CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

INVESTIGATION ORDER NO. R9-2004-0277 (W.C. 13383)

CALIFORNIA DEPARTMENT OF TRANSPORTATION AND SAN DIEGO MUNICIPAL SEPARATE STORM SEWER SYSTEM COPERMITTEES RESPONSIBLE FOR THE DISCHARGE OF DIAZINON INTO THE CHOLLAS CREEK WATERSHED, SAN DIEGO, CALIFORNIA

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds:

1. **Parties Responsible for the Discharge**: MS4s convey urban storm water containing diazinon and metals into Chollas Creek waters. California Department of Transportation (CalTrans)[1] and the cities of San Diego, La Mesa and Lemon Grove, the County of San Diego, and the San Diego Unified Port District (hereinafter Chollas Creek Watershed Copermitees)[2] are accountable for these discharges under the terms and conditions of their NPDES Storm Water Permits. Caltrans and the Chollas Creek Watershed Copermittees will also be accountable for achieving the compliance with the diazinon waste load reductions in the Total Maximum Daily Load (TMDL)[3] when the waste load reductions are incorporated into their NPDES permits.

2. **Discharge of Waste**: During TMDL development, numerous user groups were found to use diazinon in the Chollas Creek watershed. Most applications are thought to occur in and around residential, commercial and industrial settings, which led to the transport of diazinon to Chollas Creek via the storm water conveyance system.

   Metals, such as copper, lead, and zinc, enter surface waters from point and nonpoint sources. Point sources typically discharge at a specific location from pipes, outfalls, and conveyance channels from municipal wastewater treatment plants, industrial waste treatment facilities, and storm water discharges. Nonpoint sources are diffuse sources that reach receiving waters from different routes of entry and originate from multiple land uses. Essentially all sources (point and nonpoint) watershed are discharged through the Municipal Separate Storm Sewer Systems (MS4) into Chollas Creek waters.

3. **Condition of Pollution**: Chollas Creek is located in the Chollas hydrologic sub area within the San Diego Mesa hydrologic area of the Pueblo San Diego hydrologic unit. This sub area is designated with Contact Water Recreation, Non-Contact Water Recreation, Warm

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[1] Order No. 99-06-DWQ, NPDES No. CAS000003, '*National Pollutant Discharge Elimination System (NPDES) Permit Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (CalTrans)'*

[2] Order No. 2001-01, NPDES No CAS0108758, '*Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer System (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District.'*

[3] Resolution No. R9-2002-0123, Chollas Creek Diazinon Total Maximum Daily Load, 14 August 2002.

Freshwater Habitat and Wildlife Habitat Beneficial Uses as found in the Water Quality Control Plan for the San Diego Basin.[4]

a. The pesticide diazinon is present in Chollas Creek in concentrations that exceed the California Department of Fish and Game Water Quality Criteria for the protection of freshwater aquatic organisms.[3] Exceedance of these criteria indicates violation of the Toxicity and Pesticide Water Quality Objectives of the Water Quality Control Plan for the San Diego Basin (9) (Basin Plan).

b. Storm water concentrations of dissolved copper, lead and zinc (metals) in Chollas Creek frequently exceed California Toxics Rule (CTR)[5] criteria since 1994.[6] These exceedances demonstrate violation of the Toxicity and Pesticide Water Quality Objectives of the Basin Plan.

c. Diazinon and the metals copper and zinc were identified to cause toxicity to freshwater organisms in laboratory tests conducted as part of a Toxicity Identification Evaluation (TIE).[3]

These circumstances demonstrate that a condition of pollution exists in Chollas Creek due to diazinon, copper, zinc and lead. The condition of pollution led to the development of a Total Maximum Daily Load (TMDL) for diazinon in Chollas Creek in 2002. The TMDL was amended to the Basin Plan upon U.S. Environmental Protection Agency (USEPA) approval in November 2003. The Regional Board is preparing a Basin Plan amendment to establish the TMDL for dissolved metals in Chollas Creek.

4. **Need for Status and Monitoring Program Reports**: Several implementation elements of the TMDL (i.e. use of legal authority, Integrated Pest Management Workshop, Diazinon Toxicity Control Plan) must be completed to achieve the adopted diazinon waste load reductions (an approximately 90 percent reduction in creek diazinon concentrations). Status reports on the implementation of these elements are necessary to assess discharger compliance with the TMDL and the resulting reductions of diazinon loads in Chollas Creek.

Although non-agricultural uses of diazinon are being phased out, monitoring concentrations of diazinon in the creek is still necessary to ensure compliance with the TMDL load allocations, protection of the creek's beneficial uses and to continue to properly assess the condition of pollution due to diazinon in Chollas Creek. Likewise, monitoring concentrations of metals in Chollas Creek is needed to continue to properly assess the condition of pollution due to metals. Monitoring of diazinon and metals also is necessary to assess the condition of toxicity that led to the original Clean Water Act Section 303(d) listing.[2] Therefore, comprehensive reports detailing monitoring program methods and results are needed.

5. **Regulatory Authority and Necessity**: California Water Code Section 13383 authorizes the Regional Board to require monitoring and reporting for any person discharging pollutants into waters of the United States. The technical and monitoring information obtained from

[4] Regional Board. 1994. Water Quality control plan for the San Diego basin (9).
[5] Title 40 Code of Federal Regulations section 131.38
[6] Storm water monitoring results as contained in Regional Board file 79-0048.02.

the monitoring reports and status reports will allow the Regional Board to assess the condition of pollution due to dissolved metals and diazinon in the creek and the overall efficacy of the Diazinon TMDL implementation plan. These actions will result in the eventual restoration and protection of the water quality necessary to support the designated beneficial uses of the creek. The associated costs bear a reasonable relationship to the need for the actions, specifically the protection of water quality and beneficial uses in Chollas Creek.

6. **California Environmental Quality Act**: This action is an order to enforce the laws and regulations administered by the Regional Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act pursuant to section 15308 of the California Public Resources Code.

IT IS HEREBY ORDERED, pursuant to Water Code section 13383, that the dischargers shall furnish the following reports required by the Regional Board in its investigation of the quality of waters of the State within the area of the discharge described in the above findings:

1. Reports on the results of monitoring, including a time schedule, showing whether or not the dischargers are complying with the Chollas Creek diazinon TMDL. At a minimum, the reports shall contain the following:

   a. Concentrations of water column diazinon measured during 3 storm events annually.

      i) Storm water samples shall be collected using a flow-weighted composite sampling strategy during the wet-weather season in a manner identical (except for station locations which are addressed below) to the current municipal storm water-monitoring program.[3] In Order No. 2001-01, the municipal storm water wet-weather season is defined as October 1 through April 30 of each year. Sampling shall be conducted during the first two (2) storm events of the wet- weather season which meet the USEPA's criteria as described in Title 40 CFR section 122.21(g)(7).[7] For the third storm event, sampling is to take place during the first event after February 1 that meets the USEPA's criteria. The key components of USEPA's storm event criteria [FCR section122.21 (g)(7)] are summarized below.

         - A rainfall of at least one-tenth (0.1) inch in the drainage area.
         - No storm event in excess of one-tenth (0.1) inch in the drainage for at least seventy-two (72) hours prior to the sampled storm event.
         - A storm event within plus or minus fifty (50) percent of the average or median storm volume and duration for the region.

      ii) The analytical method shall achieve the diazinon reporting limit of 0.05 µg/L. The monitoring program shall use the USEPA analytical chemistry method for diazinon (e.g., USEPA method 8141A). Alternatively, an equivalent test method may be used in conjunction with the USEPA analytical chemistry method. The diazinon analytical chemistry method USEPA 8141A has a detection limit of 0.20 µg/L, so

[7] For the purpose of the Monitoring and Reporting Program the federal requirement that there be a one (1) month separation between storm event samples is not required in this order.

when using this method, extracting diazinon from a sufficient volume of sample to reach the 0.05 µg/L reporting limit is necessary.

If an equivalent test method (ELISA) is used for diazinon testing of ambient water in Chollas Creek, an external standard shall be quantified during every field survey. Split samples for quality assurance must document acceptable accuracy and precision of the equivalent test method. At least 10 percent of the samples measured with ELISA kits are to be measured with the USEPA analytical chemistry method for quality assurance comparisons.

iii) Samples shall be collected for water column diazinon concentrations on the Chollas Creek south fork at the former Department of Pesticide Regulation (DPR) sample station 2 and at the existing Municipal Storm Water Program sample site SD-8 (1) on the north fork.

b. Concentrations of diazinon in sediment shall be reported for at least three locations in Chollas Creek.

i) The samples shall be analyzed using USEPA method 8141A at a detection level of 20 µg/kg.

ii) One station shall be located in each of the north and south forks, upstream of the confluence of the two forks. The third station shall be located near the mouth of the creek, but upstream of tidal influences.

c. Concentrations of total and dissolved copper, lead and zinc and hardness (as calcium carbonate) collected during three storm events annually.

i) Sampling shall be as described for water column diazinon above.

ii) The analytical method and reporting limit shall be as in the following table:

Constituent	Method	Reporting Limit
Total and Dissolved Copper	USEPA 200.8	5.0 µg/L
Total and Dissolved Lead	USEPA 200.8	0.5 µg/L
Total and Dissolved Zinc	USEPA 200.8	20.0 µg/L
Hardness (as CaCO3)	Standard Method 2340 B	1 mg/L

d. The monitoring and reporting program shall include, at a minimum, one (1) 96-hour acute and one (1) 7-day chronic toxicity bioassay of ambient water in Chollas Creek using the water flea, *Ceriodaphnia dubia* during each of three (3) storm events at the mass loading station SD8 (1) and the DPR 2 sites per year.

i) The method to be used in the chronic toxicity testing shall be "Survival and Reproduction Test Method 1002.0, Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, USEPA/600/4-91/002"[1] for *Ceriodaphnia dubia.*

ii) The methods to be used in the acute toxicity testing will be those outlined for a 96-hour acute test in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, USEPA/600/4-90/027F."[1]

iii) The results of ambient chronic and acute water toxicity testing shall be reported as shown in the table below.

Description of Reporting Values	96-hour Acute	7-day Chronic
Mean % survival for control	Yes	Yes
% Survival in 100% concentration	Yes	Yes
Lethal concentration 50% (LC_{50})	Yes	Yes
No-Observed-Effect-Concentration (NOEC reproduction) –	Not Applicable	Yes
Lowest-Observed-Effect-Concentration (LOEC) -	Yes	Yes
Toxic-Unit for acute effects (TU_a) – The TU_a equals $100/NOEC_{survival}$	Yes	Not Applicable
Toxic-Unit for chronic effects (TU_c) – The duration of exposure (in the original, 100% sample) that causes mortality in fifty percent (50%) of the test population.	Not Applicable	Yes
TU_c sublethal (reproduction) The TU_c equals $100/NOEC_{reproduction/growth}$	Not Applicable	Yes
Lethal-Time for 50% mortality (LT_{50})	Yes	Yes

e. All sampling for metals, hardness and toxicity shall be conducted at the same times and at the same locations as described for water column diazinon above.

f. All field and laboratory handling shall be conducted using "clean techniques." The monitoring program shall develop and implement a QA/QC plan for field and laboratory operations.

i) The QA/QC plan for field operations shall cover the following, at a minimum:
- Quality assurance objectives;
- Sample container preparation, labeling and storage;
- Chain-of-custody tracking;
- Field setup;
- Sampler equipment check and setup;
- Sample collection;
- Use of field blanks to assess field contamination;

- Use of field duplicate samples;
- Transportation to the laboratory;
- Training of field personnel; and
- Evaluation, and enhancement if needed of the QA/QC plan.

ii) The QA/QC plan for laboratory operations shall cover the following, at a minimum:

- Quality assurance objectives;
- Organization of laboratory personnel, their education, experience, and duties;
- Sample procedures;
- Sample custody;
- Calibration procedures and frequency;
- Analytical procedures;
- Data reduction, validation, and reporting;
- Internal quality control procedures;
- Performance and system audits;
- Preventive maintenance;
- Assessment of accuracy and precision;
- Correction actions; and a
- Quality assurance report.

Furthermore, the QA/QC plan shall meet the standards as set forth in the Quality Assurance Project Plan (QAPP) for the State of California's Surface Water Ambient Monitoring Program (SWAMP). The SWAMP QAPP can be found on the world wide web at: http://www.swrcb.ca.gov/swamp/index.html. An adequate QA/QC plan shall be submitted to the Regional Board 30 days before commencement of initial monitoring activities.

g. Annual reports shall cover the period of July 1 through June 30. The reports shall be submitted to the Regional Board by January 31 of the following year and shall be incorporated within the annual receiving water monitoring reports required in Table 6, Item 28, page 51 of NPDES Order No. 2001-01.

h. The first monitoring report shall be due in January 2006. Reporting shall continue on an annual basis until beneficial uses impaired by dissolved metals and diazinon in Chollas Creek have been restored and maintained.

2. Reports on the implementation of other elements necessary to assess and reduce the continued toxicity of diazinon in Chollas Creek. The reports shall include the following:

a. Information on how the Copermittees have implemented their legal authority to remedy the condition of pollution. This information shall include a description of plans and schedules for enforcing existing local ordinances, and the adoption of new legal authorities, as needed to ensure Copermittee compliance with the waste load allocations specified in the Basin Plan.

b. Information on the efficacy and date of the Integrated Pest Management Workshop conducted in the Chollas Creek Watershed.

c. Information on the implementation and efficacy of a Diazinon Toxicity Control Plan. The plan's goal shall be to promote Copermittee compliance with the waste load allocations specified in the Basin Plan. The Plan shall consist of pollution prevention and source control best management practices designed to reduce the discharge of diazinon to Chollas Creek. The "pesticide component" of the education program currently under development by the Copermittees pursuant to NPDES Order No. 2001-01 can serve as the Diazinon Toxicity Control Plan required by the TMDL.

d. Information on the implementation and efficacy of a Diazinon Public Outreach / Education Program. The program shall be designed to reduce the discharge of diazinon in the Chollas Creek watershed. By reducing the discharge of diazinon, the program will promote Copermittee compliance with the waste load allocations specified in the TMDL. The program shall contain the components described in Attachment M of the Chollas Creek Diazinon TMDL, or equivalent component. The Program shall also contain an evaluation plan for determining the efficacy of the Public Outreach / Education Program. The Diazinon Public Outreach / Education Program may be incorporated into the Diazinon Toxicity Control Plan.

e. This report shall be incorporated in the annual Watershed Specific Urban Runoff Management Plan due each January.

4. The reports required by this order must meet all the requirements of Investigation Order No. R9-2004-0277. All work must be done under the direct supervision of the professional who signs the document. By signing these documents the professional takes full responsibility as the responsible professional in charge of work and for the content of the documents. If preparation of the reports involves the professional practice of geology or civil engineering as specified in Business and Professions Code sections 6703 and 7805, the reports shall also be signed by the registered professional in responsible charge of geologic or civil engineering work.

5. The reports shall be submitted with a transmittal letter signed by an officer or agent of the Copermittees. The transmittal letter shall include a statement by the officer of the Copermittees stating that, under penalty of perjury, to the best of the signer's knowledge the document is true, complete, and correct. All documents requiring signature shall be signed per the requirements of Order No. 2001-01, Attachment C, Section B.9.a (#3), as follows:

For a municipality, State, Federal or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (a) the chief executive officer of the agency; or (b) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of the USEPA).

The submitted reports shall include the following signed certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those

persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

6. Pursuant to Water Code section 13383, the Regional Board may inspect the site to ascertain whether the purposes of this order are being met. The inspection shall be made with the consent of the owner or possessor of the area, or if the consent is withheld, with a warrant duly issued pursuant to the procedure set forth in Title 13 (commencing with Section 1822.50) of Part 3 of the Code of Civil Procedure.

Ordered by:

_/original signed by/____
John H. Robertus
Executive Officer

Date Issued: 13 August 2004