California Regional Water Quality Control Board
Santa Ana Region

Order No. R8-2003-0056
NPDES No. CA8000265

Waste Discharge Requirements
for

Serrano Water District
Walter E. Howiler Jr. Water Filtration Plant
Orange, Orange County

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

1. Serrano Water District (hereinafter discharger) operates the Walter E. Howiler Jr. Water Filtration Plant (formerly Collins-Murdock Water Filtration Plant; name change in 1998) at 5454 Taft Avenue in the City of Orange, Orange County. Waste discharges from the facility are regulated by Order No. 98-7, NPDES No. CA8000265, adopted by the Board on January 23, 1998. Order No. 98-7 expired on January 1, 2003.

2. The facility is located at longitude W117°47.65' and latitude N33°49.09'.

3. The facility is designed to treat 4 million gallons of water per day. It receives water from Irvine Lake (Santiago Reservoir) and treats the water prior to distribution into the area's potable water supply system. The treatment process includes flocculation, clarification, filtration (using sand filters), and chlorination. Periodically, the sand filters are backwashed by reversing the water flow. Approximately 15,000 gallons per day of backwash wastewater are pumped to a recovery basin. In general, accumulated backwash wastewater is recycled to the influent of the water treatment plant. Occasionally, the level of backwash water rises high enough to overflow into a standpipe and then the water exits the facility. These releases flow through a pipeline parallel to Cannon Avenue and enter Santiago Creek at latitude N33°48.89', longitude W117°47.73'. The filter backwash water is the only process-wastewater discharged from the plant.

4. The discharger proposes to continue occasional discharges of sand filter backwash wastewater from the District's Walter E. Howiler Jr. Water Filtration Plant to Santiago Creek.

5. A Water Quality Control Plan (Basin Plan) became effective on January 24, 1995. The Basin Plan identifies water quality objectives and beneficial uses for waters in the Santa Ana Region. The requirements contained in this Order are necessary to implement the Basin Plan.

6. The discharge is to Santiago Creek, Reach 1, which is tributary to the Santa Ana River, Reach 2. The beneficial uses of these streams include:

   a. Municipal and domestic supply,
   b. Groundwater recharge,
   c. Water contact recreation (though access is largely restricted),
   d. Non-contact water recreation,
   e. Wildlife habitat,
   f. Warm freshwater habitat,
   g. Agricultural supply, and
   h. Rare, threatened, or endangered species.

7. The facility and discharge overlie the Santa Ana Forebay Groundwater Subbasin, the beneficial uses of which include:

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

8. Effluent limitations and new source performance standards established pursuant to Section 301, 302, 303(d), 304, and 306 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

9. In accordance with Water Code Section 13389, the issuance of waste discharge requirements for this discharge 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.

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

11. The 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 for a public hearing and an opportunity to submit their written views and recommendations.

12. The 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 Divisions 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and the regulations and guidelines adopted thereunder, shall comply with the following:

## A. Discharge Specifications

1. The discharge of wastes containing constituent concentrations in excess of the following limits is prohibited:

| CONSTITUENT | MAXIMUM DAILY CONCENTRATION LIMIT |
|---|---|
| Total Suspended Solids | 75 mg/l |
| Total Dissolved Solids | 850 mg/l |
| Chlorine Residual | 0.1 mg/l |

2. The discharge of any substance in concentrations toxic to animal or plant life in the affected receiving water is prohibited.

## 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 Board or State Board, as required by the Clean Water Act and regulations adopted thereunder.

2. The discharge shall not cause any of the following:

   a. Coloration of the receiving waters which causes a nuisance or adversely affect beneficial uses.

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

   c. 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. Taste or odor producing substances in the receiving waters at concentrations which cause a nuisance or adversely affect beneficial uses.

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

   f. The depletion of the dissolved oxygen concentration below 5.0 mg/l in Santiago Creek, Reach 1.

   g. The temperature of the receiving waters to be raised above 90°F (32°C) during the period of June through October, or above 78°F (26°C) during the rest of the year.

   h. The concentration of pollutants in the water column, sediments, or biota to adversely affect the beneficial uses of the receiving water. The discharge shall not result in the degradation of inland surface water communities and populations, including vertebrate, invertebrate, and plant species, and

3. 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.

4. 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 noncomplying discharge.

## C. Provisions

1. This Order shall 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 nor the discharge of waste shall create, or threaten to create, a nuisance or pollution as defined by Section 13050 of the California Water Code.

3. This Order expires on August 1, 2008 and the discharger must file a Report of Waste Discharge in accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations not later than 180 days in advance of such expiration date. The Report of Waste Discharge shall serve as the application for issuance of new waste discharge requirements.

4. Order No. 98-7 is hereby rescinded.

5. The discharger shall comply with Monitoring and Reporting Program No. R8-2003-0056. This monitoring and reporting program may be modified by the Executive Officer 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 the 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.

6. The discharger shall notify the Executive Officer or designee, whenever feasible, at least 24 hours prior to a discharge event. If prior notice cannot be made, then the discharger shall notify the Executive Officer or designee of the discharge as soon as possible.

7. The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location, or volume of the discharge. The discharger shall give advance notice to the Board of any planned changes in the permitted facility or activity that may result in noncompliance with these waste discharge requirements.

8. 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.

9. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

10. The discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided to the Executive Officer (909-782-4130) and the Office of Emergency Services (1-800-852-7550), if appropriate, as soon as the discharger becomes aware of the circumstances. A written report shall be submitted within five days and shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates/times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Executive Officer or the Executive Officer's designee may waive the above-required written report on a case-by-case basis.

11. 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.

12. The provisions and requirements of this Order do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state, or local laws, nor guarantee the discharger a capacity right in the receiving waters.

13. This Order does not convey any property rights of any sort, or any exclusive privilege.

14. This Order is not transferable to any person except after notice to and approval by the Board. The Board may require modification, or revocation and reissuance, of this Order to change the name of the discharger and incorporate such other requirements as may be necessary under the Clean Water Act.

15. In the event of any change in control of the waste discharge facility 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 forwarded to the Board.

16. It shall not be a defense for a discharger in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.

17. The 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 this Order;
    c. To inspect any facility, equipment (including for monitoring and control), 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.

18. Except for data determined to be confidential under Section 308 of the Clean Water Act, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Regional Water Quality Control Board and the Regional Administrator of the EPA. As required by the Clean Water Act, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act and Section 13387 of the California Water Code.

**D. Permit Reopening, Revision, Revocation, and Reissuance**

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

2. This Order may be modified, revoked and reissued, or terminated for cause. No permit condition will be stayed by the filing of a request by the discharger for modification, revocation and reissuance, or termination of this Order, or by a notification of anticipated noncompliance or planned changes.

3. This Order may be reopened to include effluent limitations for pollutants determined to be present in significant amounts in the discharge through any monitoring program.

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 August 22, 2003.

for Gerard J. Thibeault
Executive Officer

California Regional Water Quality Control Board
Santa Ana Region

Monitoring and Reporting Program No. R8-2003-0056
for
Serrano Water District
Walter E. Howiler Jr. Water Filtration Plant
Orange, Orange County

## A. Monitoring Guidelines

Monitoring shall be in accordance with the following:

1. All sampling, sample preservation, and analysis shall be performed in accordance with the most recent edition of 40 CFR 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants" promulgated by the EPA, unless otherwise noted. In addition, the Board and/or EPA, at their discretion, may specify test methods which are more sensitive than those specified in 40 CFR 136.

2. Chemical and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services or the EPA, or at laboratories approved by the Executive Officer of the Regional Board.

3. The discharger shall conduct acute toxicity testing as specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA-821-R-02-012, Fifth Edition, October 2002). Using a control and 100% effluent, static renewal survival (pass/fail) tests for 96 hours shall be conducted using the water flea (*Ceriodaphnia dubia*) for the required annual test under this permit. The effluent tests must be conducted concurrent with reference toxicant tests. The effluent and reference toxicant tests must meet all test acceptability criteria as specified in the acute manual[1]. If the test acceptability criteria are not achieved, then the discharger must re-sample and re-test within 14 days. The test results must be reported according to the acute manual chapter on Report Preparation, and shall be attached to the monitoring reports. The use of alternative methods for measuring acute toxicity may be considered by the Executive Officer on a case-by-case basis.

   In the event that the required annual toxicity test fails, the discharger shall stop any discharge of wastewater to waters of the U.S. and shall retest within 14 days of receiving the notice of failure and shall determine the cause of the failure. The discharger shall stop any discharge of wastewater to waters of the U.S. until such time that the cause of toxicity is determined and appropriately addressed. Commencement of any discharge shall be with prior approval by the Executive Officer.

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[1] *"Acute manual" refers to protocols described in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA-821-R-02-012, Fifth Edition, October 2002).*

4. All analytical data shall be reported with method detection limits (MDLs) and with identification of either practical quantitation levels (PQLs) or limits of quantitation (LOQs).

5. For those priority pollutants without effluent limitations, the discharger shall require its testing laboratory to quantify constituent concentrations to the lowest achievable MDL as determined by the procedure found in 40 CFR 136 (revised as of May 14, 1999). In situations where the most stringent applicable receiving water objective (freshwater or human health (consumption of organisms only), as specified for that pollutant in 40 CFR 131.38[2]) is below the minimum level specified in Attachment "A" and the discharger cannot achieve an MDL value for that pollutant below the ML value, the discharger shall submit justification why a lower MDL value cannot be achieved. Justification shall be submitted together with quarterly monitoring reports.

6. The discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of ten percent (10%) of the samples, or at least one sample per month, whichever is greater. A similar frequency shall be maintained for the analysis of spiked samples. When requested by the Board or the EPA, the discharger will participate in the NPDES discharge monitoring report QA performance study and must have a success rate equal to or greater than 80%.

7. 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. The flow measurement system shall be calibrated at least once per year, or even more frequently, to ensure continued accuracy.

8. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Effluent samples shall be collected downstream of the last addition of waste to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters.

9. 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.

10. 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 Executive Officer 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 laboratory which performed the analyses;

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[2] *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

e. The individual(s) who performed the analyses;

f. The analytical techniques or methods used, including any modification to those methods;

g. All sampling and analytical results, including:

1) units of measurement used;
2) minimum reporting limit for the analysis (minimum level, practical quantitation level (PQL));
3) results less than the reporting limit but above the method detection limit (MDL);
4) data qualifiers and a description of the qualifiers;
5) quality control test results (and a written copy of the laboratory quality assurance plan);
6) dilution factors, if used; and
7) sample matrix type; and

h. All monitoring equipment calibration and maintenance records;

i. All original strip charts from continuous monitoring devices;

j. All data used to complete the application for this Order; and,

k. Copies of all reports required by this Order.

l. Electronic data and information generated by the Supervisory Control And Data Acquisition (SCADA) System.

11. Samples shall be collected during each discharge event.

12. Annual samples shall be collected during January. If no discharge occurs in January, then annual samples shall be collected during the next discharge.

**B. Effluent Monitoring**

1. The following shall be the monitoring program for this discharge:

| Constituent | Sample type | Units | Minimum Frequency of Sampling &Analysis |
|---|---|---|---|
| Flow (see B.2., below) | Estimate | gpd | Daily |
| Total Suspended Solids | Grab | mg/l | Each discharge event |
| Total Dissolved Solids | " | " | " |
| Residual Chlorine | " | " | " |
| Priority Pollutant List (Attachment B) | " | ug/l | Once in 2004 and once in 2008 before expiration of Order (see B.3., below) |
| Toxicity | " | Pass/fail | Annually |

2. Whenever there is a discharge, the discharger shall record in a permanent bound log the time, date, duration and the estimated volume of discharge, and the name and title of the person who observed/recorded the discharge. A discussion as to how flow was estimated shall also be recorded.

3. The monitoring frequency for those priority pollutants that are detected during the required annual monitoring at a concentration greater than fifty percent of the most stringent applicable receiving water objectives (freshwater or human health (consumption of organisms only) as specified for that pollutant[3] in 40 CFR 131.38[4]) shall be accelerated to quarterly for one year following detection. To return to the monitoring frequency specified, the discharger shall request and receive approval from the Regional Board's Executive Officer or designee.

## C. Reporting

Reporting shall be in accordance with the following:

1. All reports shall be arranged in a tabular format to clearly show compliance or noncompliance with each discharge limitation.

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

3. The discharger shall send a copy of each monitoring report in the appropriate format to:

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

4. If noncompliance is being reported, the reasons for such noncompliance shall be stated plus an estimate of the date when the discharger will be in compliance. The discharger shall notify the Board by letter when compliance with the time schedule has been achieved.

5. Noncompliance Reporting

   a. The discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided to the Executive Officer (909-782-4130) and the Office of Emergency Services (1-800-852-7550), if appropriate, as soon as the discharger becomes aware of the circumstances. A written report shall be submitted within 5 days and shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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[3] *For those priority pollutants without specified criteria values, accelerated monitoring is not required.*

[4] *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

b. Any violation of a maximum daily discharge limitation for any of the pollutants listed in this Order shall be included as information that must be reported to the Board within 24 hours.

c. The Regional Board may waive the above written report on a case-by-case basis.

6. Except for data determined to be confidential under Section 308 of the Clean Water Act (CWA), all reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the Regional Water Quality Control Board and the Regional Administrator of the EPA. As required by the CWA, effluent data shall not be considered confidential.

7. Monitoring reports shall be submitted by the 30th day of April, July, October, and January, following each quarter, and shall include:

a. The results of all effluent chemical analyses for the previous three months, and annual toxicity analyses and priority pollutant analyses whenever applicable,

b. Whenever, there is a discharge, a copy of the log as discussed in Section B.2., above,

c. For every item of monitoring data 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 shall submit a timetable for correction.

8. 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 K t V. Bltl

for Gerard J. Thibeault
Executive Officer

August 22, 2003

# MINIMUM LEVELS IN PPB (µg/l)

| Table 2a - VOLATILE SUBSTANCES[1] | GC | GCMS |
|---|---|---|
| Acrolein | 2.0 | 5 |
| Acrylonitrile | 2.0 | 2 |
| Benzene | 0.5 | 2 |
| Bromoform | 0.5 | 2 |
| Carbon Tetrachloride | 0.5 | 2 |
| Chlorobenzene | 0.5 | 2 |
| Chlorodibromomethane | 0.5 | 2 |
| Chloroethane | 0.5 | 2 |
| Chloroform | 0.5 | 2 |
| Dichlorobromomethane | 0.5 | 2 |
| 1,1 Dichloroethane | 0.5 | 1 |
| 1,2 Dichloroethane | 0.5 | 2 |
| 1,1 Dichloroethylene | 0.5 | 2 |
| 1,2 Dichloropropane | 0.5 | 1 |
| 1,3 Dichloropropylene (volatile) | 0.5 | 2 |
| Ethylbenzene | 0.5 | 2 |
| Methyl Bromide (*Bromomethane* ) | 1.0 | 2 |
| Methyl Chloride (*Chloromethane* ) | 0.5 | 2 |
| Methylene Chloride (*Dichloromethane*) | 0.5 | 2 |
| 1,1,2,2 Tetrachloroethane | 0.5 | 1 |
| Tetrachloroethylene | 0.5 | 2 |
| Toluene | 0.5 | 2 |
| trans-1,2 Dichloroethylene | 0.5 | 1 |
| 1,1,1 Trichloroethane | 0.5 | 2 |
| 1,1,2 Trichloroethane | 0.5 | 2 |
| Trichloroethylene | 0.5 | 2 |
| Vinyl Chloride | 0.5 | 2 |
| 1,2 Dichlorobenzene (volatile) | 0.5 | 2 |
| 1,3 Dichlorobenzene (volatile) | 0.5 | 2 |
| 1,4 Dichlorobenzene (volatile) | 0.5 | 2 |

**Selection and Use of Appropriate ML Value:**

ML Selection: When there is more than one ML value for a given substance, the discharger may select any one of those ML values, and their associated analytical methods, listed in Attachment "A" that are below the calculated effluent limitation for compliance determination. If no ML value is below the effluent limitation, then the discharger shall select the lowest ML value, and its associated analytical method, listed in this Attachment "A".

ML Usage: The ML value in Attachment "A" represents the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences. Assuming that all method-specific analytical steps are followed, the ML value will also represent, after the appropriate application of method-specific factors, the lowest standard in the calibration curve for that specific analytical technique. Common analytical practices sometimes require different treatment of the sample relative to calibration standards.

Note: chemical names in parenthesis and italicized is another name for the constituent.

[1] *The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.*

## MINIMUM LEVELS IN PPB (µg/l)

| Table 2b – Semi-Volatile Substances[2] | GC | GCMS | LC |
|---|---|---|---|
| 2-Chloroethyl vinyl ether | 1 | 1 | |
| 2 Chlorophenol | 2 | 5 | |
| 2,4 Dichlorophenol | 1 | 5 | |
| 2,4 Dimethylphenol | 1 | 2 | |
| 4,6 Dinitro-2-methylphenol | 10 | 5 | |
| 2,4 Dinitrophenol | 5 | 5 | |
| 2- Nitrophenol | | 10 | |
| 4- Nitrophenol | 5 | 10 | |
| 4 Chloro-3-methylphenol | 5 | 1 | |
| 2,4,6 Trichlorophenol | 10 | 10 | |
| Acenaphthene | 1 | 1 | 0.5 |
| Acenaphthylene | | 10 | 0.2 |
| Anthracene | | 10 | 2 |
| Benzidine | | 5 | |
| Benzo (a) Anthracene (*1,2 Benzanthracene*) | 10 | 5 | |
| Benzo(a) pyrene (*3,4 Benzopyrene*) | | 10 | 2 |
| Benzo (b) Flouranthene (*3,4 Benzofluoranthene*) | | 10 | 10 |
| Benzo(g,h,i)perylene | | 5 | 0.1 |
| Benzo(k)fluoranthene | | 10 | 2 |
| bis 2-(1-Chloroethoxyl) methane | | 5 | |
| bis(2-chloroethyl) ether | 10 | 1 | |
| bis(2-Chloroisopropyl) ether | 10 | 2 | |
| bis(2-Ethylhexyl) phthalate | 10 | 5 | |
| 4-Bromophenyl phenyl ether | 10 | 5 | |
| Butyl benzyl phthalate | 10 | 10 | |
| 2-Chloronaphthalene | | 10 | |
| 4-Chlorophenyl phenyl ether | | 5 | |
| Chrysene | | 10 | 5 |
| Dibenzo(a,h)-anthracene | | 10 | 0.1 |
| 1,2 Dichlorobenzene (semivolatile) | 2 | 2 | |
| 1,3 Dichlorobenzene (semivolatile) | 2 | 1 | |
| 1,4 Dichlorobenzene (semivolatile) | 2 | 1 | |
| 3,3' Dichlorobenzidine | | 5 | |
| Diethyl phthalate | 10 | 2 | |
| Dimethyl phthalate | 10 | 2 | |
| di-n-Butyl phthalate | | 10 | |
| 2,4 Dinitrotoluene | 10 | 5 | |
| 2,6 Dinitrotoluene | | 5 | |
| di-n-Octyl phthalate | | 10 | |
| 1,2 Diphenylhydrazine | | 1 | |
| Fluoranthene | 10 | 1 | 0.05 |
| Fluorene | | 10 | 0.1 |
| Hexachloro-cyclopentadiene | 5 | 5 | |
| 1,2,4 Trichlorobenzene | 1 | 5 | |

## MINIMUM LEVELS IN PPB (µg/l)

| Table 2b - SEMI-VOLATILE SUBSTANCES[2] | GC | GCMS | LC | COLOR |
|---|---|---|---|---|
| Pentachlorophenol | 1 | 5 | | |
| Phenol [3] | 1 | 1 | | 50 |
| Hexachlorobenzene | 5 | 1 | | |
| Hexachlorobutadiene | 5 | 1 | | |
| Hexachloroethane | 5 | 1 | | |
| Indeno(1,2,3,cd)-pyrene | | 10 | 0.05 | |
| Isophorone | 10 | 1 | | |
| Naphthalene | 10 | 1 | 0.2 | |
| Nitrobenzene | 10 | 1 | | |
| N-Nitroso-dimethyl amine | 10 | 5 | | |
| N-Nitroso -di n-propyl amine | 10 | 5 | | |
| N-Nitroso diphenyl amine | 10 | 1 | | |
| Phenanthrene | | 5 | 0.05 | |
| Pyrene | | 10 | 0.05 | |

| Table 2c – INORGANICS[4] | FAA | GFAA | ICP | ICPMS | SPGF AA | HYDRIDE | CVAA | COLOR | DCP |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 10 | 5 | 50 | 0.5 | 5 | 0.5 | | | 1000 |
| Arsenic | | 2 | 10 | 2 | 2 | 1 | | 20 | 1000 |
| Beryllium | 20 | 0.5 | 2 | 0.5 | 1 | | | | 1000 |
| Cadmium | 10 | 0.5 | 10 | 0.25 | 0.5 | | | | 1000 |
| Chromium (total) | 50 | 2 | 10 | 0.5 | 1 | | | | 1000 |
| Chromium VI | 5 | | | | | | | 10 | |
| Copper | 25 | 5 | 10 | 0.5 | 2 | | | | 1000 |
| Lead | 20 | 5 | 5 | 0.5 | 2 | | | | 10000 |
| Mercury | | | | 0.5 | | | 0.2 | | |
| Nickel | 50 | 5 | 20 | 1 | 5 | | | | 1000 |
| Selenium | | 5 | 10 | 2 | 5 | 1 | | | 1000 |
| Silver | 10 | 1 | 10 | 0.25 | 2 | | | | 1000 |
| Thallium | 10 | 2 | 10 | 1 | 5 | | | | 1000 |
| Zinc | 20 | | 20 | 1 | 10 | | | | 1000 |
| Cyanide | | | | | | | | 5 | |

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2 *With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1000, therefore, the lowest standards concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1000.*

3 *Phenol by colorimetric technique has a factor of 1*

4 *The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.*

## MINIMUM LEVELS IN PPB (µg/l)

| Table 2d - PESTICIDES – PCBs[5] | GC |
|---|---|
| Aldrin | 0.005 |
| alpha–BHC (*a-Hexachloro-cyclohexane*) | 0.01 |
| beta–BHC (*b-Hexachloro-cyclohexane*) | 0.005 |
| Gamma–BHC (*Lindane; g-Hexachloro-cyclohexane*) | 0.02 |
| Delta-BHC (*d-Hexachloro-cyclohexane*) | 0.005 |
| Chlordane | 0.1 |
| 4,4'-DDT | 0.01 |
| 4,4'-DDE | 0.05 |
| 4,4'-DDD | 0.05 |
| Dieldrin | 0.01 |
| Alpha-Endosulfan | 0.02 |
| Beta-Endosulfan | 0.01 |
| Endosulfan Sulfate | 0.05 |
| Endrin | 0.01 |
| Endrin Aldehyde | 0.01 |
| Heptachlor | 0.01 |
| Heptachlor Epoxide | 0.01 |
| PCB 1016 | 0.5 |
| PCB 1221 | 0.5 |
| PCB 1232 | 0.5 |
| PCB 1242 | 0.5 |
| PCB 1248 | 0.5 |
| PCB 1254 | 0.5 |
| PCB 1260 | 0.5 |
| Toxaphene | 0.5 |

**Techniques:**
GC - Gas Chromatography
GCMS - Gas Chromatography/Mass Spectrometry
HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)
LC - High Pressure Liquid Chromatography
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP - Direct Current Plasma
COLOR - Colorimetric

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5 *The normal method-specific factor for these substances is 100, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.*

**EPA PRIORITY POLLUTANT LIST**

| Metals | | Acid Extractibles | | Base/Neutral Extractibles (continuation) | |
|---|---|---|---|---|---|
| 1. | Antimony | 45. | 2-Chlorophenol | 91. | Hexachloroethane |
| 2. | Arsenic | 46. | 2,4-Dichlorophenol | 92. | Indeno (1,2,3-cd) Pyrene |
| 3. | Beryllium | 47. | 2,4-Dimethylphenol | 93. | Isophorone |
| 4. | Cadmium | 48. | 2-Methyl-4,6-Dinitrophenol | 94. | Naphthalene |
| 5a. | Chromium (III) | 49. | 2,4-Dinitrophenol | 95. | Nitrobenzene |
| 5b. | Chromium (VI) | 50. | 2-Nitrophenol | 96. | N-Nitrosodimethylamine |
| 6. | Copper | 51. | 4-Nitrophenol | 97. | N-Nitrosodi-N-Propylamine |
| 7. | Lead | 52. | 3-Methyl-4-Chlorophenol | 98. | N-Nitrosodiphenylamine |
| 8. | Mercury | 53. | Pentachlorophenol | 99. | Phenanthrene |
| 9. | Nickel | 54. | Phenol | 100. | Pyrene |
| 10. | Selenium | 55. | 2, 4, 6 – Trichlorophenol | 101. | 1,2,4-Trichlorobenzene |
| 11. | Silver | **Base/Neutral Extractibles** | | **Pesticides** | |
| 12. | Thallium | 56. | Acenaphthene | 102. | Aldrin |
| 13. | Zinc | 57. | Acenaphthylene | 103. | Alpha BHC |
| **Miscellaneous** | | 58. | Anthracene | 104. | Beta BHC |
| 14. | Cyanide | 59. | Benzidine | 105. | Delta BHC |
| 15. | Asbestos (not required unless requested) | 60. | Benzo (a) Anthracene | 106. | Gamma BHC |
| 16. | 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD) | 61. | Benzo (a) Pyrene | 107. | Chlordane |
| **Volatile Organics** | | 62. | Benzo (b) Fluoranthene | 108. | 4, 4' - DDT |
| 17. | Acrolein | 63. | Benzo (g,h,i) Perylene | 109. | 4, 4' - DDE |
| 18. | Acrylonitrile | 64. | Benzo (k) Fluoranthene | 110. | 4, 4' - DDD |
| 19. | Benzene | 65. | Bis (2-Chloroethoxy) Methane | 111. | Dieldrin |
| 20. | Bromoform | 66. | Bis (2-Chloroethyl) Ether | 112. | Alpha Endosulfan |
| 21. | Carbon Tetrachloride | 67. | Bis (2-Chloroisopropyl) Ether | 113. | Beta Endosulfan |
| 22. | Chlorobenzene | 68. | Bis (2-Ethylhexyl) Phthalate | 114. | Endosulfan Sulfate |
| 23. | Chlorodibromomethane | 69. | 4-Bromophenyl Phenyl Ether | 115. | Endrin |
| 24. | Chloroethane | 70. | Butylbenzyl Phthalate | 116. | Endrin Aldehyde |
| 25. | 2-Chloroethyl Vinyl Ether | 71. | 2-Chloronaphthalene | 117. | Heptachlor |
| 26. | Chloroform | 72. | 4-Chlorophenyl Phenyl Ether | 118. | Heptachlor Epoxide |
| 27. | Dichlorobromomethane | 73. | Chrysene | 119. | PCB 1016 |
| 28. | 1,1-Dichloroethane | 74. | Dibenzo (a,h) Anthracene | 120. | PCB 1221 |
| 29. | 1,2-Dichloroethane | 75. | 1,2-Dichlorobenzene | 121. | PCB 1232 |
| 30. | 1,1-Dichloroethylene | 76. | 1,3-Dichlorobenzene | 122. | PCB 1242 |
| 31. | 1,2-Dichloropropane | 77. | 1,4-Dichlorobenzene | 123. | PCB 1248 |
| 32. | 1,3-Dichloropropylene | 78. | 3,3'-Dichlorobenzidine | 124. | PCB 1254 |
| 33. | Ethylbenzene | 79. | Diethyl Phthalate | 125. | PCB 1260 |
| 34. | Methyl Bromide | 80. | Dimethyl Phthalate | 126. | Toxaphene |
| 35. | Methyl Chloride | 81. | Di-n-Butyl Phthalate | | |
| 36. | Methylene Chloride | 82. | 2,4-Dinitrotoluene | | |
| 37. | 1,1,2,2-Tetrachloroethane | 83. | 2-6-Dinitrotoluene | | |
| 38. | Tetrachloroethylene | 84. | Di-n-Octyl Phthalate | | |
| 39. | Toluene | 85. | 1,2-Dipenylhydrazine | | |
| 40. | 1,2-Trans-Dichloroethylene | 86. | Fluoranthene | | |
| 41. | 1,1,1-Trichloroethane | 87. | Fluorene | | |
| 42. | 1,1,2-Trichloroethane | 88. | Hexachlorobenzene | | |
| 43. | Trichloroethylene | 89. | Hexachlorobutadiene | | |
| 44. | Vinyl Chloride | 90. | Hexachlorocyclopentadiene | | |

Revised: 7/7/2000

California Regional Water Quality Control Board
Santa Ana Region

August 22, 2003

ITEM: 5

SUBJECT: Waste Discharge Requirements for Serrano Water District, Walter E. Howiler Jr. Water Filtration Plant, Orange, Orange County - Order No. R8-2003-0056, NPDES Permit No. CA8000265

DISCUSSION:

The Serrano Water District owns and operates the Walter E. Howiler Jr. Water Filtration Plant (formerly Collins-Murdock Water Filtration Plant; name change in 1998) in the City of Orange, Orange County. Wastewater discharges from the facility into Santiago Creek, Reach 1, are regulated under Order No. 98-7, NPDES No. CA8000265, adopted by the Regional Board on January 23, 1998. Order No. 98-7 expired on January 1, 2003.

The facility location is shown on the attached map.

The Walter E. Howiler Jr. Water Filtration Plant is a 4-million-gallon per day water treatment plant. It takes and treats water from Irvine Lake (Santiago Reservoir) prior to distribution into the potable water supply system for the Villa Park and northern Orange area. The treatment process includes flocculation, clarification, filtration (using sand filters), and chlorination. Periodically, the sand filters are backwashed by reversing the water flow. Approximately 15,000 gallons per day (gpd) of backwash wastewater are discharged to a recovery basin at the west side of the plant. The discharger recycles this water. Occasionally, the level of backwash water in the recovery basin rises high enough to overflow into a standpipe located at the northwestern end of the basin and then the water exits the facility. This is the only process-wastewater discharged from the facility. These releases exit the facility and flow through a pipeline parallel to Cannon (formerly Loma) Avenue and enter Santiago Creek at latitude N33°48.89', longitude W117°47.73'. Only seven discharge events have taken place during the five years since Order No. 98-7 was issued.

A reasonable potential analysis of discharge quality data indicates that no effluent limitations for constituents beyond those addressed in Order No. 98-7 are required. The monitoring data submitted for the filter backwash water quality show compliance with the limits for total suspended solids (75 mg/l), total dissolved solids (TDS, 850 mg/l), and chlorine (0.1 mg/l) of Order No. 98-7. The discharges have not demonstrated toxicity in aquatic life toxicity tests.

The tentative Order requires that 24-hour notice be given to the Executive Officer prior to a discharge event, if feasible. Monitoring and Reporting Program No. R8-2003-0056 requires that sampling and analysis be conducted during each of the rare discharge events.

An Orange County Sanitation District sewer line serves the eastern portion of the plant. Sediment sludge from the basin bottom is removed for sewer disposal.

The beneficial uses of Santiago Creek, Reach 1, include municipal and domestic supply; groundwater recharge; water contact recreation (though access is largely restricted); non-contact water recreation; warm freshwater habitat; and wildlife habitat. Santiago Creek, Reach 1, is tributary to the Santa Ana River, Reach 2, the beneficial uses of which include agricultural supply; groundwater recharge; water contact recreation; non-contact water recreation; warm freshwater habitat; wildlife habitat; and rare, threatened, or endangered species. The discharge overlies the Santa Ana Forebay Groundwater Subbasin, the beneficial uses of which include municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

The proposed waste discharge requirements should be adequate to protect the beneficial uses of the receiving waters.

RECOMMENDATION:

Adopt Order No. R8-2003-0056, NPDES Permit No. CA8000265, as presented.

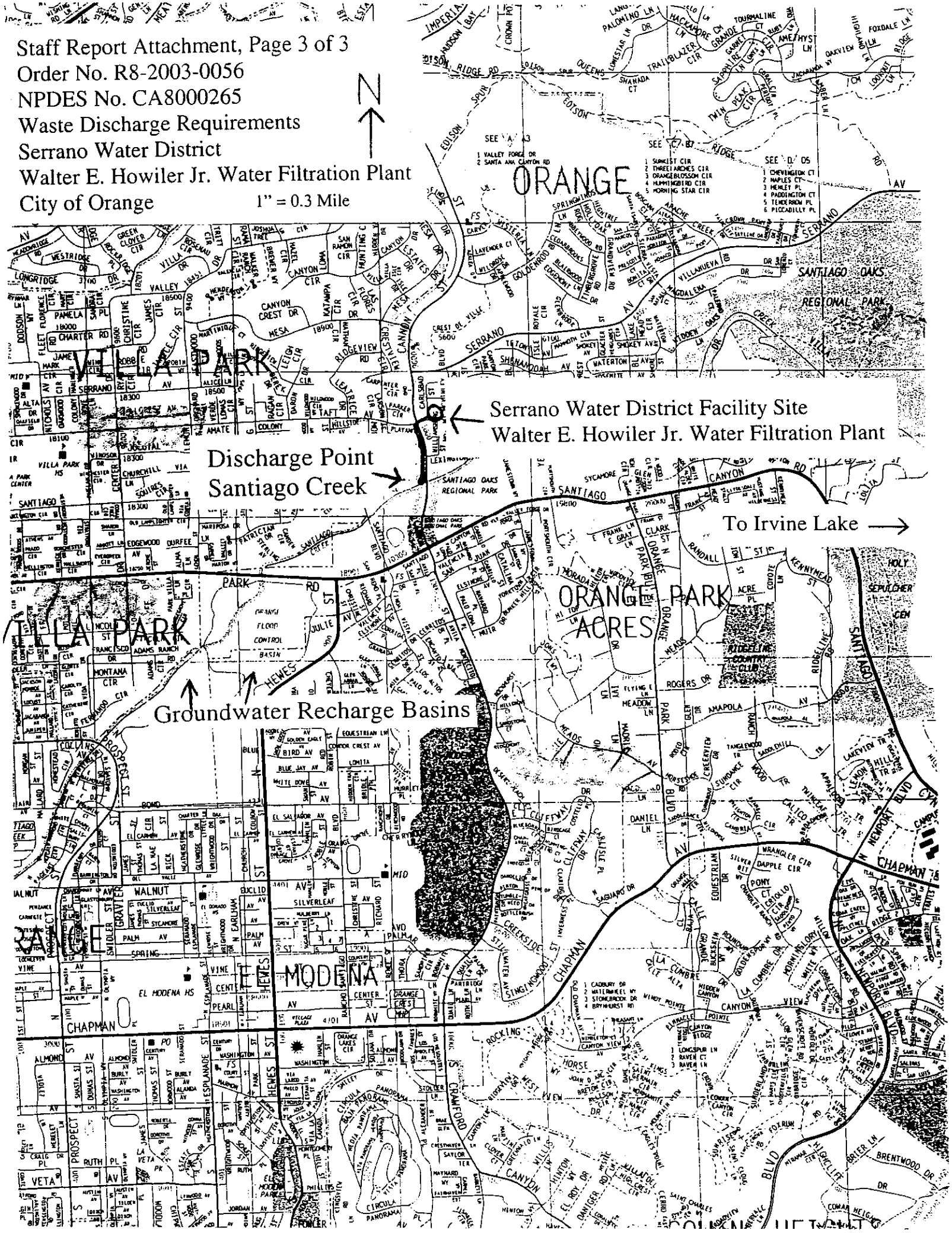
Comments were solicited from the following agencies:

U.S. Environmental Protection Agency, Permits Issuance Section (WTR-5) - Doug Eberhardt
U.S. Fish and Wildlife Service, Carlsbad
State Water Resources Control Board, Office of the Chief Counsel – Jorge Leon
State Water Resources Control Board, DWQ – Jim Maughan
State Department of Water Resources, Glendale
State Department of Health Services, Santa Ana
State Department of Fish and Game, Los Alamitos
Orange County Dept. Health Services, Drinking Water Operations, Santa Ana - Nabil Saba
Orange County Public Facilities and Resources, Flood Control - Herb Nakasone
Orange County Health Care Agency – Larry Honeybourne
Orange County Sanitation District – James Colston
Orange County Water District, Fountain Valley - Nira Yamachika
City of Villa Park City Manager – George Rodericks
Natural Resources Defense Council - David Beckman
Orange County Coastkeeper – Garry Brown
Lawyers for Clean Water C/c San Francisco Baykeeper
Environmental Advocates, San Francisco – Christopher Sproul

Staff Report Attachment, Page 3 of 3
Order No. R8-2003-0056
NPDES No. CA8000265
Waste Discharge Requirements
Serrano Water District
Walter E. Howiler Jr. Water Filtration Plant
City of Orange

N

1" = 0.3 Mile



# California Regional Water Quality Control Board
## Santa Ana Region

Winston H. Hickox
*Secretary for Environmental Protection*

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Gray Davis
*Governor*


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September 2, 2003

Mr. Tim DeTurk
Director of Water Quality
Serrano Water District
18021 Lincoln Street
Villa Park, CA 92861

TRANSMITTAL OF ADOPTED ORDER NO. R8-2003-0056, NPDES NO. CA8000265

Dear Mr. DeTurk:

At the regular Board Meeting held on August 22, 2003, the Regional Board adopted Order No. R8-2003-0056, which replaces Order No. 98-7. A certified copy is enclosed for your records.

Sincerely,

BARBARA LAFFOON
Executive Assistant

Enclosure: Adopted Order No. R8-2003-0056

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

/bjl