along main pipe from first to last port = (58-1)*24 = 1,368 feet

Add in the extent of the plume from the last port = 12.9 * COS(25°) = 11.7 ft

Total mixing zone extent seaward = 1368 + 11.7 = 1,380 feet

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First point for Case 6 is at X = 9.3 ft where jet width = 3.0 ft, radius = 3.0/2 = 1.50 ft., Area = 7.07 sq ft

Second point is at X = 14.0; At this point, radius of circle = area = zero.

Using average end-area method, volume = (1.72+7.07)*(9.3/2) + (7.07+0)*((14.0-9.3)/2)

Volume = 57.5 cubic feet per nozzle, total = 3,334 cubic feet

Similarly, cross sectional area =(((1.48 + 3.0)/2)*9.3)+ (((3.0+0.0)/2)*(14.0-9.3)) = 28 sq ft per nozzle
= 1,617 sq ft

Distance from pipe centerline = X * SIN(25°) = 5.92 ft.

Length along main pipe from first to last port = (58-1)*24 = 1,368 feet

Add in the extent of the plume from the last port = 12.9 * COS(25°) = 12.7 ft

Total mixing zone extent seaward = 1368 + 12.7 = 1,381 feet

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On page 4, tabulate permitted values vs. predicted for multiportport diffuser.

| Golder Associates | SUBJECT Predicted vs Allowed Mixing Zones | | |
|---|---|---|---|
| | Job No. 07387685<br>Ref. FPL Uprate PSL<br>Calculation 14 | Made By H. Frediani<br>S. Asamenaw<br>Reviewed | Date: 11/21/2007<br>Sheet 4 of 4 |

From the previous page, tabulate theMultiport Diffuser values (in blue) for the pre- and post-uprate plumes with the permitted limits:

| | Permitted | Case 4 (Existing) | Case 5 (113°F) | Case 6 (117°F) |
|---|---|---|---|---|
| Acre-Feet | 10.7 | 0.069 | 0.071 | 0.077 |
| cubic meters | 13,198 | 85 | 88 | 94 |
| cubic feet | 466,092 | 3,006 | 3,109 | 3,334 |
| seaward extent (feet) | 1,385.5 | 1,379 | 1,380 | 1,381 |
| width perpendicular to pipe axis (feet) | 21.0 | 5.2 | 5.5 | 5.92 |
| height above bottom of discharge (feet) | 8.0 | 0.04 | 0.04 | 0.06 |
| length (meters) | | | | |
| height above bottom (meters) | | | | |
| square meters | 5,406 | 137 | 141 | 150 |
| square feet | 58,191 | 1,478 | 1,521 | 1,617 |

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C     MULTIPORT DIFFUSER IN A STABLY DENSITY-STRATIFIED STAGNANT ENVIRN.
C     THIS PROGRAM WILL OUTPUT THE JET TEMPERATURE DISTRIBUTION AT 1/2
C     FT INTERVALS FROM THE JET ORIFICE TO THE FREE SURFACE. INPUT
C     PARAMETERS MAY BE IN FPS,MKS OR CGS UNITS. WHEN SPECIFYING TABLE
C     OF AMBIENT DEPTH, TEMPERATURE AND DENSITY, FIRST DEPTH MUST BE
C     EQUAL OR LESS THAN DJ, THEN WORK TOWARDS SURFACE. IF AMBIENT IS
C     UNIFORM, SPECIFY TWO POINTS, AT DJ AND AT 1 FT- WHEN THE TWO
C     VALUES COINCIDE,AMBIENT IS UNIFORM. THE INPUT PARAMETERS ARE
C     DEFINED AS FOLLOWS:
C     NC            NUMBER OF STRATIFIED LAYERS INPUTTED
C     DO            DIAMETER OF INDIVIDUAL JETS
C     UO            VELOCITY OF JET DISCHARGE
C     TO            TEMPERATURE OF DISCHARGE
C     DEN1          DENSITY OF DISCHARGE(MUST BE IN GM/CC)
C     THETAO        ANGLE OF DISCHARGE W/RESPECT TO HORIZ.
C     DJ            DEPTH OF DISCHARGE
C     SPACJ         JET SPACING(BETWEEN CENTERS)
C     D(I=1,NC)     DEPTH AT WHICH AMBIENT SPECIFIED
C     TA(I=1,NC)    AMBIENT TEMPERATURE AT D(I=1,NC)
C     DENA(I=1,NC)  AMBIENT DENSITY AT D(I=1,NC)
C     GRAVAC        GRAVITATIONAL ACCELERATION
      PROGRAM MULDIF
      DIMENSION TA(50),D(50),DENA(50),ET(50),ED(50),YT(50)
      DIMENSION Y(6),YP(6)
      REAL LAMBDR,LAMBDS,M
      COMMON LAMBDR,LAMBDS,M,H,ALPHAR,ALPHAS,NC,ET,ED,PAI,GRAVAC,YT,IK
     1,ICHEK,IQ,SPACJ
    1 FORMAT(1I10,7F10.6)
   10 FORMAT (3F10.6)
   11 FORMAT (3F10.5)
  100 FORMAT(T11,'MULTIPORT SUBAQUEOUS DIFFUSER IN AN ARBITRARILY DENSIT
     1Y STRATIFIED ENVIRONMENT',////T60,'AA= ',F6.2,' FEET',//T28,'1----
     2--AA------1',T61,'A= ',F6.2,' FEET',/T43,'1',/T25,'*--A--*
     3*     *',T60,'JET DISCHARGE ANGLE= ',F6.2,' DEGREES W/HORIZ',
     4/T11,'***************     **********     **********',/T55,'*',
     5T60,'JET DISCHARGE VELOCITY= ', F6.2,' FT/SEC',/T55,'*',/T11,'****
     6**************************************    JET DISCHARGE TEMPERA
     7TURE= ',F6.2,' F',/T60,'JET DISCHARGE DENSITY= ',F8.6,' GRAM/CC',
     8/T60,'JET DISCHARGE DEPTH= ',F6.2,' FEET'//////)
  102 FORMAT (75H1ROW BUOYANT JETS IN AN ARBITRARILY DENSITY STRATIFIED
     1STAGNANT ENVIRONMENT///5X,13HJET DIAMETER=,1F6.3,6HMETERS,5X,
     223HJET DISCHARGE VELOCITY=,1F6.2,8HMET./SEC/5X, 26HJET DISCHARGE T
     3EMPERATURE=,1F6.2,13HDEGREE CENTIG,5X,22HJET DISCHARGE DENSITY=,
     41F10.7, 11HGRAM PER ML/4X,18H JET DISCH.ANGLE=,1F6.2,8H DEGREES/
     55X,20HJET DISCHARGE DEPTH=,1F6.2,6HMETERS,5X,16HJET SPACING C-C=,
     61F6.2,6HMETERS)
  103 FORMAT (75H1ROW BUOYANT JETS IN AN ARBITRARILY DENSITY STRATIFIED
     1STAGNANT ENVIRONMENT///5X, 13HJET DIAMETER=,1F6.2,4H CM.,5X,
     223HJET DISCHARGE VELOCITY=,1F6.2,8H CM./SEC/5X, 26HJET DISCHARGE T
     3EMPERATURE=,1F6.2,13HDEGREE CENTIG, 5X,22HJET DISCHARGE DENSITY=,
     41F10.7, 11HGRAM PER ML/4X,18H JET DISCH. ANGLE=, 1F6.2,8H DEGREES/
     55X,20HJET DISCHARGE DEPTH=,1F6.2,4H CM.,   5X,16HJET SPACING C-C=,
     61F6.2,4H CM.)
  111 FORMAT(///7X,1HX,10X,1HY,6X,9HJET WIDTH,3X,8HDILUTION,3X,7HJET TEM
     1,3X,8HJET DENS,4X,7HAMB DEN,4X,7HAMB TEM,4X,7HDELTA T,3X,7HALLOW T
     2)
  120 FORMAT(5X,53H INSUFFICIENT DATA ON AMBIENT DENSITY AND TEMPERATURE
```

```
     1)
   222 FORMAT (12F11.5)
   520 FORMAT (10X, 20HTRANSITION POINT TWO)
   532 FORMAT (10X,20HTHIS IS FREE SURFACE)
  1222 FORMAT (10X,20HTRANSITION POINT ONE)
   204 READ(5,1)NC,DO,UO,TO,DEN1,THETAO,DJ,SPACJ
       IF (DO) 2,2,3
     2 GO TO 104
     3 READ(5,10) (D(I),TA(I),DENA(I),I=1,NC)
       READ (5,11) GRAVAC,BLDR,RIVR
       TRA=(BLDR*TO+RIVR*TA(1))/(BLDR+RIVR)
       TRA=TA(1)
       PAI=3.14159265
       ALPHAR=.082
       ALPHAS=.16
       LAMBDR=1.16
       LAMBDS=1.
       DO 999 I=1,NC
   999 YT(I)=DJ-D(I)
       THETA=THETAO*PAI/180.
       ZIP=1.5
       ICHEK=0.
       L=0
C      CHECK PHYSICAL UNITS
       IF(GRAVAC-900.) 97,97,98
    97 IF(GRAVAC-30.) 101,99,99
C      IN FPS UNITS
    99 WRITE(6,100) SPACJ,DO,THETAO,UO,TO,DEN1,DJ
       GO TO 110
C      IN MKS UNITS
   101 WRITE (6,102) DO,UO,TO,DEN1,THETAO,DJ,SPACJ
       GO TO 110
C      IN CGS UNITS
    98 WRITE (6,103) DO,UO,TO,DEN1,THETAO,DJ,SPACJ
   110 WRITE(6,111)
       S=0.
C      TO FIND REFERENCE TEMPERATURE AND DENSITY
       IR=1
       IF (DJ-D(IR)) 112,113,114
   113 TR=TA(IR)
       DENR=DENA(IR)
       GO TO 118
   112 IR=IR+1
       IF (DJ-D(IR))  112,113,117
   114 WRITE (6,120)
       GO TO 204
   117 SL=(DJ-D(IR))/(D(IR-1)-D(IR))
       TR=TA(IR)+SL*(TA(IR-1)-TA(IR))
       DENR=DENA(IR)+SL*(DENA(IR-1)-DENA(IR))
C      INITAL CONDITIONS
   118 Y(1)=PAI*DO*DO*UO*0.5
       M=Y(1)*UO*0.5
       VOLFJ=Y(1)
       H=M*COS(THETA)
       Y(2)=M*SIN(THETA)
       Y(3)=Y(1)*(DENR-DEN1)/DENR*0.5
       Y(4)=Y(1)*(TR-TO)/TR*0.5
```

```
      Y(5)=6.2*DO*COS(THETA)
      Y(6)=6.2*DO*SIN(THETA)
      IQ=0
      IP=0
      IK=2
      SQLAM=(1.+LAMBDR*LAMBDR)/(LAMBDR*LAMBDR)
      SQRLAM=SQRT(1.+LAMBDS*LAMBDS)/LAMBDS
C     CALCULATION OF DENSITY AND TEMPERATURE GRAIDENTS
      NC1=NC-1
      DO 912 I=1,NC1
      I1=I+1
      DP1=YT(I1)-YT(I)
      ET(I)=(TA(I1)-TA(I))/(TR*DP1)
  912 ED(I)=(DENA(I1)-DENA(I))/(DENR*DP1)
C     CHOICE OF INTEGRATION STEP
      DS1=DO/9.
      DS2=DJ/100.
      K=1
      IF (DS1-DS2) 301,301,302
  301 DS=DS1
      GO TO 303
  302 DS=DS2
C     INTEGRATION BY RUNGE-KUTTA METHOD
      K=1
  303 CALL RUNGS (S,DS,6,Y,YP,L)
  304 Y20=Y(2)
      CALL RUNGS (S,DS,6,Y,YP,L)
      IF (Y(2)*Y20) 20,21,21
   20 K=K+1
      IF(K-3) 21,22,22
   22 IF(ICHEK-1) 204,511,204
   21 CONTINUE
C     LOOP FOR TRANSITION POINT TWO
      IF(ICHEK-2) 513,514,204
  513 IF(ICHEK-1) 203,206,206
  203 TRANW=SPACJ
C     ROUND JET SOLUTION
  514 IF (Y(6)-DJ) 530,531,531
  531 WRITE (6,532)
      GO TO 204
  530 IF (IQ) 533,533,206
  533 M=SQRT(H*H+Y(2)*Y(2))
      WIDTH=2.*Y(1)/SQRT(PAI*M)
      IF(WIDTH-TRANW)207,206,206
C     PRINT SPACING CONTROL
  207 SJP=2.*DO
      PI=IP*SJP
      IF(S-PI)220,221,221
  220 GO TO 304
  221 IP=IP+1.
      DENDIF=SQLAM*DENR*Y(3)/Y(1)
      TDIF=SQLAM*TR*Y(4)/Y(1)
      DILU=Y(1)/VOLFJ
      IF (DENDIF) 401,920,920
  401 DENDIF=DENDIF*0.5
      TDIF=0.5 * TDIF
C     TO FIND AMBIENT DENSITY AND TEMPERATURE VALUES
```

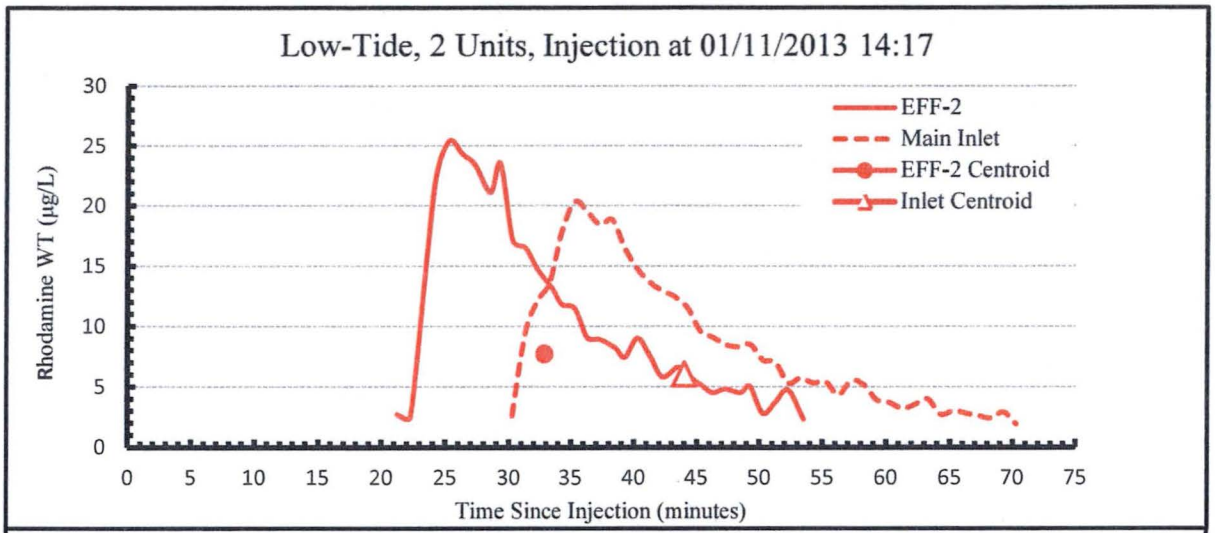
```
  920 IY=2
  906 IF (Y(6)-YT(IY))  900,901,902
  901 DENAA=DENA(IY)
      TAA=TA(IY)
      IY=IY+1
      GO TO 909
  900 IY=IY-1
      IF (Y(6)-YT(IY)) 900,901,905
  905 IYY=IY+1
      SYY=(Y(6)-YT(IYY))/(YT(IY)-YT(IYY))
      TAA=SYY*(TA(IY)-TA(IYY))+TA(IYY)
      DENAA=SYY*(DENA(IY)-DENA(IYY))+DENA(IYY)
      GO TO 909
  902 IY=IY+1
      GO TO 906
  909 TJ=TAA-TDIF
      DENJ=DENAA-DENDIF
      TDIFM=-TDIF
      IF(1.3-DILU)428,423,423
  428 IF(DILU-ZIP)304,425,425
  425 ZIP=ZIP+.5
  423 ALT=17.
      WRITE (6,222) Y(5),Y(6),WIDTH,DILU,TJ,DENJ,DENAA,TAA,TDIFM,ALT
      GO TO 304
C     SLOT JET SOLUTION
C     CHECK TRANSITION POINT ONE OR TWO
  206 IF (Y(6)-DJ) 522,511,511
  511 ICHEK=ICHEK+1
      IF (ICHEK-2) 512,512,204
C     TRANSITION POINT TWO
  512 S=SO
      Y(1)=Y1
      Y(2)=Y2
      Y(3)=Y3
      Y(4)=Y4
      Y(5)=Y5
      Y(6)=Y6
      IP=IPC
      IK=IKC
      IQ=O
      IY=IYC
      L=O
      K=KI
      WRITE (6,520)
      GO TO 303
  522 IQ=1
      IF (ICHEK-1) 240,241,241
C     TRANSITION POINT ONE
  240 WRITE (6,1222)
C     STORE SOLUTIONS AS INITIAL CONDITIONS FOR TRANSITION POINT TWO
      SO=S
      Y1=Y(1)
      Y2=Y(2)
      Y3=Y(3)
      Y4=Y(4)
      Y5=Y(5)
      Y6=Y(6)
```

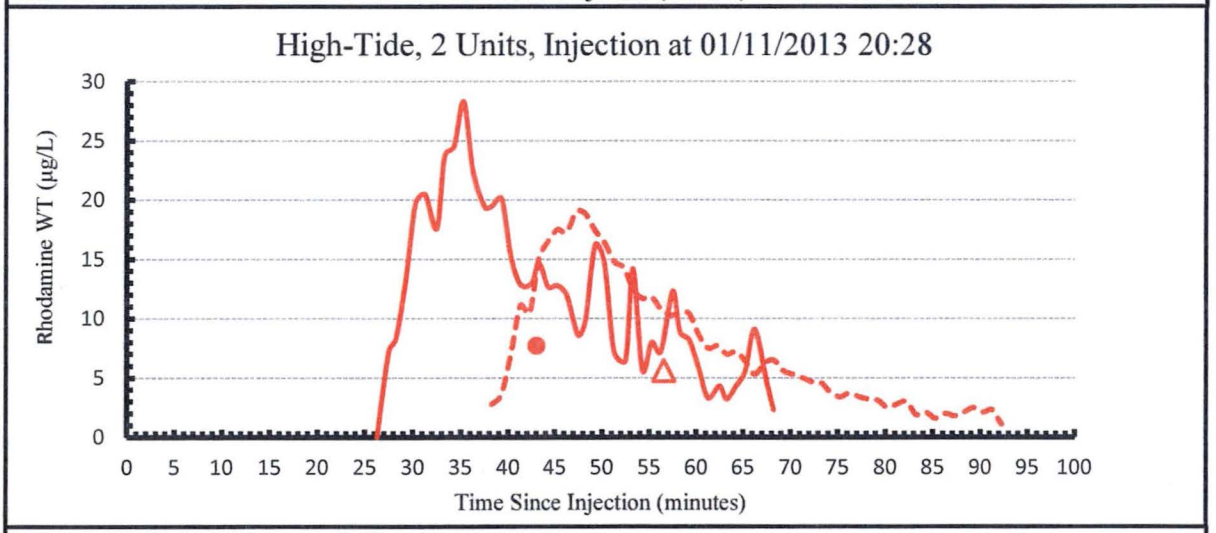
```
      TRANW=2.*ALPHAS*SPACJ/(PAI*ALPHAR)
      IPC=IP
      KI=K
      IKC=IK
      ICHEK=ICHEK+1
      IYC=IY
C     PRINT SPACING CONTROL
  241 PI=IP*SJP
      IF (S-PI) 304,501,501
  501 IP=IP+1
      M=SQRT(H*H+Y(2)*Y(2))
      WIDTH=Y(1)*Y(1)/(SQRT(PAI)*M*SPACJ)*2.
      DENDIF=SQRLAM*DENR*Y(3)/Y(1)
      TDIF=SQRLAM*TR*Y(4)/Y(1)
      DILU=Y(1)/VOLFJ
      IF (DENDIF) 402,906,906
  402 CONST=0.5*SQRT(PAI*0.5)
      DENIF=CONST*DENDIF
      TDIF=CONST*TDIF
      GO TO 906
  104 STOP
      END
      SUBROUTINE  DERIVE (S,N,Y,YP)
      DIMENSION Y(6),YP(6)
      DIMENSION ET(50),ED(50),YT(50)
      REAL LAMBDR,LAMBDS,M
      COMMON LAMBDR,LAMBDS,M,H,ALPHAR,ALPHAS,NC,ET,ED,PAI,GRAVAC,YT,IK
     1,ICHEK,IQ,SPACJ
C     COMPUTATION OF DENSITY AND TEMPERATURE GRADIENTS AT Y
  814 IF (Y(6)-YT(1)) 811,811,812
  812 IF (Y(6)-YT(NC)) 806,813,813
  811 EDD=ED(1)
      ETT=ET(1)
      GO TO 70
  813 EDD=ED(NC-1)
      ETT=ET(NC-1)
      GO TO 70
  806 IF (Y(6)-YT(IK)) 800,801,802
  801 EDD=(ED(IK)+ED(IK-1))*0.5
      ETT=(ET(IK)+ET(IK-1))*0.5
      IK=IK+1
      GO TO 70
  800 IK=IK-1
      IF(Y(6)-YT(IK)) 800,801,805
  805 EDD=ED(IK)
      ETT=ET(IK)
      IK=IK+1
      GO TO 70
  802 IK=IK+1
      IF (IK-NC) 814,814,807
  807 WRITE (6,808)
  808 FORMAT (10X,25H THIS IS THE FREE SURFACE)
      RETURN
   70 IF (IQ) 71,71,72
C     ROUND JET SOLUTION
   71 ENTRAN=2.* ALPHAR*SQRT(2.*PAI*M)
      CLAM=(1.+LAMBDR*LAMBDR)/2.
```

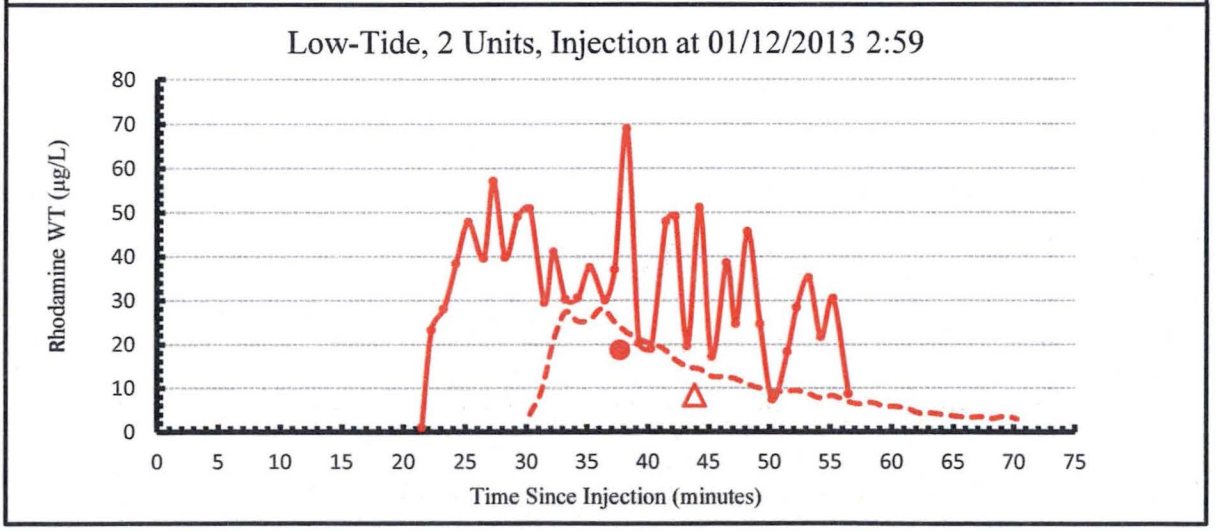
```
      GO TO 73
C     SLOT JET SOLUTION
   72 ENTRAN=2.*SQRT(2.)*ALPHAS*SPACJ*M/Y(1)
      CLAM=SQRT((1.+LAMBDS*LAMBDS)/2.)
   73 SQROTM=SQRT(Y(2)*Y(2)+H*H)
      YP(1)=ENTRAN
      YP(2)=CLAM * GRAVAC * Y(1) * Y(3)/SQROTM
      YP(3)=Y(1) * EDD * Y(2)/SQROTM
      YP(4)=Y(1) * ETT * Y(2)/SQROTM
      YP(5)=H/SQROTM
      YP(6)=Y(2)/SQROTM
      RETURN
      END
      SUBROUTINE  RUNGS (X,H,N,Y,YPRIME,INDEX)
      DIMENSION Y(7),YPRIME(7),Z(7),W1(7),W2(7),W3(7),W4(7)
CRUNGS - RUNGE-KUTTA SOLUTION OF SET OF FIRST ORDER O.D.E. FORTRAN II
      IF (INDEX) 5,5,1
    1 DO 2 I=1,N
      W1(I)=H * YPRIME(I)
    2 Z(I)=Y(I)+(W1(I)*.5)
      A=X+H/2.
      CALL DERIVE (A,N,Z,YPRIME)
      DO 3 I=1,N
      W2(I)=H * YPRIME(I)
    3 Z(I)=Y(I)+.5*W2(I)
      A=X+H/2.
      CALL DERIVE (A,N,Z,YPRIME)
      DO 4 I=1,N
      W3(I)=H * YPRIME(I)
    4 Z(I)=Y(I)+W3(I)
      A=X+H
      CALL DERIVE (A,N,Z,YPRIME)
      DO 7 I=1,N
      W4(I)=H * YPRIME(I)
    7 Y(I)=Y(I)+(((2.*(W2(I)+W3(I)))+W1(I)+W4(I))/6.)
      X=X+H
      CALL DERIVE (X,N,Y,YPRIME)
      GO TO 6
    5 CALL DERIVE (X,N,Y,YPRIME)
      INDEX=1
    6 RETURN
      END
```

# APPENDIX C

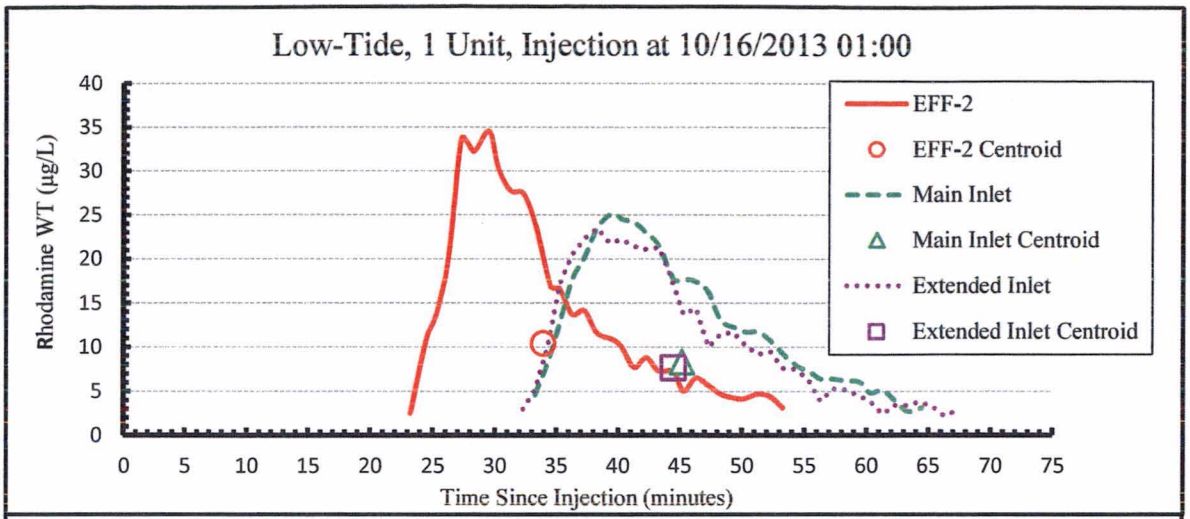
Appendix C
Rhodamine WT Dye Recovery Curves and Calculated Centroids
Travel Time Study during Full Operating Conditions

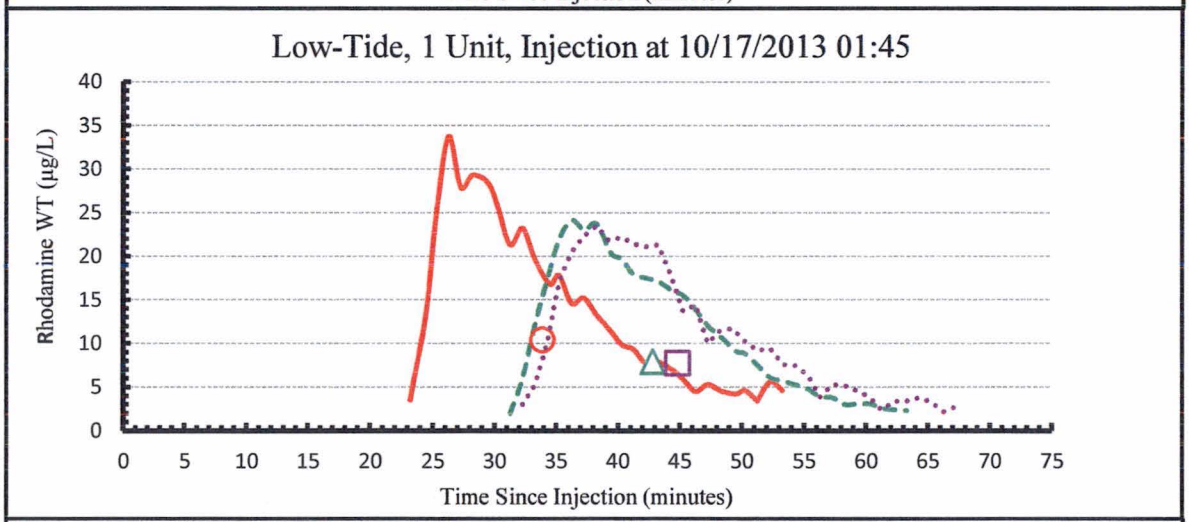


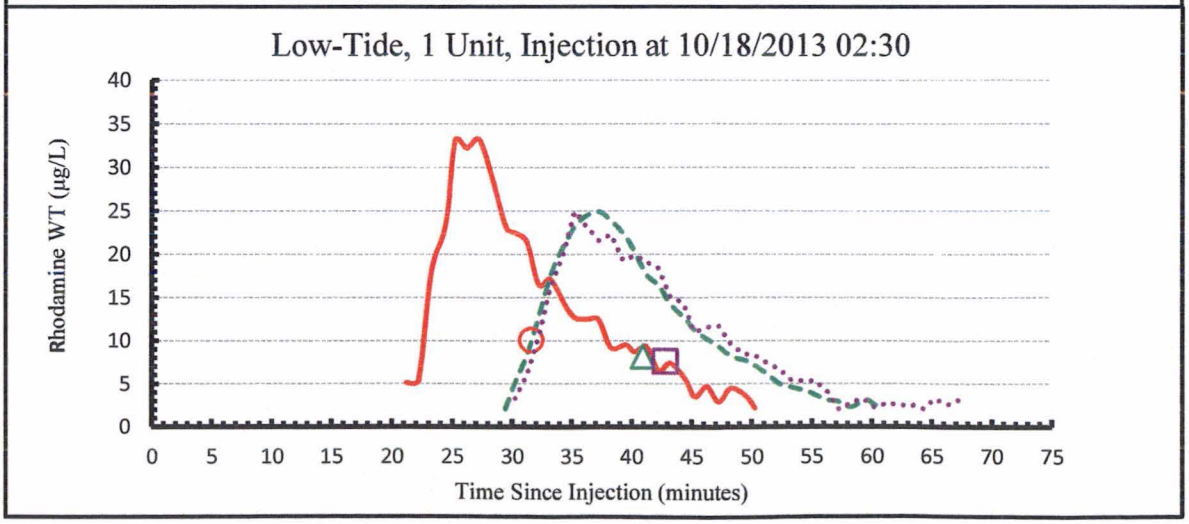



Appendix C
Rhodamine WT Dye Recovery Curve and Calculated Centroids
Travel Time Study during Single Unit Operating Conditions



# APPENDIX D

Appendix D
Phase 1 Bench-Scale Decay Data

| Sample Temperature (°C) | Canal Sample pH (SU) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|---|
| 35.3 | 7.99 | 1/9/13 15:01 | 0 | 661 | 100% |
| | | 1/9/13 15:10 | 9 | 541 | 82% |
| | | 1/9/13 15:19 | 18 | 440 | 67% |
| | | 1/9/13 15:25 | 24 | 359 | 54% |
| | | 1/9/13 15:32 | 31 | 361 | 55% |
| | | 1/9/13 15:39 | 38 | 368 | 56% |
| | | 1/9/13 15:39 | 38 | 346 | 52% |
| | | 1/9/13 15:48 | 47 | 323 | 49% |
| | | 1/9/13 15:54 | 53 | 306 | 46% |
| | | 1/9/13 15:59 | 58 | 293 | 44% |
| | | 1/9/13 16:05 | 64 | 282 | 43% |
| 35.2 | 8.04 | 1/9/13 17:18 | 0 | 328 | 100% |
| | | 1/9/13 17:25 | 7 | 233 | 71% |
| | | 1/9/13 17:31 | 13 | 253 | 77% |
| | | 1/9/13 17:37 | 19 | 236 | 72% |
| | | 1/9/13 17:42 | 24 | 196 | 60% |
| | | 1/9/13 17:47 | 29 | 184 | 56% |
| | | 1/9/13 17:54 | 36 | 190 | 58% |
| | | 1/9/13 18:00 | 42 | 162 | 49% |
| | | 1/9/13 18:05 | 47 | 136 | 41% |
| | | 1/9/13 18:10 | 52 | 132 | 40% |
| 35.3 | 8.05 | 1/10/13 12:01 | 0 | 142 | 100% |
| | | 1/10/13 12:07 | 6 | 119 | 84% |
| | | 1/10/13 12:13 | 12 | 105 | 74% |
| | | 1/10/13 12:20 | 19 | 96 | 68% |
| | | 1/10/13 12:26 | 25 | 74 | 52% |
| | | 1/10/13 12:32 | 31 | 77 | 54% |
| | | 1/10/13 12:38 | 37 | 74 | 52% |
| | | 1/10/13 12:44 | 43 | 65 | 46% |
| | | 1/10/13 12:50 | 49 | 63 | 44% |
| | | 1/10/13 12:55 | 54 | 62 | 44% |
| | | 1/10/13 13:01 | 60 | 65 | 46% |

Appendix D
Phase 1 Bench-Scale Decay Data

| Sample Temperature (°C) | Canal Sample pH (SU) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|---|
| 35.3 | 8.01 | 1/10/13 14:28 | 0 | 47 | 100% |
| | | 1/10/13 14:35 | 7 | 52 | 111% |
| | | 1/10/13 14:41 | 13 | 48 | 102% |
| | | 1/10/13 14:47 | 19 | 41 | 87% |
| | | 1/10/13 14:54 | 26 | 52 | 111% |
| | | 1/10/13 15:01 | 33 | 50 | 106% |
| | | 1/10/13 15:01 | 33 | 23 | 49% |
| | | 1/10/13 15:08 | 40 | 65 | 138% |
| | | 1/10/13 15:08 | 40 | 21 | 45% |
| | | 1/10/13 15:14 | 46 | 49 | 104% |
| | | 1/10/13 15:14 | 46 | 25 | 53% |
| | | 1/10/13 15:20 | 52 | 49 | 104% |
| | | 1/10/13 15:20 | 52 | 22 | 47% |
| | | 1/10/13 15:27 | 59 | 121 | 257% |
| | | 1/10/13 15:27 | 59 | 22 | 47% |
| 35.4 | NR | 1/11/13 11:05 | 0 | 57 | 100% |
| | | 1/11/13 11:12 | 7 | 52 | 91% |
| | | 1/11/13 11:19 | 14 | 75 | 132% |
| | | 1/11/13 11:19 | 14 | 72 | 126% |
| | | 1/11/13 11:25 | 20 | 47 | 82% |
| | | 1/11/13 11:31 | 26 | 51 | 89% |
| | | 1/11/13 11:38 | 33 | 52 | 91% |
| | | 1/11/13 11:44 | 39 | 69 | 121% |
| | | 1/11/13 11:49 | 44 | 65 | 114% |
| | | 1/11/13 11:57 | 52 | 77 | 135% |
| | | 1/11/13 12:08 | 63 | 85 | 149% |

# APPENDIX E

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 35.8 | 1/28/2013 14:22 | 0 | 195 | 100% |
| | 1/28/2013 14:28 | 6 | 136 | 70% |
| | 1/28/2013 14:34 | 12 | 109 | 56% |
| | 1/28/2013 14:41 | 19 | 94 | 48% |
| | 1/28/2013 14:45 | 23 | 86 | 44% |
| | 1/28/2013 14:52 | 30 | 81 | 42% |
| | 1/28/2013 14:58 | 36 | 84 | 43% |
| | 1/28/2013 15:04 | 42 | 80 | 41% |
| | 1/28/2013 15:10 | 48 | 81 | 42% |
| | 1/28/2013 15:16 | 54 | 88 | 45% |
| 35.9 | 1/28/2013 15:36 | 0 | 123 | 100% |
| | 1/28/2013 15:42 | 6 | 101 | 82% |
| | 1/28/2013 15:48 | 12 | 87 | 71% |
| | 1/28/2013 15:54 | 18 | 73 | 59% |
| | 1/28/2013 15:59 | 23 | 68 | 55% |
| | 1/28/2013 16:05 | 29 | 66 | 54% |
| | 1/28/2013 16:11 | 35 | 72 | 59% |
| | 1/28/2013 16:17 | 41 | 66 | 54% |
| | 1/28/2013 16:23 | 47 | 82 | 67% |
| | 1/28/2013 16:29 | 53 | 88 | 72% |
| 35.7 | 1/28/2013 16:49 | 0 | 111 | 100% |
| | 1/28/2013 16:54 | 5 | 86 | 77% |
| | 1/28/2013 17:00 | 11 | 87 | 72% |
| | 1/28/2013 17:07 | 18 | 65 | 47% |
| | 1/28/2013 17:12 | 23 | 64 | 28% |
| | 1/28/2013 17:18 | 29 | 64 | 27% |
| | 1/28/2013 17:24 | 35 | 65 | 28% |
| | 1/28/2013 17:29 | 40 | 70 | 37% |
| | 1/28/2013 17:35 | 46 | 70 | 41% |
| 37.3 | 2/25/2013 12:44 | 0 | 144 | 100% |
| | 2/25/2013 12:51 | 7 | 116 | 81% |
| | 2/25/2013 12:56 | 12 | 112 | 78% |
| | 2/25/2013 13:02 | 18 | 97 | 67% |
| | 2/25/2013 13:10 | 26 | 84 | 58% |
| | 2/25/2013 13:15 | 31 | 75 | 52% |
| | 2/25/2013 13:21 | 37 | 65 | 45% |
| | 2/25/2013 13:27 | 43 | 59 | 41% |
| | 2/25/2013 13:32 | 48 | 62 | 43% |
| | 2/25/2013 13:37 | 53 | 56 | 39% |
| | 2/25/2013 13:43 | 59 | 60 | 42% |
| 37.3 | 2/25/2013 14:04 | 0 | 208 | 100% |
| | 2/25/2013 14:12 | 8 | 182 | 88% |
| | 2/25/2013 14:19 | 15 | 184 | 88% |
| | 2/25/2013 14:24 | 20 | 144 | 69% |
| | 2/25/2013 14:30 | 26 | 131 | 63% |
| | 2/25/2013 14:38 | 34 | 110 | 53% |
| | 2/25/2013 14:44 | 40 | 105 | 50% |
| | 2/25/2013 14:49 | 45 | 100 | 48% |
| | 2/25/2013 14:54 | 50 | 104 | 50% |
| | 2/25/2013 15:00 | 56 | 98 | 47% |
| 37.1 | 2/25/2013 15:23 | 0 | 160 | 100% |
| | 2/25/2013 15:29 | 6 | 151 | 94% |
| | 2/25/2013 15:36 | 13 | 121 | 76% |
| | 2/25/2013 15:42 | 19 | 111 | 69% |
| | 2/25/2013 15:47 | 24 | 101 | 63% |
| | 2/25/2013 15:53 | 30 | 100 | 63% |
| | 2/25/2013 15:59 | 36 | 83 | 52% |
| | 2/25/2013 16:05 | 42 | 86 | 54% |
| | 2/25/2013 16:10 | 47 | 77 | 48% |
| | 2/25/2013 16:17 | 54 | 70 | 44% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 33.1 | 3/25/2013 12:04 | 0 | 234 | 100% |
| | 3/25/2013 12:12 | 8 | 182 | 78% |
| | 3/25/2013 12:18 | 14 | 155 | 66% |
| | 3/25/2013 12:25 | 21 | 129 | 55% |
| | 3/25/2013 12:31 | 27 | 110 | 47% |
| | 3/25/2013 12:36 | 32 | 127 | 54% |
| | 3/25/2013 12:42 | 38 | 106 | 45% |
| | 3/25/2013 12:48 | 44 | 106 | 45% |
| | 3/25/2013 12:53 | 49 | 99 | 42% |
| | 3/25/2013 12:58 | 54 | 73 | 31% |
| 33.7 | 3/25/2013 13:23 | 0 | 185 | 100% |
| | 3/25/2013 13:28 | 5 | 89 | 48% |
| | 3/25/2013 13:35 | 12 | 185 | 100% |
| | 3/25/2013 13:41 | 18 | 133 | 72% |
| | 3/25/2013 13:45 | 22 | 63 | 34% |
| | 3/25/2013 13:51 | 28 | 69 | 37% |
| | 3/25/2013 13:55 | 32 | 57 | 31% |
| | 3/25/2013 14:00 | 37 | 47 | 25% |
| | 3/25/2013 14:05 | 42 | 45 | 24% |
| | 3/25/2013 14:09 | 46 | 45 | 24% |
| | 3/25/2013 14:13 | 50 | 45 | 24% |
| | 3/25/2013 14:18 | 55 | 41 | 22% |
| 33.9 | 3/25/2013 14:43 | 0 | 123 | 100% |
| | 3/25/2013 14:48 | 5 | 81 | 66% |
| | 3/25/2013 14:52 | 9 | 68 | 55% |
| | 3/25/2013 14:57 | 14 | 60 | 49% |
| | 3/25/2013 15:01 | 18 | 55 | 45% |
| | 3/25/2013 15:06 | 23 | 48 | 39% |
| | 3/25/2013 15:10 | 27 | 42 | 34% |
| | 3/25/2013 15:13 | 30 | 43 | 35% |
| | 3/25/2013 15:18 | 35 | 29 | 24% |
| | 3/25/2013 15:22 | 39 | 35 | 28% |
| 38.4 | 4/24/2013 12:03 | 0 | 300 | 100% |
| | 4/24/2013 12:12 | 9 | 167 | 56% |
| | 4/24/2013 12:17 | 14 | 114 | 38% |
| | 4/24/2013 12:21 | 18 | 94 | 31% |
| | 4/24/2013 12:27 | 24 | 79 | 26% |
| | 4/24/2013 12:32 | 29 | 75 | 25% |
| | 4/24/2013 12:37 | 34 | 63 | 21% |
| | 4/24/2013 12:43 | 40 | 62 | 21% |
| | 4/24/2013 12:47 | 44 | 61 | 20% |
| | 4/24/2013 12:52 | 49 | 60 | 20% |
| 38.8 | 4/24/2013 13:22 | 0 | 162 | 100% |
| | 4/24/2013 13:27 | 5 | 83 | 51% |
| | 4/24/2013 13:32 | 10 | 68 | 42% |
| | 4/24/2013 13:37 | 15 | 59 | 36% |
| | 4/24/2013 13:42 | 20 | 46 | 28% |
| | 4/24/2013 13:47 | 25 | 40 | 25% |
| | 4/24/2013 13:52 | 30 | 40 | 25% |
| | 4/24/2013 13:57 | 35 | 38 | 23% |
| | 4/24/2013 14:01 | 39 | 37 | 23% |
| | 4/24/2013 14:06 | 44 | 34 | 21% |
| 39.5 | 4/24/2013 14:26 | 0 | 119 | 100% |
| | 4/24/2013 14:30 | 4 | 71 | 60% |
| | 4/24/2013 14:36 | 10 | 55 | 46% |
| | 4/24/2013 14:44 | 18 | 40 | 34% |
| | 4/24/2013 14:49 | 23 | 35 | 29% |
| | 4/24/2013 14:54 | 28 | 30 | 25% |
| | 4/24/2013 14:59 | 33 | 31 | 26% |
| | 4/24/2013 15:04 | 38 | 27 | 23% |
| | 4/24/2013 15:10 | 44 | 28 | 24% |
| | 4/24/2013 15:16 | 50 | 27 | 23% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 35.2 | 5/31/2013 11:17 | 0 | 197 | 100% |
| | 5/31/2013 11:22 | 5 | 131 | 66% |
| | 5/31/2013 11:27 | 10 | 105 | 53% |
| | 5/31/2013 11:33 | 16 | 92 | 47% |
| | 5/31/2013 11:38 | 21 | 86 | 44% |
| | 5/31/2013 11:44 | 27 | 75 | 38% |
| | 5/31/2013 11:49 | 32 | 66 | 34% |
| | 5/31/2013 11:55 | 38 | 59 | 30% |
| | 5/31/2013 12:00 | 43 | 51 | 26% |
| | 5/31/2013 12:04 | 47 | 49 | 25% |
| 35.7 | 5/31/2013 12:31 | 0 | 242 | 100% |
| | 5/31/2013 12:37 | 6 | 160 | 66% |
| | 5/31/2013 12:44 | 13 | 105 | 43% |
| | 5/31/2013 12:50 | 19 | 84 | 35% |
| | 5/31/2013 12:55 | 24 | 77 | 32% |
| | 5/31/2013 13:00 | 29 | 68 | 28% |
| | 5/31/2013 13:05 | 34 | 61 | 25% |
| | 5/31/2013 13:09 | 38 | 58 | 24% |
| | 5/31/2013 13:13 | 42 | 55 | 23% |
| | 5/31/2013 13:18 | 47 | 46 | 19% |
| 36.1 | 5/31/2013 13:40 | 0 | 108 | 100% |
| | 5/31/2013 13:45 | 5 | 75 | 69% |
| | 5/31/2013 13:49 | 9 | 52 | 48% |
| | 5/31/2013 13:54 | 14 | 43 | 40% |
| | 5/31/2013 13:59 | 19 | 37 | 34% |
| | 5/31/2013 14:03 | 23 | 32 | 30% |
| | 5/31/2013 14:07 | 27 | 28 | 26% |
| | 5/31/2013 14:11 | 31 | 26 | 24% |
| | 5/31/2013 14:15 | 35 | 22 | 20% |
| | 5/31/2013 14:20 | 40 | 20 | 19% |
| 39.7 | 6/24/2013 11:53 | 0 | 127 | 100% |
| | 6/24/2013 11:59 | 6 | 89 | 70% |
| | 6/24/2013 12:04 | 11 | 68 | 54% |
| | 6/24/2013 12:10 | 17 | 53 | 42% |
| | 6/24/2013 12:14 | 21 | 47 | 37% |
| | 6/24/2013 12:19 | 26 | 43 | 34% |
| | 6/24/2013 12:24 | 31 | 39 | 31% |
| | 6/24/2013 12:28 | 35 | 36 | 28% |
| | 6/24/2013 12:33 | 40 | 32 | 25% |
| | 6/24/2013 12:38 | 45 | 31 | 24% |
| | 6/24/2013 12:43 | 50 | 29 | 23% |
| 35.7 | 6/24/2013 13:09 | 0 | 248 | 100% |
| | 6/24/2013 13:16 | 7 | 198 | 80% |
| | 6/24/2013 13:22 | 13 | 136 | 55% |
| | 6/24/2013 13:28 | 19 | 86 | 35% |
| | 6/24/2013 13:36 | 27 | 62 | 25% |
| | 6/24/2013 13:41 | 32 | 54 | 22% |
| | 6/24/2013 13:46 | 37 | 46 | 19% |
| | 6/24/2013 13:51 | 42 | 45 | 18% |
| | 6/24/2013 13:55 | 46 | 40 | 16% |
| | 6/24/2013 14:04 | 55 | 45 | 18% |
| 36.1 | 6/24/2013 14:23 | 0 | 292 | 100% |
| | 6/24/2013 14:30 | 7 | 129 | 44% |
| | 6/24/2013 14:35 | 12 | 101 | 35% |
| | 6/24/2013 14:41 | 18 | 81 | 28% |
| | 6/24/2013 14:47 | 24 | 69 | 24% |
| | 6/24/2013 14:56 | 33 | 56 | 19% |
| | 6/24/2013 15:00 | 37 | 56 | 19% |
| | 6/24/2013 15:07 | 44 | 44 | 15% |
| | 6/24/2013 15:11 | 48 | 44 | 15% |
| | 6/24/2013 15:15 | 52 | 42 | 14% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 37.0 | 7/22/2013 11:22 | 0 | 130 | 100% |
| | 7/22/2013 11:27 | 5 | 91 | 70% |
| | 7/22/2013 11:32 | 10 | 68 | 52% |
| | 7/22/2013 11:38 | 16 | 58 | 45% |
| | 7/22/2013 11:43 | 21 | 53 | 41% |
| | 7/22/2013 11:47 | 25 | 45 | 35% |
| | 7/22/2013 11:53 | 31 | 41 | 32% |
| | 7/22/2013 11:58 | 36 | 38 | 29% |
| | 7/22/2013 12:03 | 41 | 34 | 26% |
| | 7/22/2013 12:07 | 45 | 33 | 25% |
| | 7/22/2013 12:11 | 49 | 30 | 23% |
| | 7/22/2013 12:16 | 54 | 29 | 22% |
| 36.8 | 7/22/2013 12:41 | 0 | 123 | 100% |
| | 7/22/2013 12:47 | 6 | 88 | 72% |
| | 7/22/2013 12:52 | 11 | 73 | 59% |
| | 7/22/2013 12:58 | 17 | 63 | 51% |
| | 7/22/2013 13:03 | 22 | 51 | 41% |
| | 7/22/2013 13:08 | 27 | 47 | 38% |
| | 7/22/2013 13:14 | 33 | 44 | 36% |
| | 7/22/2013 13:19 | 38 | 42 | 34% |
| | 7/22/2013 13:24 | 43 | 35 | 28% |
| | 7/22/2013 13:29 | 48 | 33 | 27% |
| | 7/22/2013 13:34 | 53 | 32 | 26% |
| | 7/22/2013 13:38 | 57 | 31 | 25% |
| 37.3 | 7/22/2013 13:55 | 0 | 137 | 100% |
| | 7/22/2013 14:00 | 5 | 95 | 69% |
| | 7/22/2013 14:06 | 11 | 73 | 53% |
| | 7/22/2013 14:11 | 16 | 62 | 45% |
| | 7/22/2013 14:17 | 22 | 50 | 36% |
| | 7/22/2013 14:23 | 28 | 45 | 33% |
| | 7/22/2013 14:29 | 34 | 39 | 28% |
| | 7/22/2013 14:34 | 39 | 36 | 26% |
| | 7/22/2013 14:39 | 44 | 34 | 25% |
| | 7/22/2013 14:44 | 49 | 31 | 23% |
| | 7/22/2013 14:49 | 54 | 26 | 19% |
| | 7/22/2013 14:53 | 58 | 28 | 20% |
| 40.7 | 8/12/2013 11:29 | 0 | 138 | 100% |
| | 8/12/2013 11:34 | 5 | 87 | 63% |
| | 8/12/2013 11:39 | 10 | 64 | 46% |
| | 8/12/2013 11:44 | 15 | 48 | 35% |
| | 8/12/2013 11:48 | 19 | 44 | 32% |
| | 8/12/2013 11:53 | 24 | 37 | 27% |
| | 8/12/2013 11:58 | 29 | 33 | 24% |
| | 8/12/2013 12:02 | 33 | 32 | 23% |
| | 8/12/2013 12:06 | 37 | 28 | 20% |
| | 8/12/2013 12:11 | 42 | 27 | 20% |
| | 8/12/2013 12:15 | 46 | 22 | 16% |
| | 8/12/2013 12:19 | 50 | 25 | 18% |
| 40.3 | 8/12/2013 12:36 | 0 | 131 | 100% |
| | 8/12/2013 12:41 | 5 | 83 | 63% |
| | 8/12/2013 12:46 | 10 | 68 | 52% |
| | 8/12/2013 12:51 | 15 | 53 | 40% |
| | 8/12/2013 12:55 | 19 | 44 | 34% |
| | 8/12/2013 13:00 | 24 | 40 | 31% |
| | 8/12/2013 13:05 | 29 | 35 | 27% |
| | 8/12/2013 13:09 | 33 | 32 | 24% |
| | 8/12/2013 13:13 | 37 | 30 | 23% |
| | 8/12/2013 13:17 | 41 | 27 | 21% |
| | 8/12/2013 13:22 | 46 | 25 | 19% |
| | 8/12/2013 13:27 | 51 | 23 | 18% |
| 40.8 | 8/12/2013 13:41 | 0 | 138 | 100% |
| | 8/12/2013 13:47 | 6 | 107 | 78% |
| | 8/12/2013 13:52 | 11 | 66 | 48% |
| | 8/12/2013 13:57 | 16 | 52 | 38% |
| | 8/12/2013 14:02 | 21 | 43 | 31% |
| | 8/12/2013 14:06 | 25 | 39 | 28% |
| | 8/12/2013 14:10 | 29 | 32 | 23% |
| | 8/12/2013 14:16 | 35 | 32 | 23% |
| | 8/12/2013 14:20 | 39 | 25 | 18% |
| | 8/12/2013 14:24 | 43 | 27 | 20% |
| | 8/12/2013 14:28 | 47 | 22 | 16% |
| | 8/12/2013 14:32 | 51 | 24 | 17% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 42.6 | 9/23/2013 11:06 | 0 | 87 | 100% |
| | 9/23/2013 11:11 | 5 | 55 | 63% |
| | 9/23/2013 11:16 | 10 | 38 | 44% |
| | 9/23/2013 11:22 | 16 | 29 | 33% |
| | 9/23/2013 11:28 | 22 | 24 | 28% |
| | 9/23/2013 11:32 | 26 | 23 | 26% |
| | 9/23/2013 11:37 | 31 | 18 | 21% |
| | 9/23/2013 11:42 | 36 | 17 | 20% |
| | 9/23/2013 11:46 | 40 | 16 | 18% |
| | 9/23/2013 11:50 | 44 | 16 | 18% |
| | 9/23/2013 11:55 | 49 | 16 | 18% |
| | 9/23/2013 11:59 | 53 | 16 | 18% |
| 41.7 | 9/23/2013 12:15 | 0 | 163 | 100% |
| | 9/23/2013 12:21 | 6 | 83 | 51% |
| | 9/23/2013 12:26 | 11 | 60 | 37% |
| | 9/23/2013 12:31 | 16 | 51 | 31% |
| | 9/23/2013 12:35 | 20 | 41 | 25% |
| | 9/23/2013 12:40 | 25 | 34 | 21% |
| | 9/23/2013 12:44 | 29 | 32 | 20% |
| | 9/23/2013 12:49 | 34 | 30 | 18% |
| | 9/23/2013 12:54 | 39 | 25 | 15% |
| | 9/23/2013 12:58 | 43 | 22 | 13% |
| | 9/23/2013 13:03 | 48 | 21 | 13% |
| | 9/23/2013 13:07 | 52 | 21 | 13% |
| 41.7 | 9/23/2013 13:31 | 0 | 123 | 100% |
| | 9/23/2013 13:37 | 6 | 78 | 63% |
| | 9/23/2013 13:42 | 11 | 57 | 46% |
| | 9/23/2013 13:46 | 15 | 47 | 38% |
| | 9/23/2013 13:51 | 20 | 37 | 30% |
| | 9/23/2013 13:56 | 25 | 33 | 27% |
| | 9/23/2013 14:01 | 30 | 27 | 22% |
| | 9/23/2013 14:05 | 34 | 26 | 21% |
| | 9/23/2013 14:11 | 40 | 22 | 18% |
| | 9/23/2013 14:15 | 44 | 21 | 17% |
| | 9/23/2013 14:19 | 48 | 20 | 16% |
| | 9/23/2013 14:23 | 52 | 20 | 16% |
| 37.2 | 10/15/2013 10:12 | 0 | 130 | 100% |
| | 10/15/2013 10:19 | 7 | 80 | 62% |
| | 10/15/2013 10:24 | 12 | 53 | 41% |
| | 10/15/2013 10:28 | 16 | 43 | 33% |
| | 10/15/2013 10:33 | 21 | 37 | 28% |
| | 10/15/2013 10:39 | 27 | 30 | 23% |
| | 10/15/2013 10:44 | 32 | 27 | 21% |
| | 10/15/2013 10:49 | 37 | 27 | 21% |
| | 10/15/2013 10:54 | 42 | 26 | 20% |
| | 10/15/2013 10:58 | 46 | 25 | 19% |
| | 10/15/2013 11:03 | 51 | 22 | 17% |
| | 10/15/2013 11:09 | 57 | 22 | 17% |
| 39.2 | 10/15/2013 11:50 | 0 | 141 | 100% |
| | 10/15/2013 11:55 | 5 | 85 | 60% |
| | 10/15/2013 12:01 | 11 | 57 | 40% |
| | 10/15/2013 12:06 | 16 | 43 | 30% |
| | 10/15/2013 12:11 | 21 | 36 | 26% |
| | 10/15/2013 12:15 | 25 | 30 | 21% |
| | 10/15/2013 12:20 | 30 | 27 | 19% |
| | 10/15/2013 12:24 | 34 | 24 | 17% |
| | 10/15/2013 12:30 | 40 | 23 | 16% |
| | 10/15/2013 12:35 | 45 | 22 | 16% |
| | 10/15/2013 12:39 | 49 | 21 | 15% |
| | 10/15/2013 12:44 | 54 | 21 | 15% |
| 40.6 | 10/15/2013 13:43 | 0 | 138 | 100% |
| | 10/15/2013 13:48 | 5 | 78 | 57% |
| | 10/15/2013 13:53 | 10 | 48 | 35% |
| | 10/15/2013 13:58 | 15 | 37 | 27% |
| | 10/15/2013 14:02 | 19 | 28 | 20% |
| | 10/15/2013 14:07 | 24 | 24 | 17% |
| | 10/15/2013 14:12 | 29 | 22 | 16% |
| | 10/15/2013 14:17 | 34 | 19 | 14% |
| | 10/15/2013 14:23 | 40 | 20 | 14% |
| | 10/15/2013 14:27 | 44 | 17 | 12% |
| | 10/15/2013 14:31 | 48 | 15 | 11% |
| | 10/15/2013 14:35 | 52 | 16 | 12% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 40.2 | 11/18/2013 11:10 | 0 | 153 | 100% |
| | 11/18/2013 11:16 | 6 | 114 | 75% |
| | 11/18/2013 11:22 | 12 | 93 | 61% |
| | 11/18/2013 11:28 | 18 | 75 | 49% |
| | 11/18/2013 11:33 | 23 | 63 | 41% |
| | 11/18/2013 11:38 | 28 | 50 | 33% |
| | 11/18/2013 11:43 | 33 | 42 | 27% |
| | 11/18/2013 11:48 | 38 | 41 | 27% |
| | 11/18/2013 11:53 | 43 | 35 | 23% |
| | 11/18/2013 11:57 | 47 | 32 | 21% |
| | 11/18/2013 12:02 | 52 | 30 | 20% |
| | 11/18/2013 12:07 | 57 | 29 | 19% |
| 40.7 | 11/18/2013 12:44 | 0 | 157 | 100% |
| | 11/18/2013 12:50 | 6 | 128 | 82% |
| | 11/18/2013 12:57 | 13 | 104 | 66% |
| | 11/18/2013 13:02 | 18 | 90 | 57% |
| | 11/18/2013 13:08 | 24 | 71 | 45% |
| | 11/18/2013 13:13 | 29 | 65 | 41% |
| | 11/18/2013 13:19 | 35 | 60 | 38% |
| | 11/18/2013 13:23 | 39 | 51 | 32% |
| | 11/18/2013 13:28 | 44 | 48 | 31% |
| | 11/18/2013 13:32 | 48 | 44 | 28% |
| | 11/18/2013 13:37 | 53 | 41 | 26% |
| | 11/18/2013 13:43 | 59 | 39 | 25% |
| 40.4 | 11/18/2013 14:28 | 0 | 116 | 100% |
| | 11/18/2013 14:33 | 5 | 112 | 97% |
| | 11/18/2013 14:39 | 11 | 88 | 76% |
| | 11/18/2013 14:44 | 16 | 74 | 64% |
| | 11/18/2013 14:49 | 21 | 63 | 54% |
| | 11/18/2013 14:54 | 26 | 53 | 46% |
| | 11/18/2013 15:00 | 32 | 48 | 41% |
| | 11/18/2013 15:05 | 37 | 44 | 38% |
| | 11/18/2013 15:11 | 43 | 33 | 28% |
| | 11/18/2013 15:15 | 47 | 32 | 28% |
| | 11/18/2013 15:20 | 52 | 32 | 28% |
| | 11/18/2013 15:26 | 58 | 30 | 26% |
| 32.9 | 12/17/2013 11:25 | 0 | 199 | 100% |
| | 12/17/2013 11:31 | 6 | 108 | 54% |
| | 12/17/2013 11:36 | 11 | 83 | 42% |
| | 12/17/2013 11:41 | 16 | 70 | 35% |
| | 12/17/2013 11:46 | 21 | 60 | 30% |
| | 12/17/2013 11:52 | 27 | 56 | 28% |
| | 12/17/2013 11:56 | 31 | 48 | 24% |
| | 12/17/2013 12:00 | 35 | 44 | 22% |
| | 12/17/2013 12:05 | 40 | 37 | 19% |
| | 12/17/2013 12:10 | 45 | 35 | 18% |
| | 12/17/2013 12:14 | 49 | 34 | 17% |
| | 12/17/2013 12:20 | 55 | 35 | 18% |
| 32.6 | 12/17/2013 13:09 | 0 | 158 | 100% |
| | 12/17/2013 13:14 | 5 | 101 | 64% |
| | 12/17/2013 13:19 | 10 | 73 | 46% |
| | 12/17/2013 13:25 | 16 | 65 | 41% |
| | 12/17/2013 13:30 | 21 | 53 | 34% |
| | 12/17/2013 13:35 | 26 | 45 | 28% |
| | 12/17/2013 13:40 | 31 | 40 | 25% |
| | 12/17/2013 13:45 | 36 | 37 | 23% |
| | 12/17/2013 13:49 | 40 | 31 | 20% |
| | 12/17/2013 13:54 | 45 | 30 | 19% |
| | 12/17/2013 13:59 | 50 | 28 | 18% |
| | 12/17/2013 14:04 | 55 | 26 | 16% |
| 32.3 | 12/17/2013 14:50 | 0 | 163 | 100% |
| | 12/17/2013 14:55 | 5 | 83 | 51% |
| | 12/17/2013 15:00 | 10 | 64 | 39% |
| | 12/17/2013 15:05 | 15 | 51 | 31% |
| | 12/17/2013 15:11 | 21 | 45 | 28% |
| | 12/17/2013 15:16 | 26 | 34 | 21% |
| | 12/17/2013 15:21 | 31 | 30 | 18% |
| | 12/17/2013 15:26 | 36 | 29 | 18% |
| | 12/17/2013 15:31 | 41 | 23 | 14% |
| | 12/17/2013 15:36 | 46 | 21 | 13% |
| | 12/17/2013 15:41 | 51 | 19 | 12% |
| | 12/17/2013 15:46 | 56 | 19 | 12% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 35.5 | 1/28/2014 11:29 | 0 | 320 | 100% |
| | 1/28/2014 11:36 | 7 | 109 | 34% |
| | 1/28/2014 11:41 | 12 | 99 | 31% |
| | 1/28/2014 11:46 | 17 | 83 | 26% |
| | 1/28/2014 11:51 | 22 | 74 | 23% |
| | 1/28/2014 11:56 | 27 | 67 | 21% |
| | 1/28/2014 12:01 | 32 | 57 | 18% |
| | 1/28/2014 12:06 | 37 | 50 | 16% |
| | 1/28/2014 12:12 | 43 | 46 | 14% |
| | 1/28/2014 12:16 | 47 | 39 | 12% |
| | 1/28/2014 12:21 | 52 | 39 | 12% |
| | 1/28/2014 12:25 | 56 | 33 | 10% |
| 36.3 | 1/28/2014 13:16 | 0 | 183 | 100% |
| | 1/28/2014 13:21 | 5 | 89 | 49% |
| | 1/28/2014 13:27 | 11 | 63 | 34% |
| | 1/28/2014 13:31 | 15 | 52 | 28% |
| | 1/28/2014 13:36 | 20 | 43 | 23% |
| | 1/28/2014 13:41 | 25 | 40 | 22% |
| | 1/28/2014 13:46 | 30 | 31 | 17% |
| | 1/28/2014 13:51 | 35 | 28 | 15% |
| | 1/28/2014 13:56 | 40 | 24 | 13% |
| | 1/28/2014 14:02 | 46 | 22 | 12% |
| | 1/28/2014 14:08 | 52 | 20 | 11% |
| | 1/28/2014 14:13 | 57 | 21 | 11% |
| 36.2 | 1/28/2014 14:47 | 0 | 245 | 100% |
| | 1/28/2014 14:53 | 6 | 100 | 41% |
| | 1/28/2014 14:58 | 11 | 81 | 33% |
| | 1/28/2014 15:03 | 16 | 65 | 27% |
| | 1/28/2014 15:08 | 21 | 57 | 23% |
| | 1/28/2014 15:13 | 26 | 47 | 19% |
| | 1/28/2014 15:18 | 31 | 40 | 16% |
| | 1/28/2014 15:23 | 36 | 36 | 15% |
| | 1/28/2014 15:28 | 41 | 32 | 13% |
| | 1/28/2014 15:33 | 46 | 31 | 13% |
| | 1/28/2014 15:38 | 51 | 28 | 11% |
| | 1/28/2014 15:42 | 55 | 27 | 11% |
| 35.8 | 2/27/2014 10:33 | 0 | 80 | 100% |
| | 2/27/2014 10:39 | 6 | 44 | 55% |
| | 2/27/2014 10:44 | 11 | 35 | 44% |
| | 2/27/2014 10:48 | 15 | 27 | 34% |
| | 2/27/2014 10:53 | 20 | 22 | 28% |
| | 2/27/2014 10:58 | 25 | 16 | 20% |
| | 2/27/2014 11:04 | 31 | 16 | 20% |
| | 2/27/2014 11:10 | 37 | 16 | 20% |
| | 2/27/2014 11:15 | 42 | 15 | 19% |
| | 2/27/2014 11:20 | 47 | 15 | 19% |
| | 2/27/2014 11:24 | 51 | 14 | 18% |
| | 2/27/2014 11:28 | 55 | 14 | 18% |
| 37.0 | 2/27/2014 11:55 | 0 | 106 | 100% |
| | 2/27/2014 12:00 | 5 | 71 | 67% |
| | 2/27/2014 12:05 | 10 | 52 | 49% |
| | 2/27/2014 12:10 | 15 | 44 | 42% |
| | 2/27/2014 12:15 | 20 | 38 | 36% |
| | 2/27/2014 12:20 | 25 | 32 | 30% |
| | 2/27/2014 12:25 | 30 | 30 | 28% |
| | 2/27/2014 12:30 | 35 | 25 | 24% |
| | 2/27/2014 12:35 | 40 | 22 | 21% |
| | 2/27/2014 12:40 | 45 | 18 | 17% |
| | 2/27/2014 12:44 | 49 | 17 | 16% |
| | 2/27/2014 12:48 | 53 | 17 | 16% |
| 36.9 | 2/27/2014 13:30 | 0 | 152 | 100% |
| | 2/27/2014 13:35 | 5 | 90 | 59% |
| | 2/27/2014 13:40 | 10 | 72 | 47% |
| | 2/27/2014 13:45 | 15 | 56 | 37% |
| | 2/27/2014 13:49 | 19 | 49 | 32% |
| | 2/27/2014 13:54 | 24 | 39 | 26% |
| | 2/27/2014 13:59 | 29 | 39 | 26% |
| | 2/27/2014 14:04 | 34 | 37 | 24% |
| | 2/27/2014 14:09 | 39 | 32 | 21% |
| | 2/27/2014 14:14 | 44 | 29 | 19% |
| | 2/27/2014 14:18 | 48 | 26 | 17% |
| | 2/27/2014 14:26 | 56 | 26 | 17% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 33.9 | 3/27/2014 10:59 | 0 | 265 | 100% |
| | 3/27/2014 11:04 | 5 | 125 | 47% |
| | 3/27/2014 11:10 | 11 | 107 | 40% |
| | 3/27/2014 11:15 | 16 | 91 | 34% |
| | 3/27/2014 11:22 | 23 | 81 | 31% |
| | 3/27/2014 11:27 | 28 | 61 | 23% |
| | 3/27/2014 11:31 | 32 | 63 | 24% |
| | 3/27/2014 11:37 | 38 | 54 | 20% |
| | 3/27/2014 11:42 | 43 | 48 | 18% |
| | 3/27/2014 11:47 | 48 | 44 | 17% |
| | 3/27/2014 11:51 | 52 | 41 | 15% |
| | 3/27/2014 11:55 | 56 | 42 | 16% |
| 33.7 | 3/27/2014 12:12 | 0 | 212 | 100% |
| | 3/27/2014 12:18 | 6 | 143 | 67% |
| | 3/27/2014 12:23 | 11 | 92 | 43% |
| | 3/27/2014 12:29 | 17 | 91 | 43% |
| | 3/27/2014 12:34 | 22 | 68 | 32% |
| | 3/27/2014 12:39 | 27 | 65 | 31% |
| | 3/27/2014 12:45 | 33 | 57 | 27% |
| | 3/27/2014 12:51 | 39 | 53 | 25% |
| | 3/27/2014 12:55 | 43 | 45 | 21% |
| | 3/27/2014 13:00 | 48 | 42 | 20% |
| | 3/27/2014 13:04 | 52 | 43 | 20% |
| | 3/27/2014 13:09 | 57 | 39 | 18% |
| 33.6 | 3/27/2014 13:33 | 0 | 176 | 100% |
| | 3/27/2014 13:39 | 6 | 100 | 57% |
| | 3/27/2014 13:45 | 12 | 80 | 45% |
| | 3/27/2014 13:49 | 16 | 65 | 37% |
| | 3/27/2014 13:54 | 21 | 59 | 34% |
| | 3/27/2014 14:01 | 28 | 31 | 18% |
| | 3/27/2014 14:05 | 32 | 43 | 24% |
| | 3/27/2014 14:11 | 38 | 35 | 20% |
| | 3/27/2014 14:15 | 42 | 35 | 20% |
| | 3/27/2014 14:19 | 46 | 28 | 16% |
| | 3/27/2014 14:24 | 51 | 27 | 15% |
| | 3/27/2014 14:28 | 55 | 25 | 14% |
| 34.5 | 4/24/2014 10:01 | 0 | 191 | 100% |
| | 4/24/2014 10:07 | 6 | 169 | 88% |
| | 4/24/2014 10:13 | 12 | 140 | 73% |
| | 4/24/2014 10:20 | 19 | 110 | 58% |
| | 4/24/2014 10:25 | 24 | 87 | 46% |
| | 4/24/2014 10:30 | 29 | 83 | 43% |
| | 4/24/2014 10:35 | 34 | 74 | 39% |
| | 4/24/2014 10:41 | 40 | 71 | 37% |
| | 4/24/2014 10:48 | 47 | 62 | 32% |
| | 4/24/2014 10:53 | 52 | 51 | 27% |
| | 4/24/2014 10:58 | 57 | 51 | 27% |
| | 4/24/2014 11:01 | 60 | 50 | 26% |
| 36.2 | 4/24/2014 15:05 | 0 | 244 | 100% |
| | 4/24/2014 15:11 | 6 | 139 | 57% |
| | 4/24/2014 15:16 | 11 | 115 | 47% |
| | 4/24/2014 15:22 | 17 | 104 | 43% |
| | 4/24/2014 15:28 | 23 | 81 | 33% |
| | 4/24/2014 15:36 | 31 | 71 | 29% |
| | 4/24/2014 15:42 | 37 | 64 | 26% |
| | 4/24/2014 15:47 | 42 | 56 | 23% |
| | 4/24/2014 15:52 | 47 | 52 | 21% |
| | 4/24/2014 15:56 | 51 | 47 | 19% |
| | 4/24/2014 16:01 | 56 | 43 | 18% |
| | 4/24/2014 16:05 | 60 | 43 | 18% |
| 36.3 | 4/24/2014 16:40 | 0 | 204 | 100% |
| | 4/24/2014 16:46 | 6 | 119 | 58% |
| | 4/24/2014 16:51 | 11 | 100 | 49% |
| | 4/24/2014 16:56 | 16 | 87 | 43% |
| | 4/24/2014 17:02 | 22 | 70 | 34% |
| | 4/24/2014 17:07 | 27 | 64 | 31% |
| | 4/24/2014 17:12 | 32 | 60 | 29% |
| | 4/24/2014 17:18 | 38 | 51 | 25% |
| | 4/24/2014 17:22 | 42 | 43 | 21% |
| | 4/24/2014 17:25 | 45 | 40 | 20% |
| | 4/24/2014 17:32 | 52 | 37 | 18% |
| | 4/24/2014 17:36 | 56 | 36 | 18% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 40.2 | 5/29/2014 10:42 | 0 | 168 | 100% |
| | 5/29/2014 10:47 | 5 | 145 | 100% |
| | 5/29/2014 10:53 | 11 | 95 | 66% |
| | 5/29/2014 10:59 | 17 | 77 | 53% |
| | 5/29/2014 11:04 | 22 | 64 | 44% |
| | 5/29/2014 11:09 | 27 | 63 | 43% |
| | 5/29/2014 11:13 | 31 | 57 | 39% |
| | 5/29/2014 11:18 | 36 | 52 | 36% |
| | 5/29/2014 11:22 | 40 | 42 | 29% |
| | 5/29/2014 11:26 | 44 | 36 | 25% |
| | 5/29/2014 11:31 | 49 | 42 | 29% |
| | 5/29/2014 11:35 | 53 | 35 | 24% |
| 40.8 | 5/29/2014 13:29 | 0 | 163 | 100% |
| | 5/29/2014 13:34 | 5 | 86 | 53% |
| | 5/29/2014 13:39 | 10 | 65 | 40% |
| | 5/29/2014 13:44 | 15 | 60 | 37% |
| | 5/29/2014 13:48 | 19 | 50 | 31% |
| | 5/29/2014 13:53 | 24 | 43 | 26% |
| | 5/29/2014 13:58 | 29 | 28 | 17% |
| | 5/29/2014 14:03 | 34 | 31 | 19% |
| | 5/29/2014 14:08 | 39 | 27 | 17% |
| | 5/29/2014 14:12 | 43 | 26 | 16% |
| | 5/29/2014 14:17 | 48 | 25 | 15% |
| | 5/29/2014 14:22 | 53 | 23 | 14% |
| 39.7 | 5/29/2014 14:54 | 0 | 188 | 100% |
| | 5/29/2014 14:59 | 5 | 72 | 38% |
| | 5/29/2014 15:04 | 10 | 51 | 27% |
| | 5/29/2014 15:09 | 15 | 46 | 24% |
| | 5/29/2014 15:14 | 20 | 35 | 19% |
| | 5/29/2014 15:19 | 25 | 33 | 18% |
| | 5/29/2014 15:24 | 30 | 31 | 16% |
| | 5/29/2014 15:29 | 35 | 28 | 15% |
| | 5/29/2014 15:33 | 39 | 25 | 13% |
| | 5/29/2014 15:38 | 44 | 22 | 12% |
| | 5/29/2014 15:43 | 49 | 20 | 11% |
| | 5/29/2014 15:48 | 54 | 20 | 11% |
| 39.1 | 6/17/2014 10:29 | 0 | 120 | 100% |
| | 6/17/2014 10:35 | 6 | 95 | 79% |
| | 6/17/2014 10:42 | 13 | 76 | 63% |
| | 6/17/2014 10:47 | 18 | 65 | 54% |
| | 6/17/2014 10:53 | 24 | 52 | 43% |
| | 6/17/2014 10:58 | 29 | 45 | 38% |
| | 6/17/2014 11:03 | 34 | 39 | 33% |
| | 6/17/2014 11:07 | 38 | 38 | 32% |
| | 6/17/2014 11:13 | 44 | 36 | 30% |
| | 6/17/2014 11:18 | 49 | 32 | 27% |
| | 6/17/2014 11:23 | 54 | 31 | 26% |
| | 6/17/2014 11:27 | 58 | 30 | 25% |
| 41.0 | 6/17/2014 11:44 | 0 | 346 | 100% |
| | 6/17/2014 11:51 | 7 | 111 | 32% |
| | 6/17/2014 11:57 | 13 | 114 | 33% |
| | 6/17/2014 12:03 | 19 | 105 | 30% |
| | 6/17/2014 12:08 | 24 | 89 | 26% |
| | 6/17/2014 12:16 | 32 | 77 | 22% |
| | 6/17/2014 12:22 | 38 | 68 | 20% |
| | 6/17/2014 12:27 | 43 | 71 | 21% |
| | 6/17/2014 12:32 | 48 | 53 | 15% |
| | 6/17/2014 12:36 | 52 | 47 | 14% |
| | 6/17/2014 12:40 | 56 | 42 | 12% |
| | 6/17/2014 12:44 | 60 | 43 | 12% |
| NR | 6/17/2014 13:40 | 0 | 249 | 100% |
| | 6/17/2014 13:46 | 6 | 141 | 57% |
| | 6/17/2014 13:51 | 11 | 111 | 45% |
| | 6/17/2014 13:57 | 17 | 97 | 39% |
| | 6/17/2014 14:01 | 21 | 86 | 35% |
| | 6/17/2014 14:07 | 27 | 69 | 28% |
| | 6/17/2014 14:11 | 31 | 62 | 25% |
| | 6/17/2014 14:17 | 37 | 59 | 24% |
| | 6/17/2014 14:22 | 42 | 50 | 20% |
| | 6/17/2014 14:27 | 47 | 47 | 19% |
| | 6/17/2014 14:33 | 53 | 39 | 16% |
| | 6/17/2014 14:37 | 57 | 37 | 15% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 42.2 | 7/8/2014 10:19 | 0 | 82 | 100% |
| | 7/8/2014 10:25 | 6 | 50 | 61% |
| | 7/8/2014 10:30 | 11 | 29 | 35% |
| | 7/8/2014 10:35 | 16 | 20 | 24% |
| | 7/8/2014 10:41 | 22 | 16 | 20% |
| | 7/8/2014 10:48 | 29 | 15 | 18% |
| | 7/8/2014 10:54 | 35 | 12 | 15% |
| | 7/8/2014 10:59 | 40 | 14 | 17% |
| | 7/8/2014 11:03 | 44 | 12 | 15% |
| | 7/8/2014 11:08 | 49 | 14 | 17% |
| | 7/8/2014 11:12 | 53 | 12 | 15% |
| | 7/8/2014 11:16 | 57 | 13 | 16% |
| 42.8 | 7/8/2014 11:28 | 0 | 133 | 100% |
| | 7/8/2014 11:33 | 5 | 63 | 47% |
| | 7/8/2014 11:37 | 9 | 42 | 32% |
| | 7/8/2014 11:43 | 15 | 32 | 24% |
| | 7/8/2014 11:47 | 19 | 24 | 18% |
| | 7/8/2014 11:52 | 24 | 19 | 14% |
| | 7/8/2014 11:58 | 30 | 15 | 11% |
| | 7/8/2014 12:04 | 36 | 15 | 11% |
| | 7/8/2014 12:09 | 41 | 13 | 10% |
| | 7/8/2014 12:16 | 48 | 15 | 11% |
| | 7/8/2014 12:20 | 52 | 13 | 10% |
| | 7/8/2014 12:25 | 57 | 14 | 11% |
| 42.9 | 7/8/2014 12:59 | 0 | 133 | 100% |
| | 7/8/2014 13:04 | 5 | 56 | 42% |
| | 7/8/2014 13:09 | 10 | 34 | 26% |
| | 7/8/2014 13:14 | 15 | 27 | 20% |
| | 7/8/2014 13:18 | 19 | 23 | 17% |
| | 7/8/2014 13:23 | 24 | 18 | 14% |
| | 7/8/2014 13:28 | 29 | 14 | 11% |
| | 7/8/2014 13:35 | 36 | 15 | 11% |
| | 7/8/2014 13:41 | 42 | 13 | 10% |
| | 7/8/2014 13:47 | 48 | 13 | 10% |
| | 7/8/2014 13:52 | 53 | 10 | 8% |
| | 7/8/2014 13:56 | 57 | 13 | 10% |
| 39.8 | 8/19/2014 9:10 | 0 | 117 | 100% |
| | 8/19/2014 9:15 | 5 | 84 | 72% |
| | 8/19/2014 9:20 | 10 | 62 | 53% |
| | 8/19/2014 9:26 | 16 | 50 | 43% |
| | 8/19/2014 9:31 | 21 | 42 | 36% |
| | 8/19/2014 9:36 | 26 | 36 | 31% |
| | 8/19/2014 9:40 | 30 | 27 | 23% |
| | 8/19/2014 9:45 | 35 | 27 | 23% |
| | 8/19/2014 9:50 | 40 | 20 | 17% |
| | 8/19/2014 9:56 | 46 | 24 | 21% |
| | 8/19/2014 10:02 | 52 | 22 | 19% |
| | 8/19/2014 10:07 | 57 | 21 | 18% |
| 40.9 | 8/19/2014 10:40 | 0 | 139 | 100% |
| | 8/19/2014 10:45 | 5 | 103 | 74% |
| | 8/19/2014 10:50 | 10 | 81 | 58% |
| | 8/19/2014 10:56 | 16 | 59 | 42% |
| | 8/19/2014 11:01 | 21 | 52 | 37% |
| | 8/19/2014 11:06 | 26 | 40 | 29% |
| | 8/19/2014 11:11 | 31 | 37 | 27% |
| | 8/19/2014 11:16 | 36 | 31 | 22% |
| | 8/19/2014 11:25 | 45 | 32 | 23% |
| | 8/19/2014 11:29 | 49 | 24 | 17% |
| | 8/19/2014 11:34 | 54 | 23 | 17% |
| | 8/19/2014 11:38 | 58 | 25 | 18% |
| 41.3 | 8/19/2014 14:38 | 0 | 127 | 100% |
| | 8/19/2014 14:43 | 5 | 73 | 57% |
| | 8/19/2014 14:49 | 11 | 49 | 39% |
| | 8/19/2014 14:54 | 16 | 39 | 31% |
| | 8/19/2014 14:59 | 21 | 34 | 27% |
| | 8/19/2014 15:04 | 26 | 30 | 24% |
| | 8/19/2014 15:09 | 31 | 26 | 20% |
| | 8/19/2014 15:13 | 35 | 23 | 18% |
| | 8/19/2014 15:18 | 40 | 20 | 16% |
| | 8/19/2014 15:24 | 46 | 20 | 16% |
| | 8/19/2014 15:29 | 51 | 16 | 13% |
| | 8/19/2014 15:34 | 56 | 19 | 15% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 43.0 | 9/18/2014 10:32 | 0 | 102 | 100% |
| | 9/18/2014 10:37 | 5 | 74 | 73% |
| | 9/18/2014 10:42 | 10 | 54 | 53% |
| | 9/18/2014 10:48 | 16 | 47 | 46% |
| | 9/18/2014 10:53 | 21 | 36 | 35% |
| | 9/18/2014 10:59 | 27 | 31 | 30% |
| | 9/18/2014 11:05 | 33 | 26 | 25% |
| | 9/18/2014 11:10 | 38 | 36 | 35% |
| | 9/18/2014 11:19 | 47 | 18 | 18% |
| | 9/18/2014 11:23 | 51 | 17 | 17% |
| | 9/18/2014 11:28 | 56 | 14 | 14% |
| | 9/18/2014 11:32 | 60 | 15 | 15% |
| 43.5 | 9/18/2014 13:10 | 0 | 122 | 100% |
| | 9/18/2014 13:15 | 5 | 71 | 58% |
| | 9/18/2014 13:20 | 10 | 47 | 39% |
| | 9/18/2014 13:25 | 15 | 37 | 30% |
| | 9/18/2014 13:30 | 20 | 32 | 26% |
| | 9/18/2014 13:36 | 26 | 26 | 21% |
| | 9/18/2014 13:45 | 35 | 25 | 20% |
| | 9/18/2014 13:50 | 40 | 17 | 14% |
| | 9/18/2014 13:55 | 45 | 16 | 13% |
| | 9/18/2014 14:00 | 50 | 14 | 11% |
| | 9/18/2014 14:05 | 55 | 16 | 13% |
| | 9/18/2014 14:10 | 60 | 14 | 11% |
| 43.7 | 9/18/2014 15:02 | 0 | 136 | 100% |
| | 9/18/2014 15:08 | 6 | 80 | 59% |
| | 9/18/2014 15:13 | 11 | 56 | 41% |
| | 9/18/2014 15:17 | 15 | 45 | 33% |
| | 9/18/2014 15:22 | 20 | 34 | 25% |
| | 9/18/2014 15:27 | 25 | 32 | 24% |
| | 9/18/2014 15:32 | 30 | 27 | 20% |
| | 9/18/2014 15:37 | 35 | 24 | 18% |
| | 9/18/2014 15:42 | 40 | 21 | 15% |
| | 9/18/2014 15:46 | 44 | 21 | 15% |
| | 9/18/2014 15:50 | 48 | 19 | 14% |
| | 9/18/2014 15:55 | 53 | 20 | 15% |
| 41.1 | 10/9/2014 9:18 | 0 | 133 | 100% |
| | 10/9/2014 9:24 | 6 | 86 | 65% |
| | 10/9/2014 9:30 | 12 | 36 | 27% |
| | 10/9/2014 9:36 | 18 | 27 | 20% |
| | 10/9/2014 9:41 | 23 | 19 | 14% |
| | 10/9/2014 9:47 | 29 | 17 | 13% |
| | 10/9/2014 9:52 | 34 | 14 | 11% |
| | 10/9/2014 9:57 | 39 | 15 | 11% |
| | 10/9/2014 10:02 | 44 | 15 | 11% |
| | 10/9/2014 10:06 | 48 | 14 | 11% |
| | 10/9/2014 10:10 | 52 | 13 | 10% |
| | 10/9/2014 10:15 | 57 | 14 | 11% |
| 41.1 | 10/9/2014 11:02 | 0 | 156 | 100% |
| | 10/9/2014 11:07 | 5 | 71 | 46% |
| | 10/9/2014 11:12 | 10 | 46 | 29% |
| | 10/9/2014 11:18 | 16 | 32 | 21% |
| | 10/9/2014 11:22 | 20 | 26 | 17% |
| | 10/9/2014 11:27 | 25 | 20 | 13% |
| | 10/9/2014 11:33 | 31 | 19 | 12% |
| | 10/9/2014 11:38 | 36 | 16 | 10% |
| | 10/9/2014 11:42 | 40 | 17 | 11% |
| | 10/9/2014 11:46 | 44 | 14 | 9% |
| | 10/9/2014 11:51 | 49 | 16 | 10% |
| | 10/9/2014 11:56 | 54 | 14 | 9% |
| 43.7 | 10/9/2014 13:07 | 0 | 136 | 100% |
| | 10/9/2014 13:13 | 6 | 72 | 53% |
| | 10/9/2014 13:17 | 10 | 49 | 36% |
| | 10/9/2014 13:23 | 16 | 32 | 24% |
| | 10/9/2014 13:28 | 21 | 26 | 19% |
| | 10/9/2014 13:33 | 26 | 20 | 15% |
| | 10/9/2014 13:38 | 31 | 17 | 13% |
| | 10/9/2014 13:45 | 38 | 15 | 11% |
| | 10/9/2014 13:49 | 42 | 16 | 12% |
| | 10/9/2014 13:53 | 46 | 13 | 10% |
| | 10/9/2014 13:58 | 51 | 15 | 11% |
| | 10/9/2014 14:02 | 55 | 13 | 10% |

Appendix E
Phase 2 Bench-Scale Decay Data

| Sample Temperature (°C) | Date and Time (M/D/Y 24:00) | Elapsed Time (minutes) | TRO Concentration (µg/L) | TRO Concentration (% Initial) |
|---|---|---|---|---|
| 34.6 | 11/19/2014 12:25 | 0 | 180 | 100% |
| | 11/19/2014 12:34 | 9 | 68 | 38% |
| | 11/19/2014 12:40 | 15 | 54 | 30% |
| | 11/19/2014 12:46 | 21 | 44 | 24% |
| | 11/19/2014 12:52 | 27 | 33 | 18% |
| | 11/19/2014 12:57 | 32 | 29 | 16% |
| | 11/19/2014 13:02 | 37 | 24 | 13% |
| | 11/19/2014 13:06 | 41 | 24 | 13% |
| | 11/19/2014 13:10 | 45 | 22 | 12% |
| | 11/19/2014 13:15 | 50 | 21 | 12% |
| | 11/19/2014 13:19 | 54 | 19 | 11% |
| | 11/19/2014 13:23 | 58 | 17 | 9% |
| 35.5 | 11/19/2014 14:25 | 0 | 156 | 100% |
| | 11/19/2014 14:31 | 6 | 62 | 40% |
| | 11/19/2014 14:35 | 10 | 37 | 24% |
| | 11/19/2014 14:39 | 14 | 32 | 21% |
| | 11/19/2014 14:44 | 19 | 20 | 13% |
| | 11/19/2014 14:50 | 25 | 20 | 13% |
| | 11/19/2014 14:59 | 34 | 19 | 12% |
| | 11/19/2014 15:03 | 38 | 16 | 10% |
| | 11/19/2014 15:07 | 42 | 17 | 11% |
| | 11/19/2014 15:11 | 46 | 14 | 9% |
| | 11/19/2014 15:15 | 50 | 16 | 10% |
| | 11/19/2014 15:19 | 54 | 15 | 10% |
| 35.3 | 11/19/2014 16:01 | 0 | 138 | 100% |
| | 11/19/2014 16:05 | 4 | 70 | 51% |
| | 11/19/2014 16:14 | 13 | 43 | 31% |
| | 11/19/2014 16:18 | 17 | 31 | 22% |
| | 11/19/2014 16:23 | 22 | 24 | 17% |
| | 11/19/2014 16:27 | 26 | 19 | 14% |
| | 11/19/2014 16:31 | 30 | 17 | 12% |
| | 11/19/2014 16:36 | 35 | 19 | 14% |
| | 11/19/2014 16:40 | 39 | 16 | 12% |
| | 11/19/2014 16:44 | 43 | 18 | 13% |
| | 11/19/2014 16:48 | 47 | 15 | 11% |
| | 11/19/2014 16:52 | 51 | 19 | 14% |
| 35.5 | 12/10/2014 9:11 | 0 | 162 | 100% |
| | 12/10/2014 9:17 | 6 | 90 | 56% |
| | 12/10/2014 9:23 | 12 | 65 | 40% |
| | 12/10/2014 9:30 | 19 | 51 | 31% |
| | 12/10/2014 9:34 | 23 | 38 | 23% |
| | 12/10/2014 9:38 | 27 | 30 | 19% |
| | 12/10/2014 9:43 | 32 | 30 | 19% |
| | 12/10/2014 9:48 | 37 | 25 | 15% |
| | 12/10/2014 9:53 | 42 | 28 | 17% |
| | 12/10/2014 9:58 | 47 | 22 | 14% |
| | 12/10/2014 10:02 | 51 | 24 | 15% |
| | 12/10/2014 10:06 | 55 | 22 | 14% |
| 35.8 | 12/10/2014 11:14 | 0 | 138 | 100% |
| | 12/10/2014 11:20 | 6 | 75 | 54% |
| | 12/10/2014 11:27 | 13 | 55 | 40% |
| | 12/10/2014 11:31 | 17 | 44 | 32% |
| | 12/10/2014 11:36 | 22 | 36 | 26% |
| | 12/10/2014 11:41 | 27 | 30 | 22% |
| | 12/10/2014 11:46 | 32 | 30 | 22% |
| | 12/10/2014 11:51 | 37 | 24 | 17% |
| | 12/10/2014 11:56 | 42 | 24 | 17% |
| | 12/10/2014 12:00 | 46 | 21 | 15% |
| | 12/10/2014 12:04 | 50 | 21 | 15% |
| | 12/10/2014 12:08 | 54 | 19 | 14% |
| 36.0 | 12/10/2014 13:06 | 0 | 136 | 100% |
| | 12/10/2014 13:14 | 8 | 72 | 53% |
| | 12/10/2014 13:21 | 15 | 52 | 38% |
| | 12/10/2014 13:26 | 20 | 31 | 23% |
| | 12/10/2014 13:32 | 26 | 30 | 22% |
| | 12/10/2014 13:36 | 30 | 22 | 16% |
| | 12/10/2014 13:40 | 34 | 24 | 18% |
| | 12/10/2014 13:45 | 39 | 21 | 15% |
| | 12/10/2014 13:49 | 43 | 22 | 16% |
| | 12/10/2014 13:54 | 48 | 19 | 14% |
| | 12/10/2014 13:58 | 52 | 21 | 15% |
| | 12/10/2014 14:02 | 56 | 20 | 15% |

**Notes:**
1. °C indicates degrees Celsius.
2. M/D/Y indicates Month/Day/Year.
3. TRO indicates Total Residual Oxidant.
4. µg/L indicates micrograms per liter.
4. NR indicates not recorded.

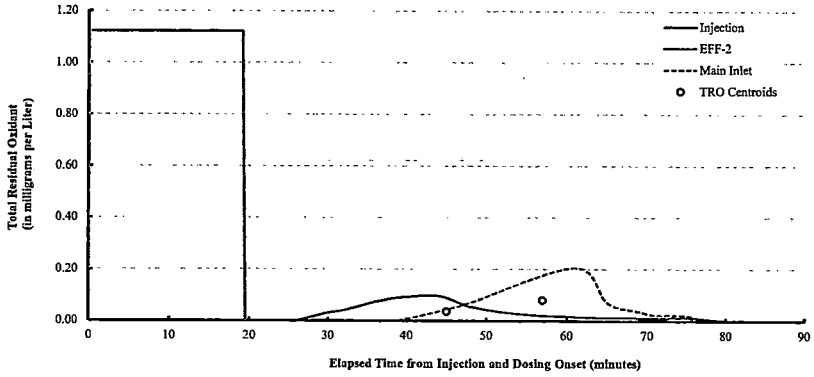
# APPENDIX F

Appendix F
Field Verification Data

| **Sample Location** (Main Inlet or EFF-2) | **Sample Collection Time** (M/D/Y 24:00) | **Analytical Time** (M/D/Y 24:00) | **Titrator TRO Measurement** (mg/L) |
|---|---|---|---|
| EFF-2 | 12/9/14 14:56 | 12/9/14 14:58 | < 0.004 |
| EFF-2 | 12/9/14 15:51 | 12/9/14 15:54 | < 0.004 |
| EFF-2 | 12/9/14 15:54 | 12/9/14 15:57 | < 0.004 |
| EFF-2 | 12/9/14 15:57 | 12/9/14 16:01 | < 0.004 |
| EFF-2 | 12/9/14 16:02 | 12/9/14 16:06 | < 0.004 |
| EFF-2 | 12/9/14 16:06 | 12/9/14 16:10 | 0.031 |
| EFF-2 | 12/9/14 16:08 | 12/9/14 16:14 | 0.040 |
| EFF-2 | 12/9/14 16:12 | 12/9/14 16:18 | 0.073 |
| EFF-2 | 12/9/14 16:15 | 12/9/14 16:22 | 0.090 |
| EFF-2 | 12/9/14 16:20 | 12/9/14 16:27 | 0.097 |
| EFF-2 | 12/9/14 16:24 | 12/9/14 16:31 | 0.055 |
| EFF-2 | 12/9/14 16:29 | 12/9/14 16:34 | 0.031 |
| EFF-2 | 12/9/14 16:33 | 12/9/14 16:38 | 0.021 |
| EFF-2 | 12/9/14 16:36 | 12/9/14 16:42 | 0.018 |
| EFF-2 | 12/9/14 16:40 | 12/9/14 16:45 | 0.013 |
| EFF-2 | 12/9/14 16:44 | 12/9/14 16:49 | 0.013 |
| EFF-2 | 12/9/14 16:47 | 12/9/14 16:54 | 0.011 |
| EFF-2 | 12/9/14 16:51 | 12/9/14 16:59 | 0.013 |
| EFF-2 | 12/9/14 16:56 | 12/9/14 17:02 | < 0.004 |
| EFF-2 | 12/9/14 17:01 | 12/9/14 17:05 | < 0.004 |
| EFF-2 | 12/9/14 17:04 | 12/9/14 17:08 | < 0.004 |
| EFF-2 | 12/9/14 17:07 | 12/9/14 17:12 | < 0.004 |
| Main Inlet | 12/9/14 14:59 | 12/9/14 15:02 | < 0.004 |
| Main Inlet | 12/9/14 15:56 | 12/9/14 15:59 | < 0.004 |
| Main Inlet | 12/9/14 15:59 | 12/9/14 16:02 | < 0.004 |
| Main Inlet | 12/9/14 16:08 | 12/9/14 16:09 | < 0.004 |
| Main Inlet | 12/9/14 16:09 | 12/9/14 16:12 | < 0.004 |
| Main Inlet | 12/9/14 16:13 | 12/9/14 16:15 | < 0.004 |
| Main Inlet | 12/9/14 16:15 | 12/9/14 16:19 | 0.0294 |
| Main Inlet | 12/9/14 16:18 | 12/9/14 16:24 | 0.0704 |
| Main Inlet | 12/9/14 16:26 | 12/9/14 16:37 | 0.206 |
| Main Inlet | 12/9/14 16:34 | 12/9/14 16:41 | 0.0701 |
| Main Inlet | 12/9/14 16:39 | 12/9/14 16:45 | 0.0364 |
| Main Inlet | 12/9/14 16:43 | 12/9/14 16:47 | 0.023 |
| Main Inlet | 12/9/14 16:46 | 12/9/14 16:51 | 0.0204 |
| Main Inlet | 12/9/14 16:49 | 12/9/14 16:53 | < 0.004 |
| Main Inlet | 12/9/14 16:52 | 12/9/14 16:56 | < 0.004 |
| Main Inlet | 12/9/14 16:55 | 12/9/14 16:58 | < 0.004 |
| Main Inlet | 12/9/14 16:58 | 12/9/14 17:01 | < 0.004 |
| Main Inlet | 12/9/14 17:01 | 12/9/14 17:03 | < 0.004 |
| Main Inlet | 12/9/14 17:03 | 12/9/14 17:06 | < 0.004 |

# APPENDIX G

Appendix G
Total Residual Oxidant Recovery Curves from Field-Scale Evaluation



# APPENDIX H

Appendix H

Discharge Monitoring Report Data for Total Residual Oxidants Measured at EFF-2

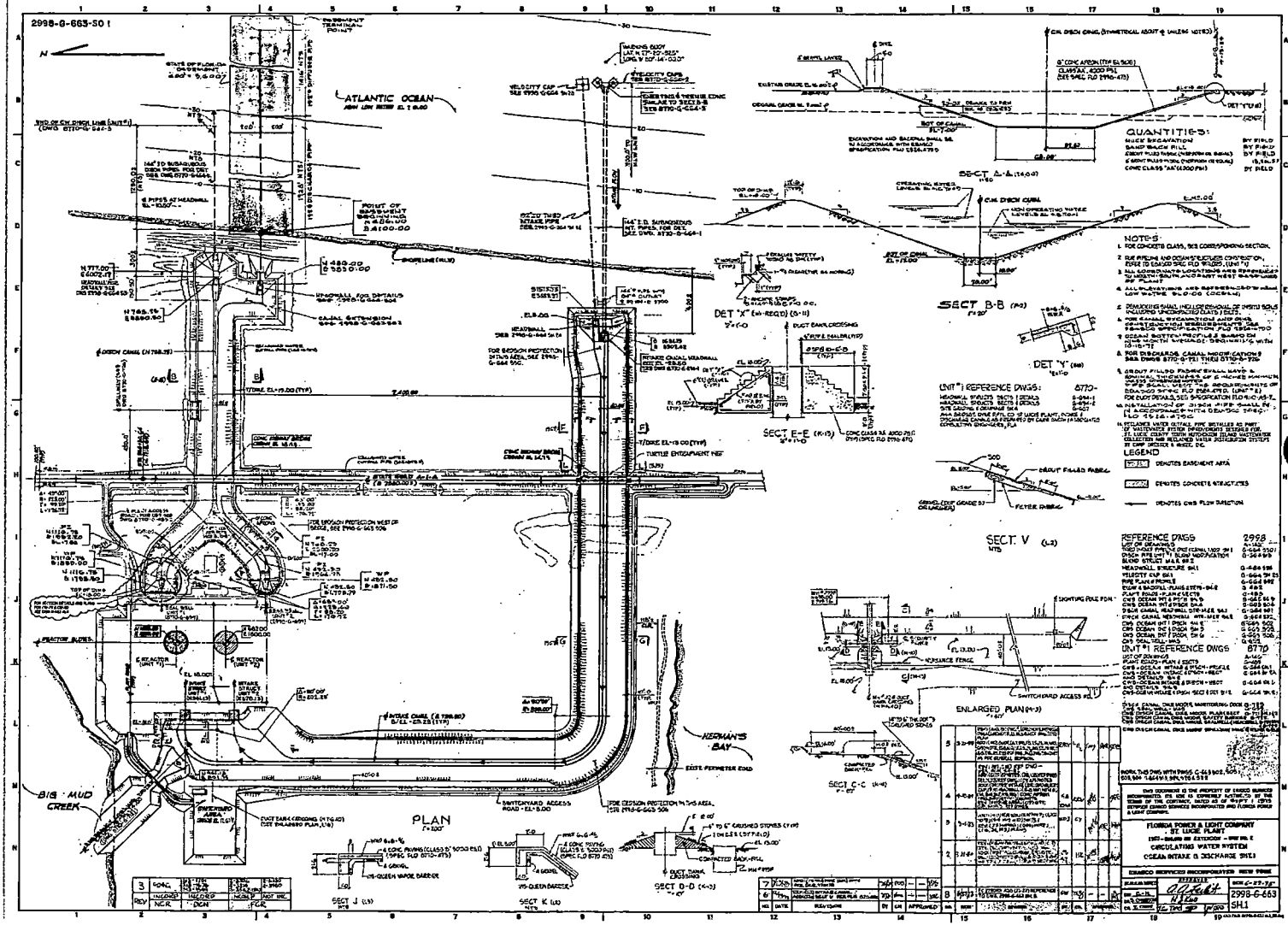
| **Month** (MM) | **Year** (YYYY) | **DMR TRO Daily Max Value** (as Reported, µg/L) | **DMR TRO Daily Max Value** (for Computation, µg/L) |
|---|---|---|---|
| 3 | 2011 | < 10 | 4.999 |
| 4 | 2011 | < 10 | 4.999 |
| 5 | 2011 | < 10 | 4.999 |
| 6 | 2011 | 10 | 10 |
| 7 | 2011 | < 10 | 4.999 |
| 8 | 2011 | < 10 | 4.999 |
| 9 | 2011 | < 10 | 4.999 |
| 10 | 2011 | < 10 | 4.999 |
| 11 | 2011 | < 5 | 2.499 |
| 12 | 2011 | 40 | 40 |
| 1 | 2012 | 10 | 10 |
| 2 | 2012 | 20 | 20 |
| 3 | 2012 | 5 | 5 |
| 4 | 2012 | 10 | 10 |
| 5 | 2012 | 40 | 40 |
| 6 | 2012 | 7 | 7 |
| 7 | 2012 | 10 | 10 |
| 8 | 2012 | < 5 | 2.4999 |
| 9 | 2012 | < 5 | 2.4999 |
| 10 | 2012 | 15 | 15 |
| 11 | 2012 | 20 | 20 |
| 12 | 2012 | < 5 | 2.4999 |
| 1 | 2013 | 10 | 10 |
| 2 | 2013 | 10 | 10 |
| 3 | 2013 | 10 | 10 |
| 4 | 2013 | 50 | 50 |
| 5 | 2013 | 15 | 15 |
| 6 | 2013 | 30 | 30 |
| 7 | 2013 | 30 | 30 |
| 8 | 2013 | 30 | 30 |
| 9 | 2013 | 30 | 30 |
| 10 | 2013 | < 5 | 2.4999 |
| 11 | 2013 | 15 | 15 |
| 12 | 2013 | < 5 | 2.4999 |
| 1 | 2014 | 20 | 20 |
| 2 | 2014 | 18 | 18 |

**ATTACHMENT 2**

DISCHARGE MONITORING REPORT DATA FOR TOTAL RESIDUAL OXIDANTS MEASURED AT EFF-2

| Month (MM) | Year (YYYY) | DMR TRO DAILY MAX VALUE (as Reported, mg/L) | DMR TRO DAILY MAX VALUE (for Computation, ug/L) |
|---|---|---|---|
| 3 | 2011 | < 0.010 | 4.999 |
| 4 | 2011 | < 0.010 | 4.999 |
| 5 | 2011 | < 0.010 | 4.999 |
| 6 | 2011 | 0.01 | 10 |
| 7 | 2011 | <0.010 | 4.999 |
| 8 | 2011 | <0.010 | 4.999 |
| 9 | 2011 | <0.010 | 4.999 |
| 10 | 2011 | <0.010 | 4.999 |
| 11 | 2011 | <0.005 | 2.4995 |
| 12 | 2011 | 0.04 | 40 |
| 1 | 2012 | 0.01 | 10 |
| 2 | 2012 | 0.02 | 20 |
| 3 | 2012 | <0.005 | 2.4995 |
| 4 | 2012 | 0.01 | 10 |
| 5 | 2012 | 0.04 | 40 |
| 6 | 2012 | 0.007 | 7 |
| 7 | 2012 | 0.01 | 10 |
| 8 | 2012 | <0.005 | 2.4995 |
| 9 | 2012 | <0.005 | 2.4995 |
| 10 | 2012 | 0.015 | 15 |
| 11 | 2012 | 0.02 | 20 |
| 12 | 2012 | <0.005 | 2.4995 |
| 1 | 2013 | 0.01 | 10 |
| 2 | 2013 | 0.01 | 10 |
| 3 | 2013 | 0.01 | 10 |
| 4 | 2013 | 0.005 | 5 |
| 5 | 2013 | 0.015 | 15 |
| 6 | 2013 | 0.03 | 30 |
| 7 | 2013 | 0.03 | 30 |
| 8 | 2013 | 0.03 | 30 |
| 9 | 2013 | 0.03 | 30 |
| 10 | 2013 | <0.005 | 2.4995 |
| 11 | 2013 | 0.015 | 15 |
| 12 | 2013 | <0.005 | 2.4995 |
| 1 | 2014 | 0.02 | 20 |
| 2 | 2014 | 0.018 | 18 |
| 3 | 2014 | 0.07 | 70 |
| 4 | 2014 | 0.008 | 8 |
| 5 | 2014 | 0.019 | 19 |
| 6 | 2014 | <0.005 | 2.4995 |
| 7 | 2014 | 0.08 | 80 |
| 8 | 2014 | 0.08 | 80 |
| 9 | 2014 | 0.048 | 48 |
| 10 | 2014 | 0.05 | 50 |
| 11 | 2014 | 0.015 | 15 |
| 12 | 2014 | 0.095 | 95 |
| 1 | 2015 | 0.02 | 20 |
| 2 | 2015 | 0.02 | 20 |
| 3 | 2015 | 0.02 | 20 |
| 4 | 2015 | 0.085 | 85 |
| 5 | 2015 | 0.016 | 16 |
| 6 | 2015 | 0.04 | 40 |
| 7 | 2015 | 0.03 | 30 |
| 8 | 2015 | 0.02 | 20 |
| 9 | 2015 | 0.0041 | 4.1 |
| 10 | 2015 | 0.085 | 85 |
| 11 | 2015 | 0.07 | 70 |
| 12 | 2015 | 0.093 | 93 |

**ATTACHMENT 3**


2998-G-663-SO 1
ATLANTIC OCEAN
BIG MUD CREEK
HERMAN'S BAY
PLAN
SECT A-A
SECT B-B
SECT C-C
SECT D-D
SECT E-E
SECT V
ENLARGED PLAN
QUANTITIES
NOTES
LEGEND
REFERENCE DWGS
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT
CIRCULATING WATER SYSTEM
OCEAN INTAKE & DISCHARGE STR.
2998-G-663
SH1

2998-G-663-SO 1

N

ATLANTIC OCEAN
MEAN LOW WATER EL 2 0.00

STATE OF FLORIDA EASEMENT 200'± & 2,000'

END OF CW DISCH LINE (UNIT #1) (DWG 8770-G-664-3)

144" ID SUBAQUEOUS DISCH PIPES FOR DET SEE DWG 8770-G-664-1

192" DISCHARGE PIPE

192" DIFFUSER PIPE

POINT OF EASEMENT BEGINNING N 486.00 E 4100.00

SHORELINE (MLW)

N 777.00 E 4002.17 HEADWALL FOR DETAILS SEE DWG 2998-G-664 SH 3

N 768.13 E 3850.50

HEADWALL FOR DETAILS SEE 2998-G-664-504

CANAL EXTENSION SEE 2998-G-663-502

℄ DISCH CANAL (N 768.13)

RECLAIMED WATER OUTFALL PIPE (SEE NOTE 11)

SPILLWAY (SEE DWG 8770-G-720)

T/DIKE EL+19.00 (TYP)

2,400.00

CONC HIGHWAY BRIDGE CROWN EL 18.15±

STATE ROAD A-1-A (@ 2550.00±)

℄ PLANT ACCESS ROAD (FOR DET SEE DWG 8770-G-485-2)

FOR EROSION PROTECTION WEST OF BRIDGE, SEE 2998-G-663 SO6

PI N 788.29 E 2302.70 EL-17.00

PI N 452.92 E 1904.96

WP N 492.50 E 1871.50

Δ 45°00' R 225.00' T 99.20' L 176.72'

TOP OF DIKE EL+18.00

FOR SECTION DETAILS AND PLANS FOR CW-39 & CW-30 SEE 2998-G-663 A4

SEAL WELL UNIT #1 (8770-G-659)

SEAL WELL UNIT #2 (2998-G-659)

REACTOR BLDGS.

℄ REACTOR (UNIT #1)

℄ REACTOR (UNIT #2)

EL 18.00±

INTAKE STRUCT. UNIT #1 (N944.13)

INTAKE STRUCT. UNIT #2 (N620.13)

Δ=90°00' R=202.25'

Δ=90°00' R=300.00'

℄ INTAKE CANAL (℄ 759.50) B/EL -29.25 (TYP)

HERMAN'S BAY

EXIST. PERIMETER ROAD

BIG MUD CREEK

SWITCHYARD AREA GRADE EL 17.67±

DUCT BANK CROSSING (N 716.40) (SEE ENLARGED PLAN, L16)

SWITCHYARD ACCESS ROAD - EL+5.00

FOR EROSION PROTECTION IN THIS AREA, SEE 2998-G-663 SO6

PLAN
1" = 200'

WARNING BUOY LAT. N 27°-20'-52.5" LONG. W 80°-14'-00.0"

VELOCITY CAP SEE 2998-G-664 SH 28

VELOCITY CAPS SEE 8770-G-664-2

SHEETING & TREMIE CONC SIMILAR TO SECT B-B SEE 8770-G-664-3

192" ID THIRD INTAKE PIPE SEE 2998-G-664 SH 32

144" I.D. SUBAQUEOUS INT. PIPES, FOR DET. SEE DWG. 8770-G-664-1

1200.00' TO MEAN LOW WATER

MEAN FLOW

S 1573.75 E 3583.37

144" ℄ PIPE WITH 84°0 OUTLET ℄ BY WM-E 3700

EL 5.00

HEADWALL SEE 2998-G-664 SH 24

FOR EROSION PROTECTION IN THIS AREA, SEE 2998-G-664 SO6.

B 1681.75 E 8502.42

INTAKE CANAL HEADWALL BOT EL +5.50 SEE DWG 8770-G-694-1

T/DIKE EL+13.00 (TYP)

TURTLE ENTRAPMENT NET

CONC HIGHWAY BRIDGE CROWN EL 14.75

RECLAIMED WATER OUTFALL PIPE (SEE NOTE 11)

(SC) E

(SC) F

(SC) G

115'± CLR.

10'-0 (TYP.) UNO

DET "X" (16-REQ'D) (G-11)
1/2" = 1'-0

1" NOSING (TYP)

FERALUN SAFETY TREAD 3/8 THK (TYP)

1-#6 REBAR (TYP. EA NOSING)

2-ANCHOR STRAPS 2 @ L6.0-8 L6 @ 1'-0 O.C.

DUCT BANK CROSSING

6" PJF & SEALER (TYP)

8 SP @ 10-6-8 (TYP)

EL 18.00'

DET "X" (X-102)

6" (±) GRAVEL (TYP.)

#4 @ 12 E.W. (TYP.) (DT FIELD)

8 CL (TYP)

EL 13.00' (TYP)

7-SP @ 7-6"-1 (TYP)

5'-0 (TYP)

SECT E-E (K-13)
1/4" = 1'-0

CONC CLASS 'AA' 4000 PSI (TYP) (SPEC FLO 2998-473)

SECT A-A (14, G16)
1" = 20'

℄ DIKE

6" GRAVEL LAYER

EXISTING GRADE EL 16.00± ℄

ORIGINAL GRADE EL 2.00± ℄

20'-0± DEMUCK TO FIRM SOIL AS REQUIRED

BOT OF CANAL EL -7.00'

EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SBASCO SPECIFICATION FLO 2524.479 D

℄ CW. DISCH CANAL (SYMMETRICAL ABOUT ℄ UNLESS NOTED)

6" CONC APRON (TYP EA SIDE) CLASS 'AA', 4000 PSI (SEE SPEC FLO 2998-478)

EL +16.00'

DET "Y" (F16)

37.50

68.00'

QUANTITIES:

| | |
|---|---|
| MUCK EXCAVATION | BY FIELD |
| SAND BACK FILL | BY FIELD |
| 6" GROUT FILLED FABRIC (MARIPOSA OR EQUAL) | BY FIELD |
| 8" GROUT FILLED FABRIC (MARIPOSA OR EQUAL) | 18,300 S.F. |
| CONC CLASS "AA" (4000 PSI) | BY FIELD |

SECT B-B (P-2)
1" = 20'

TOP OF DIKE EL +19.00'

12'-6 (TYP)

3.5

OPERATING WATER LEVELS EL +16.0 TO +9

℄ C.W. DISCH CANAL

NON OPERATING WATER LEVELS EL +8.5 TO +1

EL +19.00'

3

1

1.5

BOT OF CANAL EL -17.00'

10.00'

20.00'

DET "Y" (B19)
1" = 1'-0

6x6-6/6 W.W.F.

NOTES:

1. FOR CONCRETE CLASS, SEE CORRESPONDING SECTION.
2. FOR PIPELINE AND OCEAN STRUCTURES CONSTRUCTION, REFER TO SBASCO SPEC FLO 9111.025. (UNIT #1)
3. ALL COORDINATE LOCATIONS ARE REFERENCED TO NORTH-SOUTH AND EAST-WEST BASELINES OF PLANT
4. ALL ELEVATIONS ARE REFERENCED TO MEAN LOW WATER EL 0.00' (OCEAN)
5. DEMUCKING SHALL INCLUDE REMOVAL OF INSITU SOILS INCLUDING UNCOMPACTED CLAYS & SILTS.
6. FOR CANAL EXCAVATION AND DIKE CONSTRUCTION REQUIREMENTS SEE SBASCO SPECIFICATION FLO 2524.479 D.
7. OCEAN BOTTOM PROFILES BASED ON ONE MONTH AVERAGE BEGINNING 9-WITH 10-15-71
8. FOR DISCHARGE CANAL MODIFICATIONS SEE DWGS 8770-G-721 THRU 8770-G-726
9. GROUT FILLED FABRIC SHALL HAVE A NOMINAL THICKNESS OF 6 INCHES MINIMUM UNLESS OTHERWISE NOTED. PIPE SHALL MEET THE REQUIREMENTS OF SBASCO SPEC FLO 2524.479 D. (UNIT #2) FOR BUOY DETAILS, SEE SPECIFICATION FLO 9110-AS-7.
10. INSTALLATION OF 21 INCH PIPE SHALL BE IN ACCORDANCE WITH SBASCO SPEC. FLO 2524.479 C
11. RECLAIMED WATER OUTFALL PIPE INSTALLED AS PART OF WASTEWATER SYSTEM IMPROVEMENTS DESIGNED FOR ST. LUCIE COUNTY SOUTH HUTCHINSON ISLAND WASTEWATER COLLECTION AND RECLAIMED WATER DISTRIBUTION SYSTEMS BY CAMP DRESSER & MCKEE, INC.

UNIT #1 REFERENCE DWGS: 8770-

| | |
|---|---|
| HEADWALL STRUCTS SECTS & DETAILS | G-694-1 |
| HEADWALL STRUCTS SECTS & DETAILS | G-694-2 |
| SITE GRADING & DRAINAGE SH 4 | G-667 |

AMA BRIDGES OVER P/L CO. ST LUCIE PLANT, INTAKE & DISCHARGE CANALS AS PREPARED BY CALEK SMITH ASSOCIATES CONSULTING ENGINEERS, FLA

SECT J (L9)
NTS

WWF 6x6-5/6

4" CONC PAVING (CLASS 'B' 5000 PSI) (SPEC FLO 8770-473)

4" GRAVEL

VIS-QUEEN VAPOR BARRIER

SECT K (L2)
NTS

2'-0

WWF 6x6-5/6

(-EL 5.00')

4" CONC PAVING (CLASS 'B' 5000 PSI) (SPEC FLO 8770-473)

4" GRAVEL

VIS-QUEEN BARRIER

SECT D-D (K-13)
1" = 10'

F 18.00'

4" TO 6" CRUSHED STONES (TYP)

1 ON 2.5 ± (BY FIELD)

EL 13.00'

COMPACTED BACK-FILL

MH #299F

DUCT BANK CROSSING

SECT V (L2)
NTS

SOD

GROUT FILLED FABRIC

EL -5.00'

EL -11.00'

GRAVEL (DOT GRADE 57 OR LARGER)

FILTER FABRIC

MH #299F N 638.00 E 599.26

LIGHTING POLE FDN

SECURITY FENCE

EL 13.00

NUISANCE FENCE

EL 18.00'

MH #299F & DUCT BANK CROSSING (N 716.40)

ENLARGED PLAN (K-3)
1" = 40'

SWITCHYARD ACCESS RD.

40'-0±

EL 10.00'

4" TO 6" THK DOT #5 CRUSHED STONES

COMPACTED BACK-FILL

EL 13.00'

SECT C-C (K-14)
1" = 20'

LEGEND

DENOTES EASEMENT AREA

DENOTES CONCRETE STRUCTURES

DENOTES CWS FLOW DIRECTION

REFERENCE DWGS LIST OF DRAWINGS — 2998 APT#2

| | |
|---|---|
| THIRD INTAKE PIPELINE, DIKE & CANAL MOD. SH 1 | G-664 SO1 |
| DISCH. PIPE UNIT #1, BLKHD MODIFICATION | G-664-SO3 |
| BLKHD. STRUCT M&R SH 2. | |
| HEADWALL STRUCTURE SH.1 | G-664 SO4 |
| VELOCITY CAP SH.1 | G-664 SH 28 |
| PIPE PLAN & PROFILE | G-664 SO2 |
| EXCAV & BACKFILL - PLANS & SECTS - SH.2 | G-402 |
| PLANT ROADS - PLAN & SECTS | G-485 |
| CWS OCEAN INT & DISCH SH. 3 | G-663 SO3 |
| CWS OCEAN INT & DISCH SH.4 | G-663 SO4 |
| DISCH CANAL HEADWALL STR-M&R SH.1 | G-664 SO1 |
| DISCH CANAL HEADWALL STR-M&R SH.2 | G-664 SO2 |
| CWS OCEAN INT & DISCH SH. 2 | G-663 SO2 |
| CWS OCEAN INT & DISCH SH 5 | G-663 SO5 |
| CWS OCEAN INT & DISCH SH 6 | G-663 SO6 |
| CWS SEAL WELL - MAS | G-653 |

UNIT #1 REFERENCE DWGS — 8770

| | |
|---|---|
| LIST OF DRAWINGS | A-146 |
| PLANT ROADS - PLAN & SECTS | G-459 |
| CWS - OCEAN INTAKE & DISCH: PROFILE | G-664 SH.1 |
| CWS - OCEAN INTAKE & DISCH - SECT AND DETAILS SH.2 | G-664 SH 9A |
| CWS - OCEAN INTAKE & DISCH - SECT AND DETAILS SH. 3 | G-664 SH. 3 |
| CWS - OCEAN INTAKE & DISCH - SECT AND DETAILS SH. 5 | G-664 SH. 5 |
| DISCH. CANAL DIKE MODIF. MONITORING DOOR | G-723 |
| CWS SEAL WELL - MAS | G-653 |
| CWS DISCH CANAL DIKE MODIF. PLAN & SECT | G-721 SH. 1 & 2 |
| CWS DISCH CANAL DIKE MODIF. SAFETY BARRIER | G-722 |
| CWS DISCH CANAL DIKE MODIF. SEALWELL (EXCAVATION) | G-723 |
| CWS DISCH CANAL DIKE MODIF. SPILLWAY MAS & PLAN | G-724 |

WORK THIS DWG WITH DWGS G-663 SO2, SO3, SO4, 1-664 SH3, SH4, SH5 & SH6

| NO. | DATE | REVISION | BY | CH | APPROVED |
|---|---|---|---|---|---|
| 3 | 9-04-80 | ADD (16) & (17) REF DWGS - REV (L16) REF DWG - REV (L16) NOTE (10) & ADD (11) NOTE | KPJ | CY | |
| 2 | 3-31-80 | REV (L16) REF DWG - REV (L16) NOTE (10) & ADD (11) NOTE | KPJ | HK | |
| 8 | 6/27/75 | EC 275042. ADD (J1-J2) REFERENCE TO DWG. 2998-G-663 SH. 8. | GW | MJ | |

| | | | |
|---|---|---|---|
| REV | NCR | DCN | FCR |
| 3 | 90460 | S13-17781 S13-17876 S13-17941 | 2-2302 2-3314 2-3336 & 2-1529 |
| | INCORP | INCORP | INCORP |
| | | | 2-3420 NOT INC |

THIS DOCUMENT IS THE PROPERTY OF ERASCO SERVICES INCORPORATED. ITS USE IS EXPRESSLY RESTRICTED BY THE TERMS OF THE CONTRACT, DATED AS OF SEPT 1 1975 BETWEEN ERASCO SERVICES INCORPORATED AND FLORIDA POWER & LIGHT COMPANY.

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT
1983 — 890,000 KW EXTENSION — UNIT NO. 2
CIRCULATING WATER SYSTEM
OCEAN INTAKE & DISCHARGE SH.1

ERASCO SERVICES INCORPORATED NEW YORK

| | |
|---|---|
| SCALE AS NOTED | APPROVED |
| DR. C.H. | DATE 6-27-75 |
| DES. CHECKED | 2998-G-663 |
| CH. Y. CHOW | SH.1 |

CAD FILE: 2998-G-633 sh1_16.dwg