

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-0011

AMENDING TIME SCHEDULE ORDER
ORDER NO. R5-2005-0145 (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 21 October 2005, the Central Valley Water Board adopted Waste Discharge Requirements Order No. R5-2005-0144 and Time Schedule Order (TSO) No. R5-2005-0145, prescribing waste discharge requirements and compliance time schedules, respectively, for the Lincoln Center Environmental Trust Groundwater Treatment System, San Joaquin County. For the purposes of this Order, the Lincoln Center Environmental Trust (Trust) is hereafter referred to as "Discharger" and the Groundwater Treatment System is hereafter referred to as "GWTS."
2. The Discharger operates the GWTS as part of a remedial action to clean groundwater polluted with volatile organic compounds (VOCs), including perchloroethene (PCE) solvent, considered carcinogenic and thus a threat to public health in groundwater designated for use as drinking water in the vicinity of the Lincoln Center remediation site. Furthermore, reports submitted by the Discharger indicate that 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. Since the adoption of Order R5-2005-0144 and TSO R5-2005-0145, the Discharger has performed monitoring studies to confirm the source of the constituents listed under the TSO, and to determine the ability of the treatment system discharge to meet the limits of Order R5-2005-0144. As a result, the Discharger is able to comply with the limits for ammonia, iron, manganese, specific conductance, hexavalent chromium, and mercury. However, the discharge continues to exceed the effluent limits in Order R5-2005-0144 for arsenic and barium.
4. In response to Order R5-2005-0144 and TSO R5-2005-0145, the Discharger performed a mixing zone study and submitted the results to the Central Valley Water Board on 17 November 2009. The mixing zone study concludes that a mixing zone may be appropriate for arsenic and barium. If the Central Valley Water Board approves a mixing zone, the Discharger will be able to meet the effluent limits for both arsenic and barium. Thus, pursuing the mixing zone and dilution credit is an appropriate control measure to lead to compliance with these effluent limitations. Given the technological, operational and economic factors affecting the design, development, and implementation of control measures necessary to comply with the arsenic and barium limitations, including the need for Central Valley Water Board review and consideration of the Discharger's timely

mixing zone study, a revised schedule with a final compliance date of 21 October 2010 is as short as possible.

5. The final date for TSO compliance is 1 March 2010. On that date, unless the Discharger suspends groundwater extraction activities, the Discharger would violate Order R5-2005-0144 for arsenic and barium. Furthermore, if violations of the limits occur after 1 March 2010 the Trust would be exposed to mandatory minimum penalties of \$3,000 per violation, as well as discretionary penalties. If the Discharger suspends groundwater extraction activities in order to avoid violating effluent limitations, the system could potentially lose hydraulic control of the PCE plume and not be able to regain it once the system is restarted.
6. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000, et seq.), in accordance with CWC section 13389 and sections 15061(b)(3) and 15321 (a)(2), Title 14, of the California Code of Regulations.
7. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend the Time Schedule Order for this discharge and has provided them with an opportunity to submit their written views and recommendations.
8. Any person adversely affected by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review this action. The petition must be received by the State Water Resources Control Board, Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

IT IS HEREBY ORDERED THAT:

Time Schedule Order No. R5-2005-0145 (NPDES No. CA0084255) is amended as shown in underline/strikeout format in Attachment 1 to this Order.

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 **28 January 2010**.

Original Signed by
PAMELA C, CREEDON, Executive Officer

Attachment 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

ORDER NO. R5-2005-0145-01
As Amended by Order No. 2010-0011

REQUIRING THE LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST GROUNDWATER TREATMENT SYSTEM SAN JOAQUIN COUNTY TO COMPLY WITH REQUIREMENTS PRESCRIBED IN ORDER NO. R5-2005-0144 (NPDES PERMIT NO. CA0084255)

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

1. On 21 October 2005, the Regional Board adopted Waste Discharge Requirements (WDR's) Order No. R5-2005-0144, prescribing waste discharge requirements for the Lincoln Center Environmental Remediation Trust Groundwater Treatment System in San Joaquin County (hereafter Discharger).
2. Waste Discharge Requirements (WDRs), Order No. R5-2005-0144, contains Effluent Limitation No. B.1. which reads, in part, as follows:

“B. Effluent Limitations:

1. Effluent shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Median</u>	<u>Monthly Average (AMEL)</u>	<u>Daily Maximum (MDEL)</u>	<u>One Hour Average</u>
Arsenic (total recoverable)	µg/L	--	10	--	--
	lbs/day ⁵	--	0.036	--	--
Arsenic (dissolved)	µg/L	--	--	10	--
	lbs/day ⁵	--	--	0.036	--
Specific Conductance (EC at 25°C)	µmhos/ cm	--	900	--	--
Barium (dissolved)	µg/L	--	--	100	--
	lbs/day ⁵	--	--	0.36	--
Iron (total recoverable)	µg/L	--	300	--	--
	lbs/day ⁵	--	1.2	--	--
Iron (dissolved)	µg/L	--	--	300	--
	lbs/day ⁵	--	--	1.2	--
Manganese (total recoverable)	µg/L	--	50	--	--
	lbs/day ⁵	--	0.18	--	--
Manganese (dissolved)	µg/L	--	--	50	--
	lbs/day ⁵	--	--	0.18	--
Ammonia as N	mg/L	--	0.59	--	2.1
	lbs/day ⁵	--	2.1	--	--
	lbs/day ⁵	--	--	--	7.5

3. The effluent limitations specified in Order No. R5-2005-0144 for ammonia and arsenic are based on the Basin Plan narrative objective, and the effluent limitations for arsenic, specific conductance, barium, iron, and manganese are based on the Basin Plan chemical constituents objective. These limitations are based on existing Basin Plan water quality objectives that were adopted prior to 25 September 1995. Effluent limitations for these pollutants are new limitations which were not prescribed in previous Order No. 98-062, adopted by the Regional Board on 17 April 1998.

NEED FOR TIME SCHEDULE ORDER (TSO) AND LEGAL BASIS

4. The Discharger operates the groundwater treatment system as part of a remedial action to clean groundwater polluted with volatile organic compounds (VOCs), including perchloroethene (PCE) solvent, considered carcinogenic and thus a threat to public health in groundwater designated for use as drinking water in the vicinity of the Lincoln Center remediation site. Furthermore, reports submitted by the Discharger indicate that the operation of the system 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.
5. California Water Code (CWC) Section 13300 states: *"Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements."*
6. Federal regulations, 40 CFR Part 122.44 (d)(1)(i), require that NPDES permit effluent limitations must control all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above any State water quality standard, including any narrative criteria for water quality. Beneficial uses, together with their corresponding water quality objectives or promulgated water quality criteria, can be defined per federal regulations as water quality standards.
7. In accordance with CWC Section 13385(j)(3), the Regional Board finds that, based upon results of effluent monitoring, the Discharger is not able to consistently comply with the effluent limitations for arsenic, specific conductance, barium, iron, manganese, and ammonia. These limitations are new requirements that become applicable to the Order after the effective date of adoption of the waste discharge requirements, and after July 1, 2000, for which new or modified control measures are necessary in order to comply with the limitation, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days.

8. Immediate compliance with these new effluent limitations for arsenic, specific conductance, barium, iron, manganese, and ammonia is not possible or practicable. The Clean Water Act and the California Water Code authorize time schedules for achieving compliance as soon as possible, up to a maximum duration of 5 years, which is the maximum term of any NPDES permit.
9. Facilities can be built to correct the violations that would otherwise be subject to mandatory penalties under CWC Section 13385(h) and (i). The Discharger can take reasonable measures to achieve compliance within five (5) years. This Order provides a time schedule for the Discharger to develop, submit, and implement methods to optimize this remediation system to cleanup the groundwater faster and more efficiently, and/or reduce the volume of treated groundwater and find alternative means of disposal or reclamation within the life of the permit term, or construct necessary treatment facilities to meet these new effluent limitations.
10. Since the time schedule for completion of action necessary to achieve full compliance and bring the waste discharge into compliance exceeds one year, interim requirements and dates for their achievement are included in this Order. The compliance time schedule in this Order includes interim effluent limitations for arsenic, specific conductance, barium, iron, manganese, and ammonia based on previous performance of the groundwater treatment system. These interim effluent limitations consist of a maximum daily effluent concentration or value derived using effluent sample data summarized below and applying the statistical methodologies for estimating maximum concentrations identified in Chapter 3 of U.S. EPA's Technical Support Document (TSD). Derivation of these interim limitations is summarized below:

Interim Effluent Limitations						
	Arsenic (ug/L)	Barium (ug/L)	Iron (ug/L)	Manganese (ug/L)	Ammonia (mg/L)	Specific Conductance (µmhos/cm)
Number of Observations (n)	4	4	4	4	4	55
Minimum Concentration	< 12	14	120	ND	ND	133
Maximum Concentration	21	340	1,100	88	2.5	1,600
Coefficient of Variation ¹	0.6	0.6	0.6	0.6	0.6	0.3
Multiplier ²	4.7	4.7	4.7	4.7	4.7	1.6
Projected Daily Maximum Effluent Concentration ³	99	1,598	5,170	414	11.8	2,560

Footnotes:

¹ A default CV of 0.6 was used where the number of observations was less than 10.

² The multiplying factor (for 99% confidence level and 99% probability basis) is dependent on the coefficient of variation (CV) and number of reported effluent results (From Table 3-1 of the U.S. EPA Technical Support Document for Water Quality-based Toxics Control).

³ The projected Daily Maximum Effluent Concentration is determined by multiplying the maximum detected concentration with a reasonable potential multiplying factor that accounts for statistical variation.

11. This time schedule does not exceed five years. Actions can be taken to correct the violations that would otherwise be subject to mandatory penalties under CWC Section 13385(h) and (i), and the Discharger can take reasonable measures to achieve compliance within five (5) years from the date the waste discharge requirements were required to be reviewed pursuant to CWC Section 13380.
12. CWC Section 13385(j)(3) requires the Discharger to prepare and implement a pollution prevention plan pursuant to CWC Section 13263.3.
13. The California Water Code (CWC) Section 13385(h) and (i) require the Regional Board to impose mandatory minimum penalties upon dischargers that violate certain effluent limitations. CWC Section 13385(j) exempts certain violations from the mandatory minimum penalties. CWC Section 13385(j)(3) exempts the discharge from mandatory minimum penalties *“where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300, if all the [specified] requirements are met.”*
14. Compliance with this TSO exempts the Discharger from mandatory penalties for violations of effluent limitations for arsenic, specific conductance, barium, iron, manganese, and ammonia only, in accordance with CWC Section 13385(j)(3).
15. On 21 October 2005, in Sacramento, California, after due notice to the Discharger and all other affected persons, the Board conducted a public hearing at which evidence was received to consider a Time Schedule Order under California Water Code Section 13300 to establish a time schedule to achieve compliance with waste discharge requirements.
16. Since the adoption of Order R5-2005-0144 and Time Schedule Order (TSO) R5-2005-0145, the Discharger has performed monitoring studies to confirm the source of the constituents listed under the TSO, and to determine the ability of the treatment system discharge to meet the limits of Order R5-2005-0144. As a result, the Discharger is able to comply with the final effluent limits for ammonia, iron, manganese, specific conductance, hexavalent chromium, and mercury. However, the discharge continues to exceed the final effluent limits in Order R5-2005-0144 for arsenic and barium.
17. In response to Order R5-2005-0144 and TSO R5-2005-0145, the Discharger performed a mixing zone study and submitted the results to the Regional Board 17 November 2009. The mixing zone study concludes that a mixing zone may be appropriate for arsenic and barium. A dilution credit based on an approved mixing zone will lead to compliance with the arsenic and barium effluent limitations. .
18. Order No. R5-2010-0011 was adopted on 28 January 2010, which amended TSO No. R5-2005-0145 extending the compliance date for arsenic and barium to 21 October 2010 and requiring the Discharger to meet interim effluent limitations for arsenic and barium until the Discharger achieves full compliance with its current or modified effluent limitations for arsenic and barium. The compliance date was extended to allow the Regional Board to review the mixing

zone study and, if appropriate, amend the water quality-based effluent limits for arsenic and barium in Order No. R5-2005-0144, as appropriate.

19. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with California Water Code Section 15321 (a)(2), Title 14, of the California Code of Regulations. The modification of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000, et seq.), in accordance with CWC section 13389 and sections 15061(b)(3) and 15321(a)(2), Title 14, of the California Code of Regulations.
20. Any person adversely affected by this action of the Board may petition the State Water Resources Control Board to review this action. The petition must be received by the State Water Resources Control Board, Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

IT IS HEREBY ORDERED THAT:

1. Pursuant to California Water Code Section 13300, the Lincoln Center Environmental Remediation Trust shall comply with the following time schedule to ensure compliance with the arsenic, specific conductance, barium, iron, manganese, and ammonia effluent limitations contained in WDR's Order No. R5-2005-0144 as described in the above Findings:

<u>Task</u>	<u>Compliance Date</u>
Compliance Workplan/Implementation Schedule	15 March 2006
Prepare and Submit Pollution Prevention Plans ¹	15 July 2006
Compliance Progress Reports ²	Semi-Annual Due 15 January and 15 July
<u>Full Compliance for Specific Conductance, Iron, Manganese and Ammonia</u>	1 March 2010
Full Compliance for Arsenic and Barium	21 October 2010

¹ Plan shall be prepared for all constituents listed above and shall meet the requirements specified in CWC Section 13263.

² Reports shall detail steps implemented toward achieving compliance with WDR's limitations, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date.

2. Effluent from the groundwater treatment system shall not exceed the following interim performance-based limits:

<u>Constituents</u>	<u>Units</u>	<u>Daily Maximum</u>
Arsenic (total recoverable)	µg/L	99
	lbs/day ¹	0.36
Barium (total recoverable)	mg/L	1.6
	lbs/day ¹	5.7
Iron (total recoverable)	mg/L	5.2
	lbs/day ¹	19
Manganese (total recoverable)	µg/L	420
	lbs/day ¹	1.5
Ammonia (as N)	mg/L	12
	lbs/day ¹	43
<u>Specific Conductance</u>	µmhos/cm	2,560

¹ Based upon a daily design treatment capacity of 0.43 mgd.

3. If, in the opinion of the Executive Officer, the Lincoln Center Environmental Remediation Trust fails to comply with the provisions of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement.

I, THOMAS R. PINKOS, 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 21 October 2005 and amended on 28 January 2010.

THOMAS R. PINKOS, Executive Officer