

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2015-0076  
AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
(NPDES PERMIT NO. CA0084255)

LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST  
GROUNDWATER TREATMENT SYSTEM  
SAN JOAQUIN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. On 4 August 2011, the Central Valley Water Board adopted Waste Discharge Requirements Order R5-2011-0055, prescribing waste discharge requirements for the Lincoln Center Environmental Remediation Trust Groundwater Treatment System, San Joaquin County. For the purposes of this Order, the Lincoln Center Environmental Remediation Trust is hereafter referred to as "Discharger" and the Groundwater Extraction Treatment System is hereafter referred to as "GWTS."
2. The Discharger operates the GWETS as part of a remedial action to clean groundwater polluted with volatile organic compounds (VOCs), including perchloroethene (PCE) solvent, considered carcinogenic and a threat to public health in groundwater designated for use as drinking water in the vicinity of the Lincoln Center remediation site. The operation of the GWTS provides important hydraulic control of the VOC plume migration. Pumped groundwater is treated by air stripping and granular activated carbon. The treated groundwater is discharged to Fourteen Mile Slough via the City of Stockton's storm drain system.
3. On 9 December 2014, the Discharger requested an amendment of Order R5-2011-0055 to: 1) modify the description of the treatment system, 2) reduce the permitted discharge rate from 0.43 million gallons per day (MGD) to 0.25 MGD, and 3) increase the electrical conductivity average monthly effluent limitations from 900  $\mu\text{mhos/cm}$  to 1,500  $\mu\text{mhos/cm}$ . Furthermore, the Discharger conducted a treatment efficiency test of the GWTS in February 2015.
4. **Treatment System.** The Facility is a ground water extraction and treatment system designed to remove volatile organic compounds (VOCs), petroleum products and lead from groundwater. The treatment system also treats residual fluids generated during the continuing investigation, remediation, and monitoring activities at the site. Constituents of concern in the influent groundwater include benzene, cis-1,2-dichloroethylene, 1,2 dichloroethane, 1,1-dichloroethylene, ethylbenzene, lead, methyl tertiary butyl ether, tetrachloroethylene, toluene, total petroleum hydrocarbons (as gasoline), trichloroethylene, and xylene.

The existing permitted Facility under Order R5-2011-0055 consists of an influent equalization tank, a low profile air stripper for VOC removal, followed by two liquid phase granular activated carbon (LGAC) canisters. In addition, a vapor phase granular activated carbon vessel was used to absorb the VOCs prior to discharge to the atmosphere. Since initiation of operation of the groundwater cleanup in 1999, the constituents of concern (i.e., primarily PCE and petroleum hydrocarbons) have been reduced substantially. The significant reduction means that the air stripper is no longer needed. The Discharger conducted a test of the GWTS in February 2015 to evaluate the treatment efficiency using only the LGAC. The test indicated LGAC alone is capable of removing VOCs to the levels required in Order R5-2011-0055.

AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM  
SAN JOAQUIN COUNTY

Therefore, the Discharger requested a change to the treatment system described in the NPDES permit.

5. **Permitted Discharge Flow Rate.** A technology-based effluent limitation for flow was established in Order R5-2011-0055 to monitor the performance of the groundwater treatment system from the standpoint of volumes being treated. The average daily flow rate allowed in Order R5-2011-0055 was established at 0.43 MGD based on the design flow. Based on discharge flow data from January 2012 – September 2014 the flow was generally less than 0.25 MGD. Furthermore, the Discharger utilized a site-specific groundwater model to evaluate plume capture of the GWTS and determined that plume capture could be maintained at pumping rates between 0.08 MGD and 0.25 MGD. Therefore, the Discharger requested the permitted discharge flow rate to be reduced to 0.25 MGD.
6. **Electrical Conductivity (EC) Effluent Limitations.** The extracted groundwater has been experiencing a naturally-occurring rise in EC that is nearing the existing average monthly effluent limitation (AMEL) of 900  $\mu\text{mhos/cm}$ . The increasing EC concentrations are outside the control of the Discharger, so an increase in the AMEL to 1,500  $\mu\text{mhos/cm}$  was requested. As discussed in Finding 5, the Discharger also requested a decrease in the permitted discharge flow rate, which, when combined with the EC concentration increase, will result in no increase in the salinity loading discharged to Fourteen Mile Slough. Based on a 2009 mixing zone study<sup>1</sup> the receiving water EC concentrations in Fourteen Mile Slough decrease rapidly downstream of the discharge and then equilibrate to the EC concentrations in the San Joaquin River at Juggler's Point. Therefore, the increased EC concentrations will have minimal impacts near the discharge. Furthermore, because the mass loading does not increase there will also be minimal far field impacts in the San Joaquin River. The revised EC effluent limit, therefore, complies with the Antidegradation Policy, and meets the federal antibacksliding exception under 303(d)(4) of the Clean Water Act.
7. Order R5-2011-0055 may be reopened and modified in accordance with the Code of Federal Regulations (CFR) at 40 CFR section 122.62(a)(2). A major modification of a permit is allowed when new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance. The Discharger's 9 December 2014 submittal and the February 2015 treatment efficiency test are new information supporting the modification of the permit. Findings 4 – 6, above, discuss the new information provided by the Discharger.
8. Issuance of modifications to Order R5-2011-0055 is exempt from the California Environmental Quality Control Act (Public Resources Code section 21000, et seq.) in accordance with Water Code section 13389.
9. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

---

<sup>1</sup> Revised Fourteen-Mile Slough Dilution/Mixing Zone Study, 17 November 2009, prepared by LFR Inc. an Arcadis Company.

AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
 LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM  
 SAN JOAQUIN COUNTY

**IT IS HEREBY ORDERED THAT:**

Order R5-2011-0055 (NPDES No. CA0084255) is amended to 1) modify the description of the treatment system, 2) reduce the permitted discharge rate from 0.43 million gallons per day (MGD) to 0.25 MGD, 3) increase the electrical conductivity average monthly effluent limitations from 900  $\mu$ mhos/cm to 1,500  $\mu$ mhos/cm, and 4) update the Facility contact information. The Order is amended as shown in Items 1 – 16, below.

1. Change the Order number throughout from “Order R5-2011-0055” to “R5-2011-0055-01.”
2. **Cover Page.** Modify the paragraph above the signatory line as shown in underline/strikeout format below:

I, **Pamela C. Creedon**, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **4 August 2011**, and amended by Order R5-2014-0122 on **9 October 2014**, and Order R5-2015-0076 on **5 June 2015**.

3. **Limitations and Discharge Requirements, Table 4 – Facility Information.** Modify Table 4, as shown in underline/strikeout format below:

**Table 4. Facility Information**

<b>Discharger</b>	Lincoln Center Environmental Remediation Trust
<b>Name of Facility</b>	Groundwater Treatment System
<b>Facility Address</b>	6471 Pacific Avenue
	Stockton, CA 95207
	San Joaquin County
<b>Facility Contact, Title, and Phone</b>	<del>Mark Adams</del> Joe Niland, Trustee, (916) 637-8325 <del>(510) 237-1782</del>
<b>Mailing Address</b>	3043 Gold Canal Dr., Suite 201, Rancho Cordova, CA 95670 <del>137 Park Place, Point Richmond, CA 94801</del>
<b>Type of Facility</b>	Groundwater Treatment System
<b>Facility Design Flow</b>	0.43 million gallons per day (MGD)

4. **Limitations and Discharge Requirements, Section II. Findings.** Modify Section II.A and B, as shown in underline/strikeout format below:

**A. Background.** The Lincoln Center Environmental Remediation Trust (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0144-01 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084255. The Discharger submitted a Report of Waste Discharge, dated 2 April 2010, and applied for an NPDES permit renewal to discharge up to 0.43 MGD of treated wastewater from the Groundwater Treatment System, hereinafter Facility. The application was deemed complete on 2 November 2010. On 9 December 2014, the Discharger requested an amendment of this Order to: 1) modify the treatment system, 2) reduce the permitted discharge flow rate to 0.25 MGD, and 3) increase the electrical conductivity effluent limitations.

AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
 LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM  
 SAN JOAQUIN COUNTY

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

**B. Facility Description.** The Discharger owns and operates a groundwater extraction and treatment system. The treatment system consists of an influent equalization tank, ~~an air stripper,~~ and ~~two-three~~ liquid phase granulated activated carbon (LGAC) adsorption canisters. Wastewater is discharged from Discharge Point No. 001 (see table on cover page) to Fourteen Mile Slough, a water of the United States, via a San Joaquin County storm drain within the Sacramento-San Joaquin Delta. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

5. **Limitations and Discharge Requirements, Table 6 – Final Effluent Limitations.** Modify the effluent limitations for electrical conductivity in Table 6, as shown in underline/strikeout format below:

**Table 6. Final Effluent Limitations**

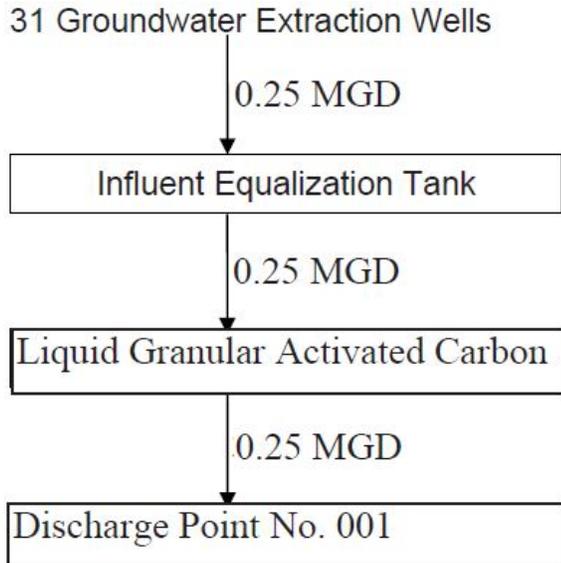
Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Electrical Conductivity @ 25°C	µmhos/cm	<u>900</u> <del>1,500</del>	--	--	--

6. **Limitations and Discharge Requirements, Section IV.A.1 Final Effluent Limitations.** Modify the average daily discharge flow effluent limitation, Section IV.A.1.e, as shown in underline/strikeout format below:

**e. Average Daily Discharge Flow.** The average daily discharge flow shall not exceed 0.2543~~3~~ MGD.

7. **Attachment C – Flow Schematic.** Replace the Facility flow schematic with the figure below:

### ATTACHMENT C – FLOW SCHEMATIC



8. **Attachment F – Fact Sheet, Table F-1 – Facility Information.** Modify the Facility contact information and Facility flow in Table F-1, as shown in underline/strikeout format below:

**Table F-1. Facility Information**

<b>WDID</b>	5B391080001
<b>Discharger</b>	Lincoln Center Environmental Remediation Trust
<b>Name of Facility</b>	Groundwater Treatment System
<b>Facility Address</b>	6471 Pacific Avenue
	Stockton, CA 95207
	San Joaquin County
<b>Facility Contact, Title and Phone</b>	<del>Mark Adams</del> Joe Niland, Trustee, (510) 237-1782 (916) 637-8325
<b>Authorized Person to Sign and Submit Reports</b>	Joe Niland, Trustee, (916) 637-8325 <del>Mark Adams, Trustee, (510) 237-1782</del>
<b>Mailing Address</b>	<del>137 Park Place, Point Richmond, CA 94801</del> 3043 Gold Canal Dr., Suite 201, Rancho Cordova, CA 95670
<b>Billing Address</b>	Same as mailing address
<b>Type of Facility</b>	Groundwater extraction and treatment system
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	2
<b>Complexity</b>	B
<b>Pretreatment Program</b>	Not applicable
<b>Reclamation Requirements</b>	Not applicable
<b>Facility Permitted Flow</b>	0.2543 million gallons per day (MGD)
<b>Facility Design Flow</b>	0.2543 MGD

9. **Attachment F – Fact Sheet, Section I. Permit Information.** Add new section D, as shown underlined below:

D. On 9 December 2014, the Discharger requested an amendment of this Order to: 1) modify the treatment system, 2) reduce the permitted discharge flow rate to 0.25 MGD, and 3) increase the electrical conductivity effluent limitations.

10. **Attachment F – Fact Sheet, Section II. Facility Description.** Revise the Facility description in Section II.A, as shown in underline/strikeout format below:

**A. Description of Wastewater and Biosolids Treatment or Controls**

The Facility is a ground water extraction and treatment system designed to remove volatile organic compounds (VOCs), petroleum products and lead from groundwater. The treatment system also treats residual fluids generated during the continuing investigation, remediation, and monitoring activities at the site. Constituents of concern in the influent groundwater include benzene, cis-1,2-dichloroethylene, 1,2-dichloroethane, 1,1-dichloroethylene, ethylbenzene, lead, methyl tertiary butyl ether, tetrachloroethylene, toluene, total petroleum hydrocarbons (as gasoline), trichloroethylene, and xylene.

The groundwater treatment system (GWTS) consists of an influent equalization tank, ~~an air stripper,~~ and ~~two~~ three liquid phase granulated activated carbon (LGAC) adsorption canisters. The activated carbon is regenerated or disposed of off-site. The treatment system is designed for a flow of 0.43 MGD of extracted groundwater and the Discharger was permitted to discharge an average daily discharge flow of 0.43 MGD. However, based on discharge flow data from January 2012 – September 2014 the discharge flow was generally less than 0.25 MGD. Furthermore, the Discharger utilized a site-specific groundwater model to evaluate plume capture of the GWTS and determined that plume capture could be maintained at pumping rates between 0.08 MGD and 0.25 MGD. Therefore, the permitted average daily flow was reduced to 0.25 MGD by amending Order R5-2015-0076 adopted by the Central Valley Water Board on 5 June 2015.

The GWTS originally included a low profile air stripper prior to the LGAC for VOC removal. In addition, a vapor phase granular activated carbon vessel was used to absorb the VOCs prior to discharge to the atmosphere. Since initiation of operation of the groundwater cleanup in 1999, the constituents of concern (i.e., primarily PCE and petroleum hydrocarbons) have been reduced substantially. The significant reduction meant that the air stripper was no longer needed. The Discharger conducted a test of the GWTS in February 2015 to evaluate the treatment efficiency using only the LGAC. The test indicated LGAC alone is capable of removing VOCs to the levels required in this Order. On 5 June 2015, the Central Valley Water Board adopted amending Order R5-2015-0076 modifying the facility description as shown in this Order.

11. **Attachment F – Fact Sheet, Section IV.B Technology-Based Effluent Limitations.** Modify Section IV.B.2.a and c, as shown in underline/strikeout format below:

- a. **VOCs.** Liquid Granular Activated Carbon (LGAC) ~~Air stripping~~ treatment systems are commonly used to remove VOCs from extracted groundwater at cleanup sites. The Facility utilizes ~~air stripping and activated carbon~~ LGAC and is capable of dependably removing the groundwater contaminants to concentrations that are non-detectable by current analytical technology. Order No. R5-2005-0144-01 included technology-based effluent limitations for VOC constituents of concern, including benzene, 1,2-dichloroethane, 1,1-dichloroethylene, ethylbenzene, tetrachloroethylene, toluene, trichloroethylene, and xylene, based on the ability of groundwater treatment technology to remove the groundwater contaminants to concentrations that are non-detectable by current analytical technology. The technology-based effluent limitations contained in Order No. R5-2005-0144-01 consisted of monthly median effluent limitations and were based on the analytical capability at that time (as represented by the analytical method reporting level). Order No. R5-2005-0144-01 did not include effluent limitations for methyl tertiary butyl ether, however Order No. R5-2005-0144-01 did identify methyl tertiary butyl ether as a constituent of concern. Order No. R5-2005-0144-01 also established a maximum daily effluent limitation (MDEL) for Total VOCs of 1.0 µg/L, which applied to the sum of the concentrations of VOCs in any single sample.

State Water Board Resolution No. 68-16 requires implementation of best practicable treatment and control (BPTC) to ensure that the highest water quality is maintained consistent with the maximum benefit to the people of the State. BPTC for groundwater cleanup of VOCs provides that the pollutants should be discharged at concentrations no higher than quantifiable levels for each pollutant. For the purposes of this Order, BPTC for VOCs requires meeting effluent limitations based on the Minimum Levels (MLs) defined in Appendix 4, Table 2a of the SIP. Several dischargers, including the Discharger, in the Central Valley Region have implemented BPTC groundwater treatment systems and have been able to consistently treat VOCs in the wastewater to concentrations below the MLs in the SIP.

According to the SIP, if no ML value is below the effluent limitation, the applicable ML value shall be the lowest ML value listed in Appendix 4 of the SIP. VOC concentrations below the MLs are generally considered unquantifiable. Therefore, application of technology-based effluent limitations for VOCs at groundwater cleanup sites requires effluent to meet MLs.

With respect to the specific discharges permitted herein, the following have been considered as required in 40 CFR 125.3 for establishing effluent limitations based on BPJ:

- i. **Appropriate Technology for Category or Class of Discharges.** LGAC ~~and air stripping~~ are commonly used to remove VOCs from extracted groundwater at cleanup sites. Properly operated and maintained systems perform reliably and ensure essentially complete removal of VOCs. The Discharger employs LGAC ~~and air stripping~~.
- ii. **Unique Factors Relating to the Discharger.** The Discharger has not identified any unique factors that would justify discharges equaling or exceeding quantifiable concentrations of VOCs.

AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
 LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM  
 SAN JOAQUIN COUNTY

**iii. Age of Equipment.** The Discharger has not identified any concerns related to the ability to treat the contaminated groundwater due to the age of the equipment.

**iv. Non-water Quality Environmental Impacts.** The L\_GAC and air stripper should reliably remove VOCs to concentrations of less than 0.5 µg/L and should not create additional non-water quality impacts (e.g., air emissions), or undue financial costs for the Discharger.

L\_GAC and air stripping are is an appropriate technology is for VOC removal from extracted groundwater. The above supports the conclusion that the Discharger can meet a MDEL of 0.5 µg/L. Therefore, an MDEL for VOCs of 0.5 µg/L is established in this Order to reflect BPTC and BPJ.

**b. Total Petroleum Hydrocarbons (Gasoline Range).** The SIP does not specify an ML for total petroleum hydrocarbons (gasoline range). Therefore, this Order establishes an MDEL of 50 µg/L, which reflects the commonly achieved reporting level for this constituent.

**c. Flow.** A technology-based effluent limitation for flow is established in this Order to monitor the performance of the groundwater treatment system from the standpoint of volumes being treated. The average daily flow rate in Order No. R5-2005-0144-01 was established at 0.43 MGD based on the design flow and is retained in this Order when the permit was renewed in August 2011. The permitted average daily flow rate was subsequently reduced to 0.25 MGD by amending Order R5-2015-0076 adopted by the Central Valley Water Board on 5 June 2015. 40 C.F.R. 122.45(2)(i) requires that, "...calculation of any permit limitations, standards, or prohibitions which are based on production (or other measure of operation) shall be based not upon the designed production capacity but rather upon a reasonable measure of actual production of the facility." Based on discharge flow data from January 2012 – September 2014 the flow was generally less than 0.25 MGD. Furthermore, the Discharger utilized a site-specific groundwater model to evaluate plume capture of the GWTS and determined that plume capture could be maintained at pumping rates between 0.08 MGD and 0.25 MGD.

**12. Attachment F – Fact Sheet, Table F-3 – Summary of Technology-based Effluent Limitations.**

Modify the technology-based effluent limit for flow and add new footnote 2 in Table F-3, as shown in underline/strikeout format below:

**Table F-3. Summary of Technology-based Effluent Limitations**

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	0.254 <sup>2</sup>	--	--

<sup>1</sup> This effluent limitation applies to VOCs identified as constituents of concern in influent groundwater, including: benzene, 1,1-dichloroethylene, 1,2-dichloroethane, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes. Note, average monthly water quality-based effluent limitations also apply to 1,2-dichloroethane.

<sup>2</sup> Average daily discharge flow rate.

13. **Attachment F – Fact Sheet, Section IV.C.3. Determining the Need for WQBELs.** Modify Section IV.C.3.c.viii for salinity.

a) Modify first paragraph of section **(a) WQO**, as shown in underline/strikeout format below:

**(a) WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity, total dissolved solids, sulfate, and chloride. There are no USEPA numeric water quality criteria for the protection of agricultural, live stock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

b) Modify section **(b)(2) RPA Results, Electrical Conductivity**, as shown in underline/strikeout format below, and add new Figure F-1 (also renumber remaining figures in Attachment F):

**(b) RPA Results.**

**(2) Electrical Conductivity.** Electrical conductivity concentrations in the effluent ranged from 725  $\mu\text{mhos/cm}$  to ~~940899~~  $\mu\text{mhos/cm}$ , with an average of 795  $\mu\text{mhos/cm}$ . Based on the Discharger's 2009 mixing zone study<sup>2</sup> it was demonstrated that the discharge is insignificant compared to the tidal flow in Fourteen Mile Slough. The estimated slough tidal inflow was approximately 16 MGD during neap tides, which represents low tidal flow conditions (i.e., the tidal amplitude is lowest during neap tides). At the current permitted average daily flow of 0.25 MGD, the discharge represents only 1.6% of the daily tidal inflow under reasonable worst-case conditions. Consequently, the impact on electrical conductivity in the slough is minimal. ~~These levels indicate reasonable potential to cause or contribute to an exceedance of the agricultural goal. This can be seen in Figure F-1, below, based on the Discharger's 2009 mixing zone study. The downstream receiving water electrical conductivity concentrations in Fourteen Mile Slough were demonstrated to decrease rapidly downstream and then equilibrate to the electrical conductivity concentrations in the San Joaquin River at Juggler's Point (see Figure F-1).~~ ranged from 588  $\mu\text{mhos/cm}$  to

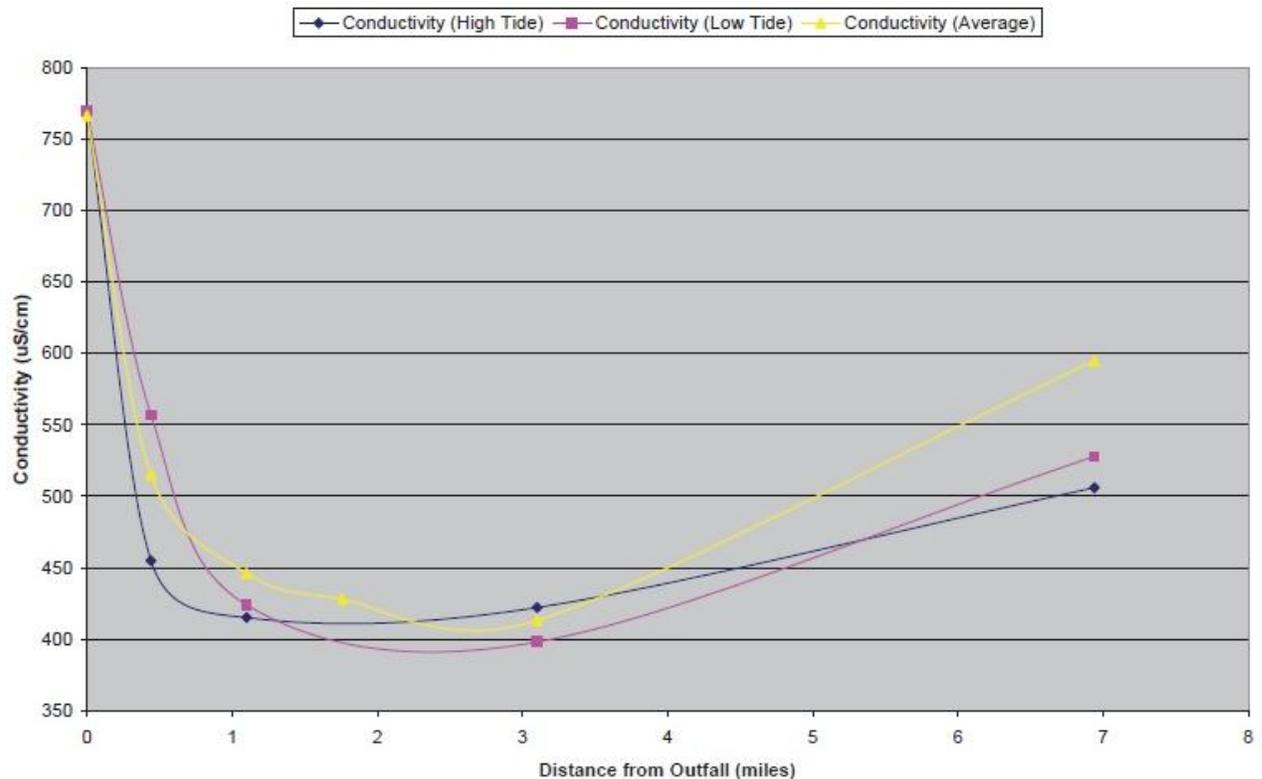
---

<sup>2</sup> Revised Fourteen-Mile Slough Dilution/Mixing Zone Study, 17 November 2009, prepared by LFR Inc. an Arcadis Company. See also Section IV.C.2.d of the Fact Sheet (Attachment F).

AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
 LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM  
 SAN JOAQUIN COUNTY

833  $\mu\text{mhos/cm}$ , with an average of 747  $\mu\text{mhos/cm}$ . San Joaquin River electrical conductivity levels were within 500-600  $\mu\text{mhos/cm}$  during the time of the 2009 mixing zone study. As reported in the Discharger salinity study, the average background electrical conductivity concentration in the San Joaquin River upstream of the confluence with Fourteen Mile Slough at Rough and Ready Island was 449  $\mu\text{mhos/cm}$ .

Figure F-1 – Conductivity vs Distance from Outfall (2009 Mixing Zone Study)



d) Modify section (c) **WQBELs**, as shown in underline/strikeout format below:

**(c) WQBELs**. The Discharger's study demonstrated that an AMEL for electrical conductivity (EC) of 900  $\mu\text{mhos/cm}$  at a discharge rate of 0.43 MGD is protective of the agricultural supply and municipal and domestic supply beneficial uses of Fourteen Mile Slough. ~~Therefore, this Order retains the effluent limitation from Order No. R5-2005-0144-01.~~ Electrical conductivity is an indicator parameter for salinity, including total dissolved solids. Establishing effluent limitations for electrical conductivity is expected to effectively limit the constituents that contribute to salinity, including total dissolved solids. Therefore, effluent limitations for total dissolved solids are not established in this Order.

By letter dated 9 December 2014, the Discharger requested an increase in the AMEL for EC, because the extracted groundwater has been experiencing a naturally-occurring rise in EC that is nearing the existing AMEL. To maintain

AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
 LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM  
 SAN JOAQUIN COUNTY

the same salinity loading to Fourteen Mile Slough, the Discharger also requested a reduction in the discharge rate from 0.43 MGD to 0.25 MGD. The historical EC and TDS data were correlated to estimate the allowed monthly salinity loading to Fourteen Mile Slough under Order R5-2011-0055-01. Based on the salinity data an average EC to TDS conversion factor of 0.65 (standard deviation of 0.1) was determined [i.e.,  $TDS(mg/L)=0.65 \times EC(\mu mhos/cm)$ ]

Assuming the TDS mass load as a constant value, the EC value corresponding to the currently-permitted TDS mass loading at the proposed flow rate of 0.25 MGD would be 1,536  $\mu mhos/cm$ . Therefore, the EC average monthly effluent limit was increased to 1,500  $\mu mhos/cm$  by amending Order R5-2015-0076 on 5 June 2015. With the corresponding decrease in allowed discharge flow, the salinity loading to Fourteen Mile Slough will not increase. Therefore, the revised EC effluent limit complies with the Antidegradation Policy and meets the federal antibacksliding exception under 303(d)(4) of the Clean Water Act.

In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to develop and implement a salinity evaluation and minimization plan.

e) Modify section **(d) Plant Performance and Attainability**, as shown in underline/strikeout format below:

**(d) Plant Performance and Attainability.** Monitoring data indicates that the discharge has not exceeded the AMEL of 91500  $\mu mhos/cm$  only once. The Regional Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

14. **Attachment F – Fact Sheet, Table F-10 – Summary of Final Effluent Limitations.** Modify the effluent limitations for electrical conductivity in Table F-10, as shown in underline/strikeout format below:

**Table F-10. Summary of Final Effluent Limitations**

Parameter	Units	Effluent Limitations				Basis <sup>1</sup>
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Electrical Conductivity @ 25°C	$\mu mhos/cm$	<u>91500</u>	--	--	--	MCL

**15. Attachment F – Fact Sheet, Section IV.3 Satisfaction of Anti-Backsliding Requirements.**

Add new paragraph at the end of Section IV.D.3, as shown underlined below:

This Order was amended by Order R5-2015-0076 on 5 June 2015, increasing the average monthly effluent limits for electrical conductivity from 900 µmhos/cm to 1,500 µmhos/cm. As discussed in section IV.C.3.c.viii it has been demonstrated the discharge has minimal impact on the salinity of the receiving water at a discharge rate of 0.43 MGD and average monthly effluent limit of 900 µmhos/cm. To minimize the impact of the increased salinity concentration on the receiving water, the amendment reduced the discharge rate from 0.43 MGD to 0.25 MGD. Due to the reduction in allowed discharge rate, the increased salinity concentration does not result in an increase in the mass loading of salinity to Fourteen Mile Slough and therefore results in no increased degradation. As discussed below, the discharge complies with the Antidegradation Policy, and therefore, the increase in electrical conductivity limits is allowed in accordance with the federal antibacksliding exception under 303(d)(4) of the Clean Water Act.

**16. Attachment F – Fact Sheet, Section IV.4 Satisfaction of Antidegradation Policy.** Modify Section IV.D.4, as shown in underline/strikeout format below:**4. Satisfaction of Antidegradation Policy**

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. This Order was amended by Order R5-2015-0076 on 5 June 2015, increasing the average monthly effluent limits for electrical conductivity from 900 µmhos/cm to 1,500 µmhos/cm, and also reducing the allowed discharge rate from 0.43 MGD to 0.25 MGD. This results in no increase in the mass of salinity discharged to Fourteen Mile Slough. The minimal impact that may be caused by an increase in EC concentration is minimized by the reduction in flow. The salinity in the discharge is caused by naturally occurring salinity in the extracted groundwater. This Order requires the Discharger to minimize salinity, and requires implementation of best practicable treatment or control. The benefits of the groundwater cleanup of VOCs outweigh the minimal impacts on salinity in the receiving water and the minimal allowed degradation is to the maximum benefit to the people of the State. Therefore, the revised EC effluent limit complies with the Antidegradation Policy. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

AMENDING WASTE DISCHARGE REQUIREMENTS ORDER R5-2011-0055  
LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM  
SAN JOAQUIN COUNTY

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resource Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday (including mandatory furlough days), the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 5 June 2015.

*ORIGINAL SIGNED BY*

---

PAMELA C. CREEDON, Executive Officer