

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

**MONITORING AND REPORTING PROGRAM NO. 1449**

**for  
U.S. BORAX, INCORPORATED  
(WILMINGTON REFINERY)  
(CA0000787)**

**I. Reporting Requirements**

- A. U.S. Borax, Incorporated, Wilmington Refinery (hereinafter Borax or Discharger) shall implement this monitoring program on the effective date of this Order. All monitoring reports shall be submitted quarterly and must be received by the Regional Board by the dates in the following schedule. All monitoring reports should be addressed to the Regional Board, Attention: Information Technology Unit. The first monitoring report under this Program is due by January 15, 2004.

<b>Reporting Period</b>	<b>Report Due</b>
January – March	April 15
April – June	July 15
July-September	October 15
October-December	January 15

If there is no discharge during any reporting period, the report shall so state.

- B. The Discharger shall submit an annual summary report (for both dry and wet weather discharges), containing a discussion of the previous year's effluent and receiving water monitoring data, as well as graphical and tabular summaries of the data. The data shall be submitted to the Regional Board on hard copy and on a 3 ½ " computer diskette. Submitted data must be IBM compatible, preferably using EXCEL software. This annual report is to be received by the Regional Board by March 1 of each year following the calendar year of data collection.
- C. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.
- D. The Discharger shall inform the Regional Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements.

## II. Effluent Monitoring Requirements

- A. A sampling station shall be established for each point of discharge and shall be located where representative samples of that effluent can be obtained. The Discharger is required to report total daily flow values measured by the flow totalizer.
- B. This Regional Board shall be notified in writing of any change in the sampling stations once established or in the methods for determining the quantities of pollutants in the individual waste streams.
- C. Pollutants shall be analyzed using the analytical methods described in 40 CFR sections 136.3, 136.4, and 136.5 (revised May 14, 1999); or, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board. Laboratories analyzing effluent samples and receiving water samples shall be certified by the California Department of Health Services and must include quality assurance/quality control (QA/QC) data in their reports.

The monitoring reports shall specify the analytical method used, the Method Detection Limit (MDL), and the Minimum Level (ML) for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported by one of the following methods, as appropriate:

1. An actual numerical value for sample results greater than or equal to the ML; or,
2. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML; or,
3. "Not-Detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used.

Current MLs (Attachment B) are those published by the State Water Resources Control Board in the *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, March 2, 2000*.

- D. Where possible, the MLs employed for effluent analyses shall be lower than the permit limitations established for a given parameter. If the ML value is not below the effluent limitation, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year, the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory QA/QC procedures.

The Regional Board, in consultation with the State Board Quality Assurance Program, shall establish a ML that is not contained in Attachment B to be included in the Discharger's permit in any of the following situations:

1. When the pollutant under consideration is not included in Attachment B;
  2. When the Discharger and Regional Board agree to include in the permit a test method that is more sensitive than that specified in 40 CFR Part 136 (revised May 14, 1999);
  3. When the Discharger agrees to use an ML that is lower than that listed in Attachment B;
  4. When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment B, and proposes an appropriate ML for their matrix; or,
  5. When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the Discharger, the Regional Board, and the State Board shall agree on a lowest quantifiable limit and that limit will substitute for the ML for reporting and compliance determination purposes.
- E. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be submitted with the Annual Report.
- F. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR section 136.3. All QA/QC items must be run on the same dates the samples were actually analyzed, and the results shall be reported in the Regional Board format, when it becomes available, and submitted with the laboratory reports. Proper chain of custody procedures must be followed, and a copy of the chain of custody shall be submitted with the report.
- G. If applicable, annual effluent analyses shall be performed during the month of February. Results of annual analyses shall be reported in the appropriate quarterly monitoring report.
- H. All analyses shall be accompanied by the chain of custody, including but not limited to data and time of sampling, sample identification, and name of person who performed sampling, date of analysis, name of person who performed analysis, QA/QC data, method detection limits, analytical methods, copy of laboratory certification, and a perjury statement executed by the person responsible for the laboratory.

- I. Quarterly effluent analyses shall be performed during the months of February, May, August and November. Annual effluent analyses shall be performed during the month of February.

**III. Effluent Monitoring Program**

- A. The effluent monitoring program for the discharge of single-pass, non-contact cooling seawater from Discharge Serial No. 001 is:

Constituent	Units	Type of Sample	Sampling Frequency
Flow	gal/day	----	daily
pH	standard units	grab	weekly
Temperature	° F	grab	daily
Total suspended solids	mg/L	grab	quarterly
Turbidity	NTU	grab	quarterly
Settleable solids	mg/L	grab	quarterly
BOD <sub>5</sub> 20°C	mg/L	grab	quarterly
Sulfides	mg/L	grab	quarterly
Oil and grease	mg/L	grab	quarterly
Phenols	mg/L	grab	quarterly
Residual chlorine	mg/L	grab	daily
MBAS (as detergents)	mg/L	grab	quarterly
4-4-DDT	µg/L	grab	quarterly
Alpha-BHC	µg/L	grab	quarterly
Beta-BHC	µg/L	grab	quarterly
Copper	µg/L	grab	quarterly
Lead	µg/L	grab	quarterly
Zinc	µg/L	grab	quarterly
Toxicity-acute	% survival	grab	quarterly <sup>1</sup>
Toxicity-chronic	TU <sub>c</sub>	grab	quarterly <sup>1</sup>
Priority pollutants except asbestos	µg/L	grab	annually

<sup>1</sup> Quarterly for at least four sampling events. If all samples demonstrate compliance with the chronic toxicity-testing trigger, sample frequency can be decreased to annually. If a subsequent sample exceeds the trigger, the sample frequency reverts back to quarterly.

#### IV. Toxicity Monitoring Requirements

##### A. Acute Toxicity Effluent Monitoring Program

1. The Discharger shall conduct acute toxicity tests on effluent grab samples by methods specified in 40 CFR Part 136 which cites USEPA's *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*, Fifth Edition, October, 2002 (EPA/821-R-02-012) or a more recent edition to ensure compliance in 100 % effluent.
2. The fathead minnow, *Pimephales promelas*, shall be used as the test species for fresh water discharges and the topsmelt, *Atherinops affinis*, shall be used as the test species for brackish effluent. The method for topsmelt is found in USEPA's *Short-term Method for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, First Edition, August 1995 (EPA/600/R-95/136).

On November 15, 2001, the Regional Board modified acute toxicity testing requirements for Borax by replacing the existing test species with topsmelt, *Atherinops affinis*. The Discharger will continue to use the test species topsmelt for acute toxicity testing.

3. In lieu of conducting the standard acute toxicity testing with the fathead minnow, the Discharger may elect to report the results or endpoint from the first 48 hours of the chronic toxicity test as the results of the acute toxicity test.
4. Effluent samples shall be collected after all treatment processes and before discharge to the receiving water.

##### B. Chronic Toxicity Effluent Monitoring Program

1. The Discharger shall conduct critical life stage chronic toxicity tests on 24-hour composite 100 percent effluent samples in accordance with EPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002 (EPA/821-R-02-013) or EPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition, October 2002, (EPA/821-R-014).
2. Effluent samples shall be collected after all treatment processes and before discharge to the Los Angeles Harbor.

Test Species and Methods:

- a. The Discharger shall conduct tests as follows: with a vertebrate, an invertebrate, and a plant for the first three suites of tests. After the screening period, monitoring shall be conducted using the most sensitive species.
- b. Re-screening is required every 15 months. The Discharger shall re-screen with the three species listed above and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrates that the same species is the most sensitive than re-screening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.
- c. The presence of chronic toxicity shall be estimated as specified using West Coast marine organisms according to EPA's *Short-Term Methods for Estimating Chronic Toxicity of Effluent and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002 (EPA/821-R-02-013).

C. Quality Assurance

1. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).
2. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manuals (EPA/600/4-91/002 and EPA/600/R-95/136), then the Discharger must re-sample and re-test at the earliest time possible.
3. Control and dilution water should be receiving water or laboratory 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 be used.

D. Accelerated Monitoring

1. If toxicity exceeds the limitations (as defined in Order No. R4-2003-0117, Sections I.C.2.a.1. and 1.C.3.b.1), then the Discharger shall immediately implement accelerated testing as specified in Sections I.C.2.a.2 and 1.C.2.b.2. The Discharger shall ensure that they receive results of a failing acute toxicity test within 24 hours of the close of the test and the additional tests shall begin

within 3 business days of the receipt of the result. If the accelerated testing shows consistent toxicity, the Discharger shall immediately implement the Initial Investigation of the Toxicity Reduction Evaluation (TRE) Workplan.

2. If implementation of the initial investigation TRE Workplan indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger may discontinue the Toxicity Identification Evaluation (TIE).
3. The first step in the initial Investigation TRE Workplan for downstream receiving water toxicity can be a toxicity test protocol designed to determine if the effluent from Outfall 001 causes or contributes to the measured downstream chronic toxicity. If this first step TRE testing shows that the Outfall 001 effluent does not cause or contribute to downstream chronic toxicity, using EPA's Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, October 2002, (EPA/821-R-02-014). Then a report on this testing shall be submitted to the Board and the TRE will be considered to be completed. Routine testing in accordance with MRP No. 1449 shall be continued thereafter.

E. Steps in TRE and TIE procedures:

1. Following a TRE trigger, the Discharger shall initiate a TRE in accordance with the facility's initial investigation TRE workplan. At a minimum, the Discharger shall use EPA manuals EPA/600/2-88/070 (industrial) or EPA/833B-99/002 (municipal) as guidance. The Discharger shall expeditiously develop a more detailed TRE workplan for submittal to the Executive Officer within 30 days of the trigger, which will include, but not be limited to:
  - a. Further actions to investigate and identify the cause of toxicity;
  - b. Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity;
  - c. Standards the Discharger will apply to consider the TRE complete and to return to normal sampling frequency; and,
  - d. A schedule for these actions.
2. The following is a stepwise approach in conducting the TRE:
  - a. Step 1 - Basic data collection. Data collected for the accelerated monitoring requirements may be used to conduct the TRE:

- b. Step 2 - Evaluates optimization of the treatment system operation, facility housekeeping, and the selection and use of in-plant process chemicals;
- c. If Steps 1 and 2 are unsuccessful, Step 3 implements a TIE and employment of all reasonable efforts and using currently available TIE methodologies. The objective of the TIE is to identify the substance or combination of substances causing the observed toxicity;
- d. Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options;
- e. Step 5 evaluates in-plant treatment options; and,
- f. Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of implementation of these control measures may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there is no longer toxicity (or six consecutive chronic toxicity results are less than or equal to 1.0 TU<sub>c</sub>).

- 3. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the EPA acute and chronic manuals, EPA/600/6-91/005F (Phase I)/EPA/600/R-96-054 (for marine), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III) as guidance.
- 4. Toxicity tests conducted as part of a TRE/TIE may also be used for compliance, if appropriate.
- 5. The Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

#### F. Reporting

1. The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month as required by this permit. Test results shall be reported as in Toxicity Units ( $TU_a$  or  $TU_c$ ) with the discharge monitoring reports (DMR) for the month in which the test is conducted.
2. If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, then those results also shall be submitted with the DMR for the period in which the investigation occurred.
  - a. The full report shall be submitted on or before the end of the month in which the DMR is submitted.
  - b. The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the acute toxicity average limit or chronic toxicity limit or trigger; and (4) printout of the toxicity program results (ToxCalc or CETIS).
3. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the DMR. Routine reporting shall include, at a minimum, as applicable, for each test:
  - a. Sample date(s);
  - b. Test initiation date;
  - c. Test species;
  - d. End point values for each dilution (e.g., number of young, growth rate, percent survival);
  - e. NOEC value(s) in percent effluent;
  - f.  $IC_{15}$ ,  $IC_{25}$ ,  $IC_{40}$  and  $IC_{50}$  values in percent effluent;
  - g.  $TU_c$  values  $\left( TU_c = \frac{100}{NOEC} \right)$ ;
  - h. Mean percent mortality ( $\pm$ standard deviation) after 96 hours in 100% effluent (if applicable);
  - i. NOEC and LOEC values for reference toxicant test(s);
  - j.  $C_{25}$  value for reference toxicant test(s);
  - k. Any applicable charts; and
  - l. Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).
4. The Discharger shall provide a compliance summary, which includes a summary table of toxicity data from at least eleven of the most recent samples.

The Discharger shall notify by telephone or electronically, this Regional Board of any toxicity exceedance of the limit or trigger within 24 hours of receipt of the results followed by a written report within 14 calendar days of receipt of the results. The verbal or electronic notification shall include the exceedance and the plan the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

#### V. Receiving Water Monitoring Requirements

The receiving water monitoring program shall consist of periodic surveys of receiving water and shall include studies of those physical-chemical characteristics of the receiving water that may be impacted by the discharge.

1. Receiving Water Monitoring. The receiving water shall be monitored for the following constituents:

Constituent	Units	Type of Sample	Sampling Frequency
pH	Standard units	grab	weekly
Temperature	° F	grab	weekly

2. Receiving Water Observations. General observations of the receiving water shall be made at each discharge point on a monthly basis and shall be reported in the quarterly monitoring report. If no discharge occurred during the observation period, this shall be reported.

Observations shall be descriptive where applicable, such that colors, approximate amounts, or types of materials that are apparent. The following observations shall be made:

- a. Tidal stage, time, and date of monitoring
- b. Weather conditions
- c. Color of water
- d. Appearance of oil films or grease, or floatable materials
- e. Extent of visible turbidity or color patches

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- f. Direction of tidal flow
- g. Description of odor, if any, of the receiving water
- h. Presence and activity of California Least Tern and California Brown Pelican.

Ordered by: \_\_\_\_\_  
Dennis A. Dickerson  
Executive Officer

Date: September 11, 2003