

**DOCKETED**

<b>Docket Number:</b>	87-AFC-01C
<b>Project Title:</b>	COMPLIANCE-Luz Solar Electric Generating System Cogeneration AFC (150 MW) Units III-VII.
<b>TN #:</b>	231623-1
<b>Document Title:</b>	SEGS III - VII 2019 2nd Semiannual Bioremediation Report
<b>Description:</b>	N/A
<b>Filer:</b>	Glen T King
<b>Organization:</b>	NextEra Energy
<b>Submitter Role:</b>	Applicant
<b>Submission Date:</b>	1/22/2020 9:34:08 AM
<b>Docketed Date:</b>	1/22/2020

Date: January 13, 2020

California Regional Water Quality Control Board  
Lahontan Region  
2501 Lake Tahoe Boulevard  
South Lake Tahoe, CA 96150

**Facility Name:** SEGS III - VII

**Address:** 41100 Highway 395  
Boron, CA 93516

**Contact Person:** Glen King

**Job Title:** Environmental Specialist

**Phone:** 760-762-1505

**Email:** glen.king@fpl.com

**WDR/NPDES Order Number:** 6-95-102

**WDID Number:** 6B368909005

**Type of Report** (circle one): **Monthly** **Quarterly** **Semi-Annual** **Annual** **Other**

**Month(s)** (circle applicable month(s)\*): **JAN** **FEB** **MAR** **APR** **MAY** **JUN**  
**JUL** **AUG** **SEP** **OCT** **NOV** **DEC**

\*annual Reports (circle the first month of the reporting period)

**Year:** 2019

**Violation(s)?** (Please check one):  X  **NO**   **YES\***

**\*If YES is marked complete a-g (Attach Additional information as necessary)**

**a) Brief Description of Violation:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**b) Section(s) of WDRs/NPDES Permit Violated:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c) **Reported Value(s) or Volume:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d) **WDRs/NPDES  
Limit/Condition:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_


e) **Date(s) and Duration of  
Violation(s):** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

f) **Explanation of Cause(s):** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

g) **Corrective Action(s)  
(Specify actions taken and a schedule  
for actions to be taken)** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision following a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my knowledge of the person(s) who manage the system, or those directly responsible for data gathering, 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.

If you have any questions or require additional information, please contact me at the number provided above.

Sincerely,   
Signature: \_\_\_\_\_

Name: Glen T. King

Title: Environmental Specialist



NextEra Energy Operating Services, LLC, 41100 US Highway 395,  
Boron, CA 93516  
760-762-5562

January 13, 2020

California Water Quality Control Board – Lahontan Region  
2501 Lake Tahoe Boulevard  
South Lake Tahoe, California 96150

Attention: Mr. John Steude, PG  
Engineering Geologist

**Subject: Second Semester and Annual 2019 Bioremediation Monitoring Report  
Board Order No. 6-95-102 – Monitoring and Reporting Program  
SEGS III through VII Facilities  
Boron, California**

Dear Mr. Steude:

NextEra Energy Operating Services, LLC, on behalf of Luz Solar Partners III through VII, Ltd., is pleased to present this Bioremediation Monitoring Report for the Second Semester of 2019. All operational activities with the exception of soil sampling of the bioremediation treatment unit, landfarm facility, and testing related to spill responses are performed by site personnel. Soil sampling is currently performed by Northstar Environmental Remediation under direct contract to Luz Solar Partners III through VII Ltd. Chemical analyses are performed by an independent State-certified laboratory also under direct contract.

Active treatment of soils affected by heat transfer fluid (HTF) is continuing in our permitted bioremediation facility. In addition, HTF-impacted soil is contained in our landfarm as the result of releases and subsequent clean-up in the solar fields. At present, approximately 160 cubic yards of soil are present in the bioremediation facility and approximately 500 cubic yards of soil are present in the landfarm. Soil in the landfarm is from releases that have been previously reported to the California Water Quality Control Board – Lahontan Region and other appropriate agencies.

If you have any questions regarding this report, please feel free to call me at (760) 762-1505.

Sincerely,

**NextEra Energy Operating Services, LLC for**  
Luz Solar Partners III – VII Ltd.

A handwritten signature in black ink that reads "Glen T. King".

Glen T. King  
Environmental Specialist  
Luz Solar Partners III – VII Ltd.



2019 SECOND SEMIANNUAL  
BIOREMEDIATION MONITORING REPORT  
SEGS III – VII KRAMER JUNCTION  
Board Order No. 6-95-102

January 10, 2020

Prepared for:  
Luz Solar Partners III - VII Ltd. c/o  
NextEra Energy Operating Services, LLC  
41100 Highway 395  
Boron, California 93516

Prepared By:  
Northstar Environmental Remediation  
26225 Enterprise Court  
Lake Forest, California 92630

## SIGNATURE PAGE

### 2019 SECOND SEMIANNUAL BIOREMEDIATION MONITORING REPORT

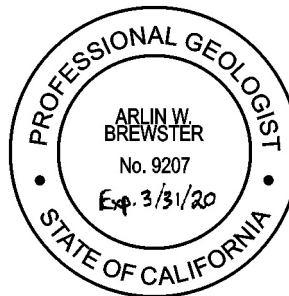
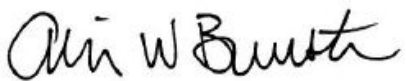
#### SEGS III - VII KRAMER JUNCTION

#### BORON, CALIFORNIA

#### PROFESSIONAL STATEMENT

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

The contents of this report are subject to the limitations of the available data.



Arlin W. Brewster

Professional Geologist 9207

January 10, 2020

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## 1.0 INTRODUCTION

Northstar Environmental Remediation (Northstar) of Lake Forest, California has prepared this 2019 Second Semiannual Bioremediation Monitoring Report for the Solar Electric Generating Station (SEGS) III – VII facility on behalf of NextEra Energy Operating Services, LLC (NextEra) and Luz Solar Partners III - VII Ltd. This report presents environmental data required under California Regional Water Quality Control Board - Lahontan Region (RWQCB) Order No. 6-95-102 Waste Discharge Requirements and Monitoring and Reporting Program. This report summarizes all bioremediation activity that occurred during the reporting period. Northstar currently conducts soil sampling associated with the bioremediation unit. A site vicinity map of SEGS III – VII is included in **Figure 1**.

### 1.1 Facility Information

**Facility Name:**

Solar Electric Generating Station (SEGS) III – VII

**Facility Location:**

41100 Highway 395  
Boron, California 92347

**Facility Contact:**

Mr. Glen T. King  
Safety/Environmental Specialist  
NextEra Energy Operating Services, LLC  
(760) 762-1505

**Monitoring and Reporting Program:**

RWQCB Order No. 6-95-102 (6-90-24 rescinded)

**Waste Discharge Identification Number:**

6B368909005

### 1.2 Soil Treatment Units

The Bioremediation Unit is designed to treat soil contaminated with the heat transfer fluid (HTF) Therminol, which is used in the processes of the solar trough technology employed at the site. Onsite treatment of contaminated soils is accomplished through two soil treatment units onsite: the Bioremediation Unit (located between SEGS VI and VII), which is used for storage and treatment of HTF-impacted soils; and, the Landfarm Unit (located between SEGS III and IV), which is used for treatment by natural attenuation and for storage of remediated soils, staged for future use at the facility. The location of both Units are shown on **Figure 1**.



## **2.0 HEAT TRANSFER FLUID RELEASES**

There were no reportable spills (more than 25 gallons) of heat transfer fluid during the reporting period.

### 3.0 TREATMENT AND MONITORING

The Bioremediation Unit is divided into a north and south half by a concrete divider (see **Figure 2**). The North half is designated for soil treatment, and the south half for HTF-impacted soil storage. The impacted soils are treated in smaller cells by mixing with a urea fertilizer (containing nitrogen, phosphorous, and potassium), adding moisture, and by aerating the soils on a weekly to bi-weekly basis. This activity enhances biodegradation of the HTF.

Monitoring is performed by visually inspecting the condition of the concrete divider and leakage detection sumps (performed by NextEra) and by collecting periodic, representative samples of the treated soil media (performed by Northstar). When HTF compounds are demonstrated to be below 1,000 parts per million (ppm) by an analytical laboratory, the treated soils are then staged in the Landfarm Unit where natural attenuation occurs. Once the HTF compounds are below 100 parts per million, they are staged for future use within the facility.

The following notes apply to the treatment and monitoring performed during this reporting period:

- No new HTF-impacted soil was transferred into the Bioremediation Unit.
- No treated soil was transferred to the Landfarm Unit.
- No additional soil was released for use within the SEGS facility.
- Sampling of two bioremediation stockpiles was performed in August 2019.
- The annual sampling beneath the Landfarm Unit was performed in December 2019.
- No defects were discovered during inspections of the concrete divider and leakage detection sumps.
- No water accumulated in the leakage detection sumps.
- Soil aeration was performed as regularly scheduled.

## 4.0 SAMPLING AND ANALYTICAL SUMMARY

When required, soil samples are collected from four random, discrete locations within the soil stockpiles and transferred to a clean 5-gallon bucket with a clean stainless-steel trowel. All sampling apparatus are cleaned with non-phosphate detergent (typically Alconox, Liquinox, or equivalent) and triple-rinsed with deionized water prior to collecting all soil samples. The composited soil is then homogenized and transferred to laboratory-supplied, certified clean sample containers. The samples are labelled, sealed, and placed on ice to preserve the volatile compounds.

They are then transported under chain-of-custody protocols to TestAmerica Laboratories, Inc., a state- and federally-accredited laboratory located in Irvine, California. The soil samples are analyzed by Environmental Protection Agency Method 8015M for 1,1-Biphenyl and 1,1-Oxybisbenzene, which are volatile organic compounds characteristic of the HTF Therminol. The laboratory report is then submitted directly to NextEra and Northstar personnel and are presented in **Appendix A** and summarized in **Table 1**.

Composite samples were collected from the east and west stockpiles in the Bioremediation Unit on several occasions during the 2019 calendar year, as follows:

- The east stockpile was sampled on April 12 and August 16, 2019. 1,1-Biphenyl had a reportable concentration of 850 ppm in April but was non-detect (<5.0 ppm) in August. 1,1-Oxybisbenzene had a reportable concentration of 2,800 ppm in April and 5.5 ppm in August.
- The west stockpile was sampled on May 30, 2019. 1,1-Biphenyl had a reportable concentration of 6,400 ppm and 1,1-Oxybisbenzene had a reportable concentration of 21,000 ppm. Due to the elevated concentrations, this stockpile was not suitable for bioremediation and was hauled offsite to a landfill facility.
- Following removal of the above stockpile, new material was placed on the western part of the Bioremediation Unit. This west stockpile was sampled on August 16, 2019. 1,1-Biphenyl was non-detect (<4.9 ppm) and 1,1-Oxybisbenzene had a reportable concentration of 24 ppm.

In addition, a composite sample of a third soil stockpile in the Bioremediation Unit (in queue for treatment) was collected on August 16, 2019. In this sample (identified as 'Pile Composite' in the associated laboratory report), 1,1-Biphenyl had a reportable concentration of 410 ppm and 1,1-Oxybisbenzene had a reportable concentration of 1,900 ppm.

The annual sample collected from beneath the Landfarm Unit on December 10, 2019 was non-detect for HTF compounds.

# FIGURES

# TABLE

# **APPENDIX A**

## **LABORATORY REPORTS**