California Regional Water Quality Control Board
Santa Ana Region

June 4, 2004

STAFF REPORT

ITEM: 5

SUBJECT: Waste Discharge Requirements, Metropolitan Water District of Southern California, Inland Feeder Project, San Bernardino County, Order No. R8-2004-0048, NPDES No. CA8000394

DISCUSSION:

On April 9, 1999, the Regional Board adopted Order No. 99-21, NPDES No. CA8000394, for the discharge of wastes associated with the construction of the Inland Feeder Project by the Metropolitan Water District of Southern California. Order No. 99-21 regulated the discharge of wastes from five discharge outfalls, as shown in the following table.

Discharge Serial No.	**Discharge Location**	**Latitude**	**Longitude**	**Affected Receiving Water**	**Flow Rates (MGD)**
001	Arrowhead West Tunnel	34°11'	117°16	Tributary to East Twin Creek	1.0
002	Arrowhead East Tunnel	34°08'	117°11'	City Creek	3.0
003	Riverside-Badlands Tunnel (Live Oak Facility)	34°00'	117°07'	Yucaipa Creek	0.35
004	Riverside-Badlands Tunnel (San Timoteo Facility)	33°59'	117°07'	San Timoteo Creek	0.6
005	Riverside-Badlands Tunnel (Gilman Springs Portal Facility)	33°56'	117°07'	Tributary to San Jacinto River	0.6

On January 19, 2001, Order No. 99-21 was amended to increase the amount of discharge flows at Discharge Serial No. 004 and 005, Riverside-Badlands Tunnel, from 0.6 million gallons per day (MGD) to 1.6 MGD and 2.82 MGD, respectively.

On September 26, 2001, Order No. 99-21 was again amended to increase the amount of discharge flows at Discharge Serial No. 003 and 004, Riverside-Badlands Tunnel and to add a new Discharge Serial No. 006, Riverside-Badlands Tunnel (Opal Avenue Portal Facility).

On July 7, 1999, the Executive Officer issued Cleanup and Abatement Order No. 99-61, requiring the discharger to abate discharges of waste that exceeded the pH limitation of Order No. 99-21, and to submit a plan, including a time schedule, to offset discharges of total dissolved solids (TDS) in excess of Bunker Hill II Groundwater Subbasin water quality objectives. On December 21, 2000, the Executive Officer accepted the discharger's proposed offset program, which entails extraction of high TDS groundwater from the Bunker Hill II Groundwater Subbasin, and export of this water from the subbasin (and the Santa Ana Region) via the Santa Ana Regional Interceptor (SARI line). MWD is also obligated to supply or purchase an equivalent amount of high quality water for replacement (basin recharge) to maintain water quality and protect beneficial uses. Pursuant to the terms of the approved offset, MWD will extract and export 350,240 pounds of TDS. As of November 2003, approximately 130,710 pounds of salt have been removed leaving 216,199 to be removed.

The 2001 amendment of Order 99-21 added a provision requiring MWD to implement the TDS offset program as approved by the Executive Officer on December 21, 2000 and to revise Monitoring and Reporting Program No. 99-21 to include monitoring and reporting of the TDS offset. On March 5, 2004, the discharger submitted a renewal application to continue the discharge of wastewater from 2 separate discharge outfalls associated with the construction of the Inland Feeder Project (Arrowhead Tunnel West (East Twin Creek) and Arrowhead Tunnel East (City Creek)). Discharges from Discharge Serial 003 (Riverside-Badlands Tunnel/Live Oak Canyon), Discharge Serial 004 (Riverside-Badlands Tunnel/San Timoteo Canyon), Discharge Serial 005 (Riverside-Badlands Tunnel/Gilman Springs Road and Highway 60) and Riverside-Badlands Tunnel (Opal Avenue) have ceased because there are no longer construction dewatering activities occurring at these sites.

The Inland Feeder Project is a water pipeline construction project that will extend from the State Water Project facilities in the San Bernardino Mountains to the Colorado River Aqueduct in San Jacinto. Sections of the pipeline will pass through or near the San Bernardino National Forest and the communities of Highland, Yucaipa, San Bernardino, Redlands, Riverside, Perris, Moreno Valley, and San Jacinto Valley. The 43.5-mile pipeline system will consist of approximately 18 miles of 12-foot diameter tunnels and 25.5 miles of 12-foot diameter pipelines. The Inland Feeder Project was divided into seven contracts. These waste discharge requirements cover contracts associated with the tunneling operations at Contract No. 1 and 2. Contract 1, Arrowhead Tunnel West, begins at the Devils Canyon Power Plant. Approximately 20,700 linear feet of 12-foot diameter tunnel will be bored though the San Bernardino Mountains to Waterman Canyon and Highway 18. Beginning at Waterman Canyon, a 1-mile segment of 12-foot diameter steel pipeline will be laid. Contract 2, Arrowhead East Tunnel, will continue the pipeline and include approximately 29,200 linear feet of 12-foot diameter tunnel. This project begins at Strawberry Creek and exits the mountains at a portal adjacent to Highway 330, north of the City of Highland. The discharger has requested that until tunnel boring operations are completed at Arrowhead West and East Tunnels, discharges to Discharge Serial No. 001 (flow rate 1.0 MGD) be combined with discharges from Discharge Serial No. 002 (flow rate 3.0 MGD) to allow a combined flow rate of 4.0 MGD to a tributary of East Twin Creek. Once tunnel boring operations are complete, further discharges will be to both East Twin Creek and City Creek.

A tunnel-boring machine is utilized to complete mining activities. Once the machine completes a 5-foot mining push, an initial liner is erected to stabilize the ground. The tunnel's initial liner is made up of 6 segmental concrete sections that when erected make a ring. This liner is designed to be virtually watertight by utilizing a bolted and gasketed technology to prevent groundwater intrusion. In addition, an extensive pre-excavation grouting program is being implemented which pumps cement grout ahead of the tunnel boring machine in un-mined ground, thus reducing and/or eliminating groundwater intrusion at the tunnels rock face. The machine grout is placed between the initial liner and the natural rock to insure the restriction of groundwater infiltration. However, some groundwater can be expected to enter the tunnel in limited amounts at the tunnel face and behind the tunnel boring machine shield. Any such water is then dewatered from the tunnel.

The discharger proposes the use of polymers and muriatic acid to control suspended solids and pH in the discharge. The dewatered groundwater flows through settling ponds prior to being discharged to surface water. Dewatering activities will cease upon completion of construction.

Discharges resulting from Contract 1 will be directed to a tributary of East Twin Creek, which is tributary to Reach 4 of the Santa Ana River. Discharges resulting from Contract 2 will be directed to City Creek, also a tributary of the Santa Ana River, Reach 4.

The proposed TDS limit for the discharge is based on the Basin Plan water quality objective for the Bunker Hill II Groundwater Subbasin. To implement the Basin Plan, the proposed Order specifies a TDS limit of 290 milligrams per liter (mg/l), and a TDS mass limit based on the volumetric flows at each discharge point.

The Basin Plan recognizes that strict compliance with the TDS limits may be difficult to achieve. The Basin Plan describes the regulatory approach the Regional Board uses to address such situations. The Board incorporates offset provisions in waste discharge requirements whereby dischargers can participate in approved programs to offset TDS discharges in excess of specified TDS limits. As stated above, the discharger is currently implementing the TDS offset program approved by the Executive Officer on December 21, 2000 (described above) For prior TDS discharges in excess of limits. This Order includes TDS offset provision that apply to future discharges.

The intermittent beneficial uses of City Creek and East Twin Creek in the areas of the discharges include groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat.

The beneficial uses of Reach 4 of the Santa Ana River include groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat and wildlife habitat.

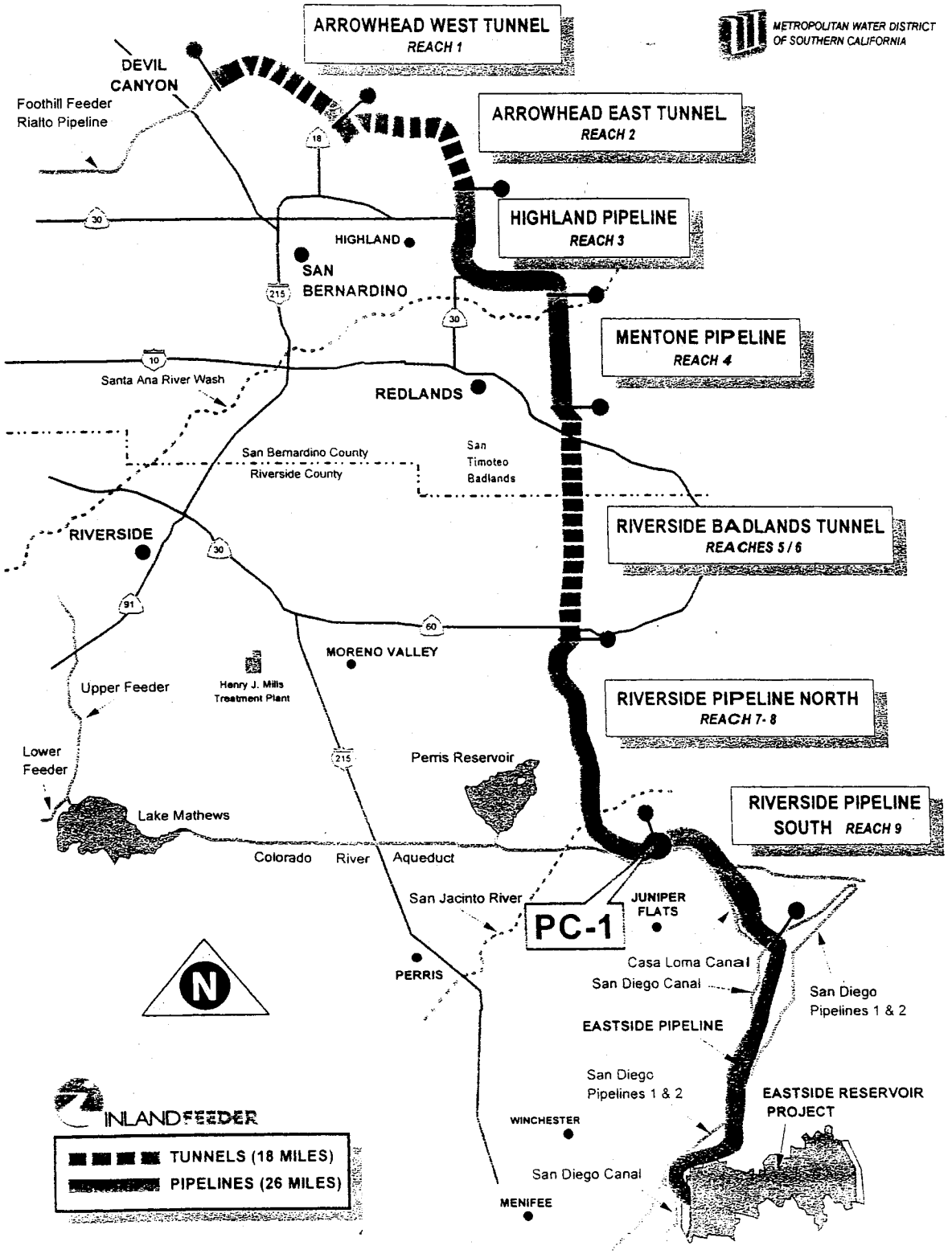
RECOMMENDATION:

Adopt Order No. R8-2004-0048, NPDES No. CA8000394 as presented.

Comments were solicited from the following agencies:

U.S. Environmental Protection Agency, Permits Issuance Section (WTR-5) - Doug Eberhardt
U.S. Army District, Los Angeles, Corps of Engineers - Regulatory Branch
U.S. Fish and Wildlife Service - Carlsbad
State Water Resources Control Board, Office of the Chief Counsel – Jorge Leon
State Water Resources Control Board, Division of Water Quality – Jim Maughan
State Department of Water Resources - Glendale
State Department of Fish and Game - Long Beach
State Department of Health Services - San Bernardino
Riverside County Environmental Health Services – Sam Martinez
Riverside County Flood Control and Water Conservation District – Jason Uhley
San Bernardino County Department of Environmental Health Services – Daniel Avera
San Bernardino Co. Transportation/Flood Control Dept, Water Conservation Div. - Naresh Varma
Law Office of Thomas E. Luebben - James K. Hansen
Orange County Coastkeeper – Garry Brown
South Coast Air Quality Management District – Barry R. Wallerstein
Lawyers for Clean Water C/c San Francisco Baykeeper

Attachment "A"



INLAND FEEDER PROGRAM

8/28/98

California Regional Water Quality Control Board
Santa Ana Region

Order No. R8-2004-0048
NPDES No. CA8000394

Waste Discharge Requirements
for
Metropolitan Water District of Southern California
Inland Feeder Project, Riverside and San Bernardino County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Board), finds that:

1. The Metropolitan Water District of Southern California (hereinafter discharger or MWD) is constructing a 43.5-mile system of tunnels and pipelines known as the Inland Feeder Project. The Inland Feeder Project will extend from the State Water Project facilities in the San Bernardino Mountains to the Eastside Reservoir Project (now Diamond Valley Lake), at the Colorado River Aqueduct in San Jacinto.

2. On April 9, 1999, the Board adopted Order No. 99-21, NPDES No. CA8000394, prescribing waste discharge requirements for MWD for the discharge of wastewater associated with the construction of the Inland Feeder Project. Order No. 99-21 expired on April 1, 2004 and was not administratively extended. On March 5, 2004, the discharger submitted an application for renewal of the NPDES permit.

3. Order No. 99-21 regulated the discharge of wastes from five discharge outfalls: Discharge Serial No. 001- Arrowhead West Tunnel; Serial No. 002- Arrowhead East Tunnel; Serial No. 003- Riverside-Badlands Tunnel (Live Oak Facility); Serial No. 004- Riverside Badlands Tunnel (San Timoteo Facility); Serial No. 005- Riverside-Badlands Tunnel (Gilman Springs Portal Facility).

4. On July 7, 1999, the Executive Officer issued Cleanup and Abatement Order No. 99-61 requiring the discharger to abate discharges of waste that exceeded the pH limitation of Order No. 99-21, and to submit a plan, including a time schedule, to offset discharges of total dissolved solids (TDS) in excess of Bunker Hill II Groundwater Subbasin water quality objectives. Cleanup and Abatement Order No. 99-61 address violations in prior Order No. 99-21. Since Order No. 99-21 has expired, Cleanup and Abatement Order No. 99-61 is no longer valid. This Order rescinds Cleanup and Abatement Order No. 99-61 and Order No. 99-21. However, this Order requires the discharger to implement the previously approved TDS offset plan (see Finding 5., below) and to offset any further discharges in excess of TDS limits specified in this Order. Furthermore, this Order has incorporated the monitoring requirements specified in the Cleanup and Abatement Order No. 99-61.

TENTATIVE

5. The discharger submitted a proposed TDS offset plan as required in Cleanup and Abatement Order No. 99-61. On December 21, 2000, the Executive Officer accepted the discharger's proposed offset program, which entails extraction of high TDS groundwater from the Bunker Hill II Groundwater Subbasin, and export of this water from the subbasin (and the Santa Ana Region) via the Santa Ana Regional Interceptor (SARI line). MWD is also obligated to supply or purchase an equivalent amount of high quality water for replacement (basin recharge) to maintain water quality and protect beneficial uses. Pursuant to the terms of the approved offset, MWD will extract and export 350,240 pounds of TDS. As of November 2003, approximately 130,710 pounds of salt have been removed leaving 216,199 to be removed. .

6. On January 19, 2001, Order No. 01-14 was adopted, amending Order No. 99-21 to increase the amount of discharge flows at Discharge Serial No. 004 and 005, Riverside-Badlands Tunnel, from 0.6 million gallons per day (MGD) to 1.6 MGD and 2.82 MGD, respectively.

7. On September 26, 2001, Order No. 01-88 was adopted, amending Order No. 99-21 to increase the amount of discharge flows at Discharge Serial No. 003 and 004, Riverside-Badlands Tunnel and to add a new Discharge Serial No. 006, Riverside-Badlands Tunnel (Opal Avenue Portal Facility). Amending Order 01-88 also added a provision requiring MWD to implement the TDS offset program as approved by the Executive Officer on December 21, 2000 and to revise Monitoring and Reporting Program No. 99-21 to include monitoring and reporting of the TDS offset.

8. The discharger has advised that construction activities for the Riverside-Badlands Tunnel portion of the project have been completed. Therefore, discharges from Discharge Serial No. 003, 004, 005 and 006 have ceased and these outfalls are no longer required.

9. The discharger has requested that until tunnel boring operations are completed at Arrowhead West and East Tunnels, discharges to Discharge Serial No. 001 (flow rate 1.0 MGD) be combined with discharges from Discharge Serial No. 002 (flow rate 3.0 MGD), respectively, to allow a combined flow rate of 4.0 MGD. The discharge will be into a tributary of East Twin Creek. Once tunnel boring operations are complete, further discharges will be to both East Twin Creek and City Creek.

10. The following table lists the discharge points and affected receiving waters:

Discharge Serial No.	Discharge Location	Latitude	Longitude	Affected Receiving Water	Flow Rates (MGD)
001	Arrowhead West Tunnel	34°11'	117°16'	Tributary to East Twin Creek	4.0[1]
002	Arrowhead East Tunnel	34°08'	117°11'	City Creek	3.0[2]

11. This Order continues to regulate wastewater discharges associated with tunnel boring activities (groundwater from dewatering operations and tunnel boring machine-cooling water) at the two locations idenitifed above.

12. This Order includes effluent limits for total dissolved solids (TDS) based on the Bunker Hill II Groundwater Subbasin water quality objectives and a TDS mass limit based on the volumetric flows at each discharge point. The Order also includes an offset provision whereby the discharger can offset TDS discharges in excess of the TDS limit in lieu of strict conformance with those limits.

13. A Water Quality Control Plan (Basin Plan) became effective on January 24, 1995. The Basin Plan contains beneficial uses and water quality objectives for waters in the Santa Ana Region.

14. The intermittent beneficial uses of City Creek and East Twin Creek in the area of the discharge include:

    a. Municipal and domestic supply,
    b. Groundwater recharge,
    c. Water contact recreation,
    d. Non-contact water recreation,
    e. Warm freshwater habitat, and
    f. Wildlife habitat.

15. East Twin Creek and City Creek are tributary to Reach 4 of the Santa Ana River, the beneficial uses of which include:

    a. Groundwater recharge,
    b. Water contact recreation,
    c. Non-contact water recreation,
    d. Warm freshwater habitat, and
    e. Wildlife habitat.

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[1] *Until tunneling operations are completed, Arrowhead East Tunnel discharges will be diverted to Discharge Serial No. 001.*

[2] *Discharges to Discharge Serial No. 002 (City Creek) will commence again after the tunneling operations for the Arrowhead East Tunnel are completed.*

16. The requirements contained in this Order are necessary to implement the Basin Plan.

17. Effluent limitations and national standards of performance established pursuant to Section 301, 302, 303(d), 304, 306, and 307 of the Federal Clean Water Act and amendments thereto are applicable to the discharge.

18. The Regional Board has considered antidegradation pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16 and finds that this discharge is consistent with those provisions.

19. In accordance with Water Code Section 13389, the adoption of Order No. R8-2004-0048, NPDES No. CA8000394, is exempt from those provisions of the California Environmental Quality Act contained in Chapter 3 (commencing with Section 21100), Division 13 of the Public Resources Code.

20. The Regional Board has notified the discharger and other interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written views and recommendations.

21. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. DISCHARGE SPECIFICATIONS

1.a. The discharge of wastewater at Serial No. 001 shall not exceed constituent concentrations or mass emission rates in excess of the following limits:

Constituents	Maximum Concentration	Mass Emission Rates[3] (lbs/day)
Oil and Grease	15 mg/l	500
Total Dissolved Solids	290 mg/l	9,674
Total Suspended Solids	75 mg/l	2502

[3] *Mass emission rates shown in this table are based on 4 mgd flow.*

1.b. The discharge of wastewater at Serial No. 002 shall not exceed constituent concentrations or mass emission rates in excess of the following limits:

Constituents	Maximum Concentration	Mass Emission Rates[4] (lbs/day)
Oil and Grease	15 mg/l	375
Total Dissolved Solids	290 mg/l	7256
Total Suspended Solids	75 mg/l	1877

2. The pH of the discharge shall be within 6.5 pH and 8.5 pH units.

3. There shall be no visible oil and grease in the discharge.

4. The total dissolved solids limits in Discharge Specifications A.1.a. and A.1.b. apply if the discharger does not implement a program approved by the Executive Officer to offset discharges in excess of the effluent limits. (See also Provisions D.5, below.)

B. RECEIVING WATER LIMITATIONS

1. The discharge of wastes shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or the State Board, as required by the Federal Clean Water Act and regulations adopted thereunder.

2. The discharge shall not:

   a. Cause coloration of the receiving waters which causes a nuisance or adversely affects beneficial uses.

   b. Result in deposition of oil, grease, wax or other materials in concentrations which result in a visible film or in coating objects in the water, or which cause a nuisance or affect beneficial uses.

   c. Cause an increase in the amounts of suspended or settleable solids of the receiving waters which will cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

   d. Contain taste or odor producing substances at concentrations which cause a nuisance or adversely affect beneficial uses.

   e. Contain radioactive materials in concentrations which are deleterious to human, plant or animal life.

   f. Cause the depletion of the dissolved oxygen concentration below 5.0 mg/l in the receiving water. In addition, the waste discharge shall not cause the median dissolved oxygen concentration to fall below 85% of saturation or the 95th percentile concentration to fall below 75% of saturation within a 30-day period.

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4 *Mass emission rates shown in this table are based on 3 mgd flow.*

g. Raise the temperature of the receiving waters above 90°F (32°C), which normally occurs during the period of June through October, or above 78°F (26°C) during the rest of the year.

5. Pollutants not specifically mentioned and limited in this Order shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health.

C. PROHIBITIONS

1. The discharge of any substances in concentrations toxic to animal or plant life is prohibited.

2. The discharge of oil, trash, industrial waste sludge, or other wastes directly to surface waters or in any manner which could ultimately affect surface waters is prohibited.

D. PROVISIONS

1. This Order shall become effective on the date of adoption. This Order shall also serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the CWA, or amendments thereto, that shall become effective 10 days after the date of adoption, provided the Regional Administrator of the EPA has no objection. If the Regional Administrator objects to its issuance, this Order shall not serve as an NPDES permit until such objection is withdrawn.

2. Neither the treatment or the discharge of wastes shall create, or threaten to create, a nuisance or pollution as defined in Section 13050 of the California Water Code.

3. This Order expires on June 1, 2009, and the discharger must file a report of waste discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

4. The discharger shall comply with Monitoring and Reporting Program No. R8-2004-0048 as issued by the Executive Officer. Revision of this monitoring and reporting program by the Executive Officer may be necessary to confirm that the discharger is in compliance with the requirements and provisions contained in this Order. Revisions may be made at any time during the term of this Order, and may include an increase in the number of parameters to be monitored, the frequency of monitoring or the number and size of samples to be collected. Any increase in the number of parameters to be monitored, the frequency of the monitoring or the number and size of samples to be collected may be reduced back to the levels specified in the original monitoring and reporting program at the discretion of the Executive Officer.

5. The discharger shall implement the TDS offset program approved by the Executive Officer on December 21, 2000[5], unless an alternative offset program is proposed and approved. As specified in the approved program, the discharger shall extract high TDS groundwater from the Bunker Hill II Groundwater Subbasin, and export this water from the Bunker Hill Basin via the Santa Ana Regional Interceptor (SARI line). The agreed upon offset ratio is 1:1.1. MWD shall supply or purchase an equivalent amount of high quality water for replacement (basin recharge) to maintain water quality and protect beneficial uses.

6. Order No. 99-21 and Cleanup and Abatement Order No. 99-61 is hereby rescinded.

7. The discharger shall maintain a copy of this Order at each discharge location so that it is available to site operating personnel at all times. Key operating personnel shall be familiar with its content.

8. The discharger must comply with all of the terms, requirements and conditions of this Order. Any violation of this Order constitutes a violation of the California Water Code and may constitute a violation of the Clean Water Act and its regulations, and is grounds for enforcement action, termination of the Order, revocation and re-issuance of the Order, denial of an application for re-issuance of the Order; or a combination thereof.

9. The discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

10. The discharger shall take all reasonable steps to minimize any adverse impact to receiving waters resulting from noncompliance with any effluent limitations specified in this Order, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

11. All discharges shall comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding discharges to storm drain systems or other courses under their jurisdiction.

12. In the event of any change in control or ownership of land or waste discharge facility presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this Board.

13. This Order is not transferable to any person except after notice to the Regional Board. The Regional Board may require modification or revocation and re-issuance of this Order to change the name of the discharger and incorporate such other requirements as may be necessary under the Clean Water Act.

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5 *MWD proposal titled "Revised Total Dissolved Solids Offset Proposal and Implementation Schedule" dated November 6, 2000.*

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

15. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local laws, nor guarantee the discharger a capacity right in the receiving waters.

16. The Regional Board, EPA, and other authorized representatives shall be allowed:

    a) Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
    b) Access to copy any records that are kept under the conditions of the order;
    c) To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
    d) To photograph, sample and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the Clean Water Act.

E. PERMIT RE-OPENING, REVISION, REVOCATION, AND RE-ISSUANCE

1. This Order may be modified, revoked and reissued, or terminated for cause.

2. The Order may be reopened to address any changes in State or federal plans, policies or regulations that would affect the quality requirements for the discharge.

3. This Order may be reopened to include effluent limitations for pollutants determined to be present in the discharge in concentrations that pose a reasonable potential to cause or contribute to violations of water quality standards.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on June 4, 2004.

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Gerard J. Thibeault
Executive Officer

California Regional Water Quality Control Board
Santa Ana Region

Monitoring and Reporting Program No. R8-2004-0048
NPDES No. CA8000394
for
Metropolitan Water District of Southern California
Inland Feeder Project, Riverside and San Bernardino County

A. MONITORING AND REPORTING REQUIREMENTS

1. All sampling and sample preservation shall be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association).

2. All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 (latest edition) "Guidelines Establishing Test Procedures for the Analysis of Pollutants," promulgated by the United States Environmental Protection Agency (EPA), unless otherwise specified in this monitoring and reporting program (M&RP). In addition, the Regional Board and/or EPA, at their discretion, may specify test methods that are more sensitive than those specified in 40 CFR 136.

3. All analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services or EPA or at laboratories approved by the Regional Board's Executive Officer.

4. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. In the event that continuous monitoring equipment is out of service for greater than a 24-hour period, the discharger shall obtain a representative grab sample each day the equipment is out of service. The discharger shall correct the cause(s) of failure of the continuous monitoring equipment as soon as practicable. In its monitoring report, the discharger shall specify the period(s) during which the equipment was out of service and if the problem has not been corrected, shall identify the steps that the discharger is taking or proposes to take to bring the equipment back into service and the schedule for these actions.

5. Monitoring and reporting shall be in accordance with the following:

   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

   b. The results of any analysis of samples taken more frequently than required at the locations specified in this M&RP shall be reported to the Regional Board.

   c. Whenever the discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharge monitoring report specified by the Executive Officer.

TENTATIVE

6. The discharger shall assure that records of all monitoring information are maintained and accessible for a period of at least five years from the date of the sample, report, or application. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or by the request of the Regional Board at any time. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling, and/or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used;
   f. All sampling and analytical results;
   g. All monitoring equipment calibration and maintenance records;
   h. All original strip charts from continuous monitoring devices;
   i. All data used to complete the application for this permit; and,
   j. Copies of all reports required by this permit.

7. Weekly samples shall be collected on a representative day of each week.

8. Monthly samples shall be collected on a representative day of each month.

9. Bi-annual samples shall be collected on a representative day of January and July.

10. All samples shall be representative of the waste discharged under the conditions of peak load.

11. A sampling station shall be established for each point of discharge. These stations shall be located where representative samples can be obtained before the discharge mixes with the receiving waters. The following shall constitute the effluent monitoring program:

Constituent	**Type of Sample**	**Units**	**Minimum Frequency of Sampling and Analysis**
Flow	Flow Meter	GPD	Daily
pH	Grab	pH Units	Weekly
Oil and Grease	Grab	mg/l	Weekly
Suspended Solids	Grab	mg/l	Weekly
Total Dissolved Solids (discharged)	Grab	mg/l	Weekly

Constituent	Type of Sample	Units	Minimum Frequency of Sampling and Analysis
Total Dissolved Solids (Offset)	Grab	mg/l	Weekly (see also Section A.12. & A.13., below)
Toxicity Testing	Grab	TUc	Upon initiation of the discharge and Bi-Annually thereafter [1] (see Section B., below)

12. TDS Offset Monitoring and Reporting

    a. The discharger shall monitor the total monthly extracted volume of water intended to offset excess TDS discharges.

    b. A representative grab sample of the extracted water shall be taken and tested for conductivity monthly. A conductivity to TDS conversion factor shall be established monthly.

    c. Monthly reports shall be submitted and shall include the following

        1) Volume of extracted water for offset,

        2) Conductivity and conductivity/TDS conversion factor,

        3) Total mass of TDS exported for the month in relation to the TDS mass being offset, and

        4) If no offset occurs during the monitoring period, a letter to that effect shall be submitted in lieu of a monitoring report. The letter shall include an explanation of the lack off offset during the monitoring period and shall identify when the offset will be provided.

13. Submit monthly remedial action progress reports describing actions implemented to abate the TDS discharges in excess of Bunker Hill II groundwater subbasin objective. The reports shall be submitted by the 15th of each month, and shall describe activities occurring in the prior month.

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[1] *Toxicity testing shall also be conducted within 24 hours of the use of any new grouting material or the introduction of any new wastewater treatment chemical to the discharge.*

B. TOXICITY MONITORING

1. The discharger shall conduct critical life stage chronic toxicity testing in accordance with Method 1002.0 - Survival and Reproduction test for water flea, Ceriodaphnia dubia as specified in "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," Fourth edition, Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency 2002, Cincinnati, Ohio (October 2002, EPA-821-R-02-013).

2. A minimum of one chronic toxicity test shall be conducted on composite samples every six months.

3. The presence of chronic toxicity shall be estimated as specified in Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. EPA-821-R-02-013.

4. Results shall be reported in TUc, where TUc = 100/NOEC or 100/Icp or ECp (in percent effluent). The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test that causes no observable adverse effect on the tests organisms (e.g., the highest concentration of toxicant to which the values for the observed responses are not statistically significant different from the controls). The inhibition concentration (IC) is a point estimate of the toxicant concentration that causes a given percent reduction in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (the EPA Interpolation Method). The effective concentration (EC) is a point estimate of the toxicant concentration that would cause a given percent reduction in quantal biological measurement (e.g., larval development, survival) calculated from a continuous model (e.g., probit).

5. Additional Testing Requirements

   a. A series of at least five dilutions and a control will be tested. The series shall be within 60% to 100% effluent concentration.

   b. If organisms are not cultured in-house, concurrent testing with reference toxicants shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicants shall also be conducted using the same test conditions as the effluent toxicity test (e.g., same test duration, etc).

   c. If either of the reference toxicant test or the effluent tests do not meet all test acceptability criteria as specified in the manual[2], then the discharger must re-sample and re-test within 14 days or as soon as the discharger receives notification of failed tests.

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[2] *Refers to USEPA Manual "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. EPA-821-R-02-013.*

d. Control and dilution water should be receiving water or lab water, as appropriate, as described in the manual. If the dilution water used is different from the culture water, a second control, using culture water shall also be used.

6. Quality Assurance/Control:

a. A quality assurance/quality control (QA/QC) program shall be instituted to verify the results of the effluent toxicity monitoring program. The QA/QC program shall include but shall not be limited to the following: (1) Selection of an independent testing laboratory; (2) Approval by the Regional Board's Executive Officer or Executive Officer's designee of the independent testing laboratory; (3) Once during the year, the discharger shall split samples with the independent laboratory for conducting chronic toxicity testing; (4) Results from the independent laboratory shall be submitted to the Regional Board and the discharger for evaluation; (5) The discharger shall review the test acceptability criteria in accordance with the EPA test protocols, EPA/600/491/002 or EPA 600/4-90/027F.

b. Results from the independent laboratory of the annual QA/QC split samples are to be used for Quality Assurance/Quality Control (QA/QC) purposes only and not for purposes of determining compliance with other requirements of this Order.

c. The use of alternative methods for measuring chronic toxicity may be considered by the Executive Officer on a case-by-case basis. The use of a different test species, in lieu of conducting the required test species, may be considered/approved by the Executive Officer on a case-by-case basis upon submittal of the documentation supporting dischargers determination that a different species is more sensitive and appropriate.

b. Reporting: Results of all toxicity testing shall be reported within one month following the monitoring period in accordance with "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", Fourth edition, Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency 2002, Cincinnati, Ohio (October 2002, EPA-821-R-02-013).

C. REPORTING

1. Within 24 hours of finding any discharge that is in violation of any term or condition of this order, the discharger shall report their findings to the Regional Board

2. Monitoring reports shall be submitted by the 30th day of each month. The monitoring reports shall cover the previous month's monitoring activities and shall include:

a. The results of all laboratory analyses for constituents required to be monitored,

b. The daily flow data, and

c. A summary of the month's activities.

3. If no discharge occurs during the previous monitoring period, a letter to that effect shall be submitted in lieu of a monitoring report.

4. For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for implementing the proposed actions.

5. The discharger shall submit monthly reports detailing the total dissolved solids (TDS) offset program approved by the Executive Officer.

6. All reports shall be signed by a responsible officer or duly authorized representative of the discharger and shall be submitted under penalty of perjury.

Ordered by_____

Gerard J. Thibeault
Executive Officer

June 4, 2004