CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

ORDER NO. R8-2003-0020

WASTE DISCHARGE REQUIREMENTS FOR CITY OF SAN BERNARDINO WATER RECLAMATION PLANT CLOSED BRINE DISPOSAL FACILITY SAN BERNARDINO COUNTY

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

1. The City of San Bernardino (hereinafter discharger), owns two brine evaporation ponds, which were operated from 1975 to 1986 at its Water Reclamation Plant (WRP) located at 399 Chandler Avenue, in the City of San Bernardino. The WRP currently treats and discharges approximately 26 million gallons per day of secondary treated municipal wastewater. The brine ponds are located in a portion of the NW¼ of Section 22, T1S, R4W, San Bernardino Baseline & Meridian.

2. On November 14, 1975, the Board adopted Order No. 75-234 to regulate the discharge of brine wastes from local water conditioning companies to two concrete-lined evaporation ponds, North and South Ponds (see Attachment A of this Order). The discharge of brine wastes to the evaporation ponds ceased in December 1986. Subsequently, the City was required to conduct a subsurface investigation as part of a formal site closure as required under Title 27 of California Code of Regulations (27 CCR), §21400.

3. Subsurface soil and groundwater investigations in 1995 indicated significant brine-affected soils at least 46 feet deep beneath the brine ponds and high levels of total dissolved solids in the uppermost aquifer. Consequently, the City elected to close the brine ponds as a landfill in accordance with 27 CCR, §21400(b)(2)(A). In the September 1997 site closure plan, the City proposed to close the ponds by installing an impervious membrane liner over the existing concrete lining. This closure alternative would not only provide a closure cover to minimize water infiltration, it would also allow the City to reuse the ponds for temporary containment of emergency overflow from the Nitrogen Removal Facility (NRF) at the WRP in the event the NRF influent pump fails.

4. On May 5, 2000, the City submitted a letter of completion for the brine pond closure. The liner system installed consists of a 40-mil Hypalon liner[1] underlain by an 8-oz (per square yard) geotextile cushion.

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[1] Hypalon liners are chlorosulfonated polyethylene (CSPE) synthetic rubber flexible membranes.

5. On June 12, 2000, the City formally submitted its request to use the ponds for temporary containment of emergency overflow from the NRF at the WRP. On June 8, 2000, the Executive Officer of the Regional Board approved the formal closure of the brine ponds and authorized the use of these ponds for temporary containment of emergency overflow from the NRF.

6. Order No. 75-234 does not include any provisions or monitoring and reporting requirements for post-closure maintenance and reuse of the closed brine ponds (hereinafter Ponds). Therefore, the Board is revising Order No. 75-234 to prescribe these requirements for the ponds.

7. This Order requires the City to conduct a water quality monitoring program in accordance with 27 CCR, §20415 and §20420. In accordance with 27 CCR, §20420, a Water Quality Protection Standard (see Water Quality Monitoring C.1. of this Order) has been established for the closed brine ponds. Due to the existence of many production wells and the proposed dewatering wells for the San Bernardino Valley Water District's dewatering project in the proximity of and within the facility, the local groundwater flow direction and gradient may be affected and may vary from one monitoring period to the other. Therefore, the point of compliance, as specified in the monitoring and reporting program (M&RP No. R8-2003-0020), may change. A change in point of compliance must be discussed and justified in each monitoring report. It is also possible that a proposed dewatering well to be located directly downgradient of the brine ponds will dry up the monitored uppermost aquifer. The Executive Officer may revise M&RP No. RB8-2003-0020 based upon new information received.

8. The brine pond facility overlies the Bunker Hill II Groundwater Subbasin, the beneficial uses of which include:

   a. Municipal and domestic supply,
   b. Agricultural supply,
   c. Industrial service process, and
   d. Industrial process supplies.

9. Surface drainage from the facility is tributary to Reaches 4 and 5 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.

10. The project involves a Board action to prescribe waste discharge and post-closure maintenance requirements for the reuse of an existing, closed facility and as such, is exempt from provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15301, Chapter 3, Title 14 of the California Code of Regulations.

11. The Board has notified the discharger and interested parties of its intent to update waste discharge requirements for the facility, and has provided them with an opportunity to submit their written views and recommendations.

12. The Board, in a public meeting, heard and considered all comments pertaining to the adoption of this Order.

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, shall comply with the following:

A. DISCHARGE SPECIFICATIONS

1. The discharge of any liquid waste to the ponds other than the emergency overflow from the NRF is prohibited, unless such discharge has been authorized in advance by the Executive Officer of the Board.

2. The discharge of emergency overflow from the NRF to the Ponds and any post-closure use of the Ponds shall not cause pollution, nuisance, or adversely affect the beneficial uses of the ground and surface waters as established in the Basin Plan.

3. Any emergency overflow discharge <u>or</u> precipitation collected in the brine ponds shall be removed in a timely manner, within 96 hours after it was collected in the ponds.

4. A minimum of 24 inches of freeboard shall be maintained in the Ponds at all times. If the ponds' water level threatens to exceed the freeboard specification, water shall be removed from the ponds and properly disposed of.

B. PROVISIONS

1. The discharger shall comply with discharge specifications, provisions, and monitoring and reporting requirements of this Order immediately upon its adoption.

2. **Pond Post-closure Maintenance** - Periodic inspection of the Ponds shall be conducted in accordance with schedules listed in Table A of Monitoring & Reporting Program (M&RP) No. R8-2003-0020 to assess its condition, and to initiate any corrective actions necessary to maintain compliance with discharge specifications, above.

3. The Ponds shall be maintained continuously to minimize leakage to the subsurface.

4. Annually, by October 1, all repair and maintenance activities for the Ponds shall be completed.

5. Within sixty (60) days after the adoption of this Order, the discharger shall submit an inspection and maintenance plan for the Ponds for approval by the Executive Officer of the Regional Board. The closed brine pond inspection and maintenance plan shall discuss, at a minimum, the following programs:

   a. Brine pond inspection and maintenance schedules;
   b. Liner repair and maintenance procedures; and
   c. Reporting program.

6. **Groundwater Monitoring** - The discharger shall monitor groundwater in accordance with 27 CCR, §20415 and §20420 and with schedules listed in Table A of M&RP No. R8-2003-0020 to detect any release from the Ponds, to assess the extent of release and any changes in groundwater condition, and to evaluate the need for corrective action. Any changes to the monitoring program and Water Quality Protection Standard established under 27 CCR, §20420 shall be approved by the Executive Officer of the Regional Board.

7. Because pumping from a proposed downgradient dewatering well may dry out the uppermost aquifer, groundwater monitoring may become infeasible in the future. Therefore, within 60 days of adoption of this Order, the discharger shall submit a monitoring offset plan for approval by the Executive Officer.

8. Within 30 days of being unable to monitor groundwater, the discharger shall implement the approved monitoring offset plan.

9. The discharger shall permit Board staff:

   a. To enter, photograph, and inspect the facility where the Ponds are located;

   b. To copy any records required to be kept under terms and conditions of this Order; and

   c. To sample any discharges.

10. The discharger shall maintain a copy of this Order at the facility so as to be available at all times to facility operating and maintenance personnel.

11. Compliance with these requirements shall be evaluated based on the following:

    a. Periodic inspection by Board staff;

    b. Evaluation of the monitoring reports submitted in accordance with the closed brine pond monitoring and reporting program; and

    c. Any other relevant information.

12. The discharger may file a written request with the Executive Officer of the Board at any time, proposing any appropriate modifications to the brine pond monitoring and reporting program. This request must be accompanied by relevant supporting documents.

13. The discharger shall implement any changes to the revised facility monitoring and reporting program upon approval by the Executive Officer of the Board.

14. This Order may be reopened to address any changes in state or federal regulations, plans, or policies that govern the post-closure maintenance and water quality monitoring at closed brine facilities.

15. This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by a discharger for modification, revocation and reissuance, or termination of this Order, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

C. REPORTING REQUIREMENTS

1. **Unauthorized discharge from Ponds** - The discharger shall notify Board staff by telephone (909-782-4130) within 24 hours of any unauthorized release or discharge from the brine ponds. This notification shall be followed within 5 days by a written report, which must include the following information:

    a. The approximate date and time of the discharge;

    b. Flow rate and duration of the discharge;

    c. Any water sampling data, with chain of custody records;

    d. Cause of the discharge; and

    e. Description of corrective measures implemented.

    A summary report of all accidental discharges with water sample analytical results shall be included in the semi-annual site maintenance reports.

2. **Initial indication of a release from the Ponds in the groundwater** - The discharger shall notify the designated Regional Board staff in writing within five days after an initial release to groundwater, as determined through data analysis, is indicated. The discharger shall carry out the requirements of 27 CCR, §20420(j and k) and §20425, to retest and confirm the release, to evaluate the extent of the release, and to implement any necessary corrective action.

3. **Cap modification** - Any proposed modifications to the liner of the Ponds shall be submitted in writing to the Executive Officer of the Board for review and approval prior to implementation.

4. **Change in ownership** - In the event of any change in control or ownership of land or waste discharge facilities presently 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 immediately forwarded to the Board.

5. **Post-closure maintenance** - A brine pond maintenance report shall be submitted at least semi-annually. The report shall include at least the following:

   a. A summary of the condition of the brine pond liner, any deficiencies observed, and maintenance activities implemented for the monitoring period(s);

   b. A copy of the field inspection and maintenance log for the previous six months. The log shall include the date and time of each inspection, the individual conducting the inspection, and any observations noted and corrective actions recommended and implemented;

   c. A copy of the permanent log of all emergency overflow discharges to the Ponds for the previous six months. The log shall include date and time of each discharge event, the disposal resolution of liquid waste contained in the Ponds, and the liquid waste disposal date and time;

   d. The freeboard (in feet) of the Ponds; and

   e. An 11x17 inch (or larger) map of the Ponds, showing all identified deficient and repaired areas.

   The report may be combined and submitted with the groundwater monitoring report or it may be submitted as a separate report.

6. **Groundwater Monitoring** - Groundwater monitoring reports shall be submitted in accordance with the reporting schedule in Table A of M&RP No. R8-2003-0020, and shall contain, at least, the following information:

   a. A discussion of groundwater flow rate, direction, and elevation, measured quarterly, the hydraulic gradient, and the reasons for any change in groundwater flow direction;

   b. Site maps showing the quarterly groundwater elevations and flow direction for the monitoring period;

   c. A tabular summary, discussion, and interpretation of the analytical results;

   d. Graphical presentations of groundwater elevation, total dissolved solids, electrical conductivity, and chloride vs. time, and the pumping rates of on-site production wells vs. time;

   e. A copy of the field sampling log for each well, which shall contain well information such as the groundwater elevation measurement, depth to groundwater, well purging method and volume purged prior to sampling, and a detailed description of the sampling procedure (including the number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations); and

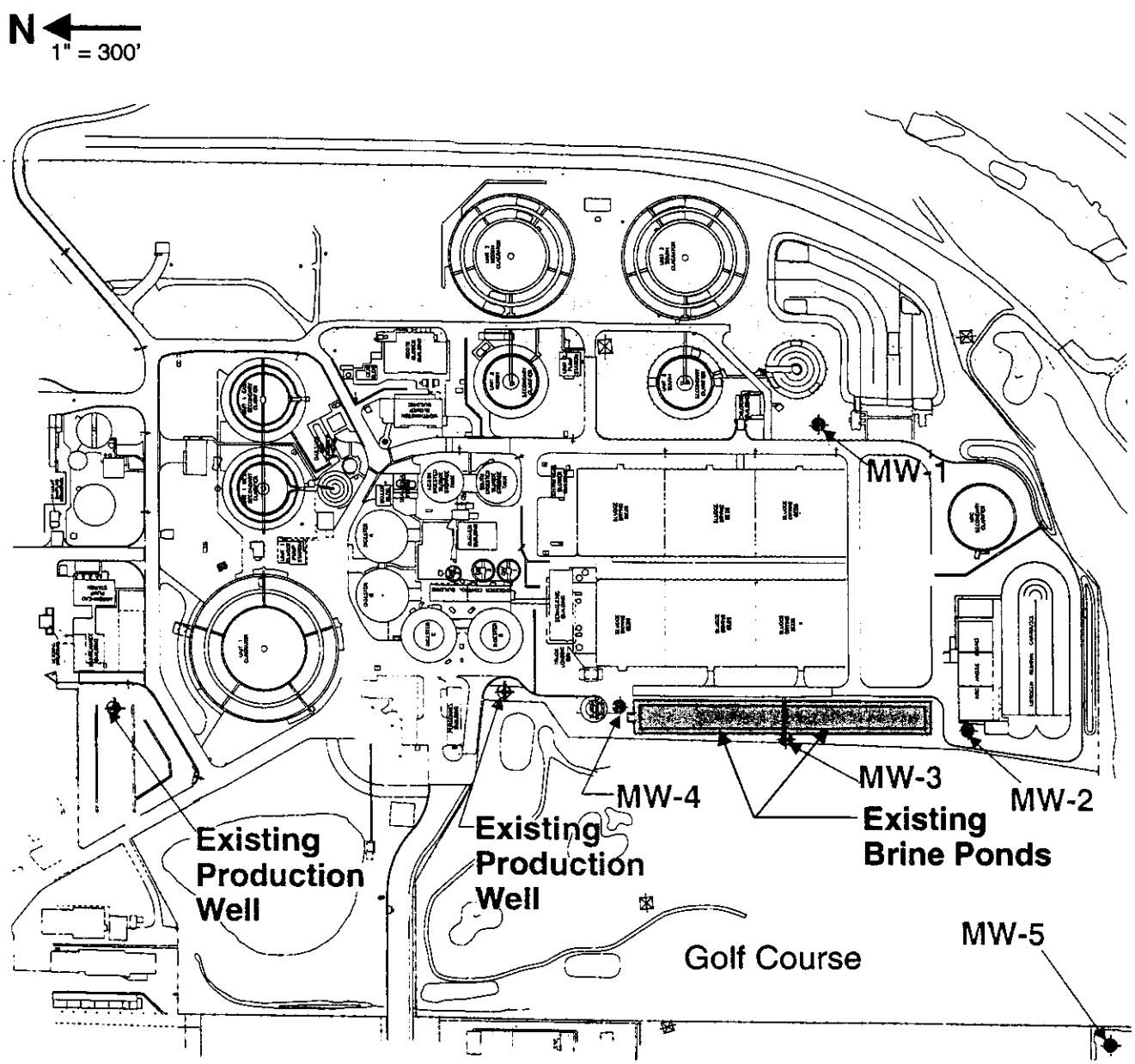
   f. A copy each of the laboratory analytical results and Chain of Custody for water samples collected.

7. Order No. 75-234 is hereby rescinded.

8. All reports shall be signed by a responsible officer or a duly authorized representative of the discharger, shall be submitted under penalty of perjury, and shall be retained by the discharger at the facility for a minimum of five years.

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 April 4, 2003.

Gerard J. Thibeault
Executive Officer



Attachment A
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BRINE POND CLOSURE REPORT

SITE LAYOUT

FIGURE 1

carollo engineers

SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

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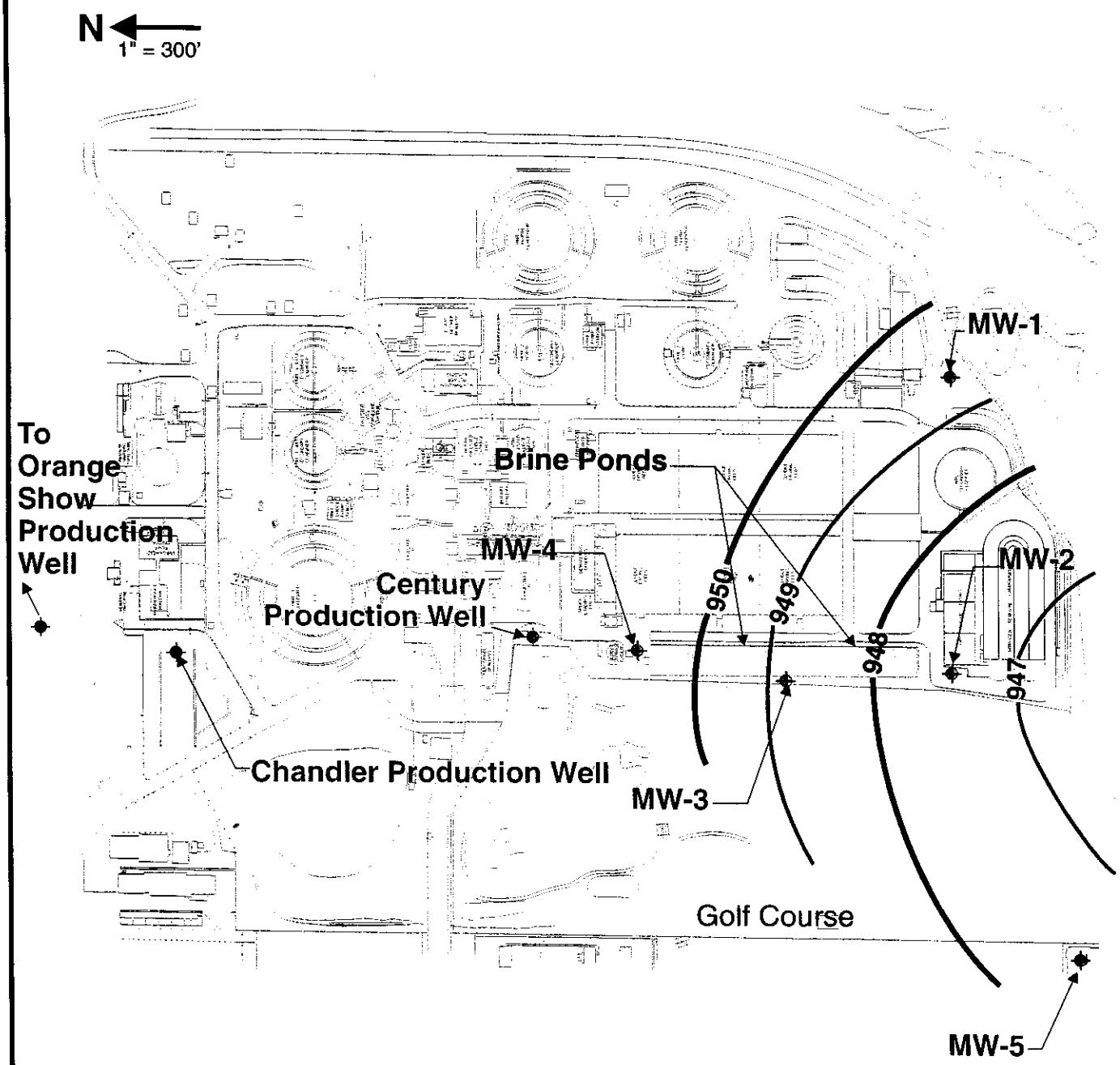

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BRINE POND MONITORING

SITE LAYOUT

FIGURE 1

SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

carollo engineers

CLIENT20/SBMWD/2578R00/2-03/SBF1.CDR

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

MONITORING AND REPORTING PROGRAM NO. R8-2003-0020 FOR CITY OF SAN BERNARDINO WATER RECLAMATION PLANT CLOSED BRINE DISPOSAL FACILITY SAN BERNARDINO, SAN BERNARDINO COUNTY

A. GENERAL

1. This Monitoring and Reporting Program (M&RP) establishes the requirements for monitoring and reporting associated with the closed brine disposal ponds at the Water Reclamation Plant (WRP).

2. The discharger shall perform the monitoring activities in compliance with 27 CCR, §20415 and §20420 to determine whether the closed brine ponds (Ponds) remain in compliance with water quality protection standard.

3. Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA Publication "SW-846").

4. Pursuant to Section 13176, Article 4, Chapter 3, Division 7 of the California Water Code, a certified laboratory registered by the State Department of Health Services shall perform all analyses. Specific methods of analysis must be identified.

5. All reports shall be maintained by the discharger and shall be retained for a minimum of five years. All reports shall be submitted to:

   California Regional Water Quality Control Board
   Santa Ana Region
   3737 Main Street, Suite 500
   Riverside, CA 92501-3348
   Attention: Land Disposal Section

6. Revisions of the Monitoring and Reporting Program may be made under the direction of the Executive Officer at any time to address a change in the monitoring frequency, the monitoring parameters, the monitoring points, etc.

B. BRINE FACILITY MONITORING

1. The Ponds shall be inspected at least quarterly to assess their condition as required under the schedule listed in Table A of M&RP No. R8-2003-0020, and the findings recorded and reported as required under Reporting Requirement C.5 of this Order. For any damage or failure noted, repairs must be made immediately and a summary report detailing such repairs shall be included in the maintenance report.

C. WATER QUALITY MONITORING

1. The discharger shall conduct groundwater monitoring in accordance with 27 CCR, §20415 and §20420 and with the schedules listed in Table A of M&RP No. R8-2003-0020. In accordance with 27 CCR, §20420(d), the following Water Quality Protection Standard has been established for post-closure groundwater monitoring:

   Constituents of Concern (COCs): Total dissolved solid (TDS), electrical conductivity (EC), sodium, and chloride.
   Concentration Limits: The concentration limits for the COCs shall be derived from a pool of background well (Well MW-4) data between October 1999 and October 2002.
   Point of Compliance: MW-2 (See Attachment B of this Order)
   Monitoring Points: MW-1, MW-2, MW-3, MW-4, and MW-5 (See Attachment B of this Order).

2. All groundwater samples shall be collected during the latter third[2] of the monitoring period, and shall be analyzed for the following monitoring parameters (same as COCs):

Monitoring Parameters	Unit
Total Dissolved Solids (TDS)	mg/l
Electrical Conductivity (EC)	µmhos/cm
Sodium	mg/l
Chloride	mg/l

[2] The latter third of the November 1-April 30 and the May 1-October 31 semi-annual monitoring periods are March 1-April 30 and September 1-October 31, respectively.

3. Sampling activities under this Order shall commence with the May 1-October 31, 2003 monitoring period.

4. The discharger shall propose and implement a data analysis method meeting the requirements of 27 CCR, §20415(e)(7-12) to evaluate the water quality monitoring data and to determine measurably significant evidence of any release from the Ponds. Within 60 days after the adoption of this Order, the discharger shall submit a proposed data analytical method, including the rationales for selecting the proposed method for all monitoring parameters, for approval by the Executive Officer of the Regional Board.

5. The discharger shall conduct a water quality monitoring program in accordance with 27 CCR, §20410 for a minimum compliance period of 25 years subsequent to a confirmed release from the Ponds.

D. REPORTING

1. Facility inspection, maintenance, and groundwater monitoring reports shall be submitted in accordance with the schedules listed in Table A of M&RP No. R8-2003-0020. These reports shall include the required information described under Reporting Requirements C.5. and C.6. of Order No. R8-2003-0020.

2. All reports shall be signed by a responsible officer or a duly authorized representative of the discharger, shall be submitted under penalty of perjury, and shall be retained by the discharger at the facility for a minimum of five years.

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.

Ordered by: _____
Gerard J. Thibeault
Executive Officer

April 4, 2003

TABLE A

MONITORING AND REPORTING PROGRAM NO. R8-2003-0020

Task Description	Monitoring Period	Report Due Date
Quarterly facility inspection and maintenance	November 1 – January 31	May 31 of each year
	February 1 – April 30	
Quarterly groundwater elevation measurements, and flow rate and direction determinations	May 1 – July 31	November 30 of each year
	August 1 – October 31	
Semi-annual groundwater monitoring	November 1 – April 30	May 31 of each year
	May 1 – October 31	November 30 of each year

California Regional Water Quality Control Board
Santa Ana Region

April 4, 2003

Staff Report

ITEM: 8

SUBJECT: Waste Discharge Requirements for postclosure maintenance at the City of San Bernardino Water Reclamation Plant, closed brine disposal facility, San Bernardino, Order No. R8-2003-0020

DISCUSSION:

The City of San Bernardino (hereinafter discharger), owns two brine evaporation ponds, which were operated from 1975 to 1986 at its Water Reclamation Plant (WRP) located at 399 Chandler Avenue, in the City of San Bernardino. Brine wastes received by the City from local water conditioning companies were discharged to two concrete-lined evaporation ponds, which were regulated under Board Order No. 75-234.

On May 5, 2000, the City submitted a letter stating that the brine ponds had been closed in accordance with a workplan approved by the Board on January 15, 1998. On June 12, 2000, the City formally submitted a request to use the closed brine ponds for temporary containment of emergency overflow from the Nitrogen Removal Facility (NRF) at the WRP. On July 28, 2000, the Executive Officer of the Regional Board approved the formal closure of the brine ponds and authorized the use of these ponds for temporary containment of emergency overflow from the NRF.

Order No. 75-234 does not include any discharge, monitoring, or reporting requirements for postclosure maintenance and reuse of the closed brine ponds. Therefore, Order No. 75-234 is being revised to prescribe these requirements.

This Order prescribes monitoring and reporting requirements for post-closure maintenance of the closed brine ponds and groundwater monitoring requirements for the brine ponds, and discharge specifications for temporary emergency overflow containment. These requirements are consistent with Title 27, the Basin Plan, and other state and federal laws and regulations, and are considered to be adequate for the protection of the beneficial uses of the waters of the region.

RECOMMENDATION:

Adopt Order No. R8-2003-0020 as presented.

Comments were solicited from the following:

State Water Resources Control Board, Division of Clean Water Programs – Joe Mello
State Water Resources Control Board, Office of Chief Counsel – Jorge Leon
State Department of Health Services, San Bernardino – Kalyanpur Baliga
San Bernardino County Dept. of Environmental Health Services – Jacquelyn Adams
City of San Bernardino Municipal Water Department, Water Reclamation Plant – John Perry
Carollo Engineers – Jim Ewing

California Regional Water Quality Control Board
Santa Ana Region

.on H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/rwqcb8
3737 Main Street, Suite 500, Riverside, California 92501-3348
Phone (909) 782-4130 - FAX (909) 781-6288

Gray Davis
Governor

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.swrcb.ca.gov/rwqcb8.

April 9, 2003

Mr. John Perry
Water Reclamation Plant
Municipal Water Department
City of San Bernardino
399 Chandler Place
San Bernardino, CA 92408

TRANSMITTAL OF ADOPTED ORDER NO. R8-2003-0020

Dear Mr. Perry:

At the regular Board Meeting held on April 4, 2003, the Regional Board adopted Order No. R8-2003-0020, replacing Order No. 75-234. A certified copy is enclosed for your records.

Sincerely,

Barbara Laffoon

BARBARA LAFFOON
Executive Assistant

Enclosure: Adopted Order No. R8-2003-0020

c. State Water Resources Control Board, Division of Water Quality, James Maughan
United States Environmental Protection Agency, WTR 5, Permits Section, Terry Oda

/bjl