

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**ORDER NO. R2-2005-0010  
NPDES PERMIT NO. CA0005185**

**WASTE DISCHARGE REQUIREMENTS FOR:**

**MORTON INTERNATIONAL, INC., MORTON SALT DIVISION, NEWARK  
FACILITY  
ALAMEDA COUNTY**

**Board Hearing Date: April 20, 2005**

**Effective: July 1, 2005**

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**NPDES PERMIT NO. CA0005185**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:**

**MORTON INTERNATIONAL, INC., MORTON SALT DIVISION,  
NEWARK FACILITY, ALAMEDA COUNTY**

**FINDINGS**

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. Morton International, Inc., Morton Salt Division, hereinafter referred to as the Discharger, applied to the Board, for reissuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

**Facility Description**

2. The Discharger owns and operates a facility located at 7380 Morton Avenue, Newark, Alameda County, for the manufacture of salt. The Discharger purchases crude salt harvested from bay water. The salt is separated by centrifuge into large and small crystals. Larger crystals are washed and dried for non-food grade products. Smaller crystals are dissolved and recrystallized in a multi-stage evaporator system for food grade products. **Attachment A** of this Order is a site location map. **Attachment B** shows the process flow diagram.
3. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have classified this Discharger as a minor discharger.

**Purpose of Order**

4. This NPDES permit regulates the discharge of effluent from the facility, which was previously regulated by Waste Discharge Requirements specified in Order No. 97-025 (the previous Order or the previous permit), adopted by the Board on February 19, 1997. This Order rescinds the requirements of Order No. 97-025.

**Discharge Description**

5. The waste discharge through Outfall E-001 consists of intermittent overflow from a cooling water pond, residual water from a well water sand separator, and facility storm water runoff from approximately eleven acres. The facility operates two wells for process and cooling water supply. The pond water is circulated through contact condensers, where it condenses vapor from the multiple-effect evaporators through direct contact, and the combined stream is then returned to the pond for cooling. Prior to discharge, the pH of the pond wastewater is reduced by carbon dioxide addition and aeration. Algae growth in the cooling water pond can cause the pH to exceed the 9.0 pH unit effluent

limit and lead to high level of suspended solids. Boiler blowdown water is discharged to a sanitary sewer.

6. Based on information provided by the Discharger in its Report of Waste Discharge (ROWD), the facility discharges an average flow of 43,200 gallons per day (gpd) of treated wastewater from the northwest portion of the site at Outfall-001 (located approximately at latitude 35' 30" 00° and longitude 122' 02" 00°) to a drainage channel that leads to the Alameda County Flood Control Ditch Line F-1, which is a tributary to Plummer Creek and ultimately to South San Francisco Bay. Discharge occurs intermittently, and mostly during the wet weather season, with extended periods of no discharge during the summer months. Less or no discharge occurs on weekdays when the crystallizer set is in operation, and more discharge occurs on the weekends, when the pans are typically not operating.
7. *Effluent Characterization.* Tables 1 and 2, below, characterize the discharge and are based on the Discharger's ROWD, self-monitoring reports, and monitoring performed in response to Board's August 6, 2001, 13267 letter (see Finding 57 below).

**Table 1. Effluent Characteristics of Conventional Pollutants (1/1/2002 – 12/31/2004)**

	Minimum	Maximum	Median	No. of Analyses
Biochemical Oxygen Demand (BOD - mg/L)	5.0	21	5.2	31
Chemical Oxygen Demand (COD – mg/L)	120	120	120	1
Total Organic Carbon (TOC – mg/L)	7.9	7.9	7.9	1
Total Suspended Solids (TSS – mg/L)	1.1	48	21	113
Settleable Matter (ml/L-hr)	< 0.1	0.2	< 0.1	94
Turbidity (NTU)	5.1	75	14	11
Flow (gpd)	0.0	450,700	3,200	1,095
Temperature (° F)	50	88	68	668
pH Range (standard units)	6.6	10.2	7.7	1,344
Acute Toxicity (percent survival, Rainbow Trout)	95 %	100 %	100 %	13
Phenolics (µg/L)	<20	0.02	<20	6

**Table 2. Effluent Characteristics of Metals (Based on Discharger's 13267 Monitoring, 9/2001-2/2004)**

Pollutant	Range of Reported Data (µg/L)	Long Term Average <sup>1</sup> (µg/L)	No. of Analyses
Antimony	<0.02 – 0.8	0.16	8
Arsenic	0.6 – 13.3	8.2	9
Beryllium	< 0.1	All ND	8
Cadmium	< 0.02 – <0.5	All ND	10
Total Chromium	0.3 – 366	43	9
Hexavalent Chromium	< 2	All ND	5
Copper	1.9 – 46.1	24.1	9
Lead <sup>2</sup>	<0.01 – 110	12.0	16
Mercury	0.0011 – 0.0051	0.0037	9
Nickel <sup>3</sup>	1 – 16	10.2	8
Selenium	2.2 – 41	29.1	7
Silver	<0.08 – 1.55	0.54	8
Thallium	<0.01 – 0.3	0.05	7
Zinc <sup>2</sup>	<0.3 – 113	21.5	17
Cyanide	<2 – < 10	All ND	8

- 1 Analytical results reported as ND (non detectable concentrations) were included in the determination of the average value by using the method half detection limit, when the analytical result was reported as ND.
- 2 The data summary is based on the effluent data from March 1998 through February 2004.
- 3 The maximum reported value of 320 µg/L for nickel was excluded from the analysis as it was statistically determined to be an outlier, based on a lognormal distribution.

8. The cooling pond can have high algal growth, which can lead to elevated pH and suspended solids. Currently, the Board has not approved the use of any algaecides, which generally contain copper or other priority pollutants. Due to the difficulties in obtaining algaecides, the Discharger experimented with various algae removal methods such as algae harvesting, biological treatment with species of algae consuming water fleas, and reduced exposure to sun light. The experiments concluded that none of the above methods are consistently reliable in reducing the concentration of total suspended solids. Consequently, the prior permit (Order No. 97-025) relaxed the suspended solids effluent limitations due to events beyond the Discharger's control and for which there is no reasonably available remedy. This was done under Section 402(o)(2)(c) of the Clean Water Act. This Order retains the prior permit's effluent limitation for suspended solids.
9. On average, the Discharger reclaims approximately 400 gallons per day of its wastewater, for lawn irrigation.

**Applicable Plans, Policies, and Regulations**

10. Water quality objectives (WQOs), water quality criteria (WQC), effluent limitations, and calculations contained in this Order are based on the statutes, documents, and guidance detailed in Section III of the attached Fact Sheet.

**Beneficial Uses**

11. This Order intends to protect beneficial uses of the receiving water. Because the Basin Plan has not designated beneficial uses for the immediate receiving water (Alameda County Flood Control Ditch and Plummer Creek), this Order invokes the Basin Plan's Tributary Rule. The Tributary Rule

protects the beneficial uses of water bodies downstream of the immediate receiving water. Because Plummer Creek is a tributary to the South San Francisco Bay, designated beneficial uses for South San Francisco Bay are protected by this Order. The beneficial uses of South San Francisco Bay and its tributary waters, as identified in the *Water Quality Control Plan, San Francisco Bay Basin* (the Basin Plan, 1995), and based on known uses of the receiving waters, are:

- Ocean, Commercial, and Sport Fishing
- Estuarine Habitat
- Industrial Service Supply
- Fish Migration
- Navigation
- Preservation of Rare and Endangered Species
- Water Contact Recreation
- Noncontact Water Recreation
- Cold Freshwater Habitat
- Warm Freshwater Habitat
- Fish Spawning
- Wildlife Habitat
- Shellfish Harvesting

#### **Basin Plan Discharge Prohibition**

12. The Basin Plan (Table 4-1) contains a prohibition of discharge of any wastewater which has particular constituents of concern to beneficial uses (1) at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1; or (2) into any non-tidal water, dead-end slough, similar confined waters, or immediate tributaries thereof. In issuing the previous Order, the Board determined that these three prohibitions would not apply to the discharge because the discharge is considered a non-process wastewater discharge that does not contain characteristics of concern to beneficial uses, provided the discharge limitations contained in the Order are met. For this Order, the Board finds the exception from the discharge prohibition continues to be appropriate. Priority pollutants will specifically not be present in the discharge at levels of concern to beneficial uses because this Order: (1) finds only copper, lead, selenium, and dioxin TEQ, are currently observed in the discharge at levels that could cause exceedances of water quality criteria, (2) requires specific compliance schedules for copper, lead, selenium, zinc, dioxin TEQ, and cyanide to achieve water quality-based effluent limits that are protective of beneficial uses, and (3) establishes final water quality-based effluent limits for bis(2-ethylhexyl)phthalate.

#### **General Basis for Effluent Limitations**

##### ***Applicable WQOs***

13. The WQOs and WQC applicable to the receiving water of this discharge are from the Basin Plan, the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule or the CTR), and U.S. EPA's *National Toxics Rule* (the NTR).
- a. The Basin Plan specifies saltwater and freshwater numeric WQOs for 11 pollutants: arsenic, cadmium, chromium (VI), copper, cyanide, lead, mercury, nickel, silver, zinc, and total PAH.

- b. The Basin Plan includes narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The narrative toxicity objective states in part, “[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part, “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.
  - c. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries and are applicable over specific numeric objectives of the Basin Plan for South San Francisco Bay, south of the Dumbarton Bridge.
  - d. The NTR establishes numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Sacramento-San Joaquin Delta. The NTR, therefore, includes WQC that are applicable to the receiving water for this Discharger.
14. A Basin Plan Amendment adopted on May 22, 2002 (Board Resolution R2-2002-0061) and approved by the State Water Resources Control Board (State Board) on October 17, 2002 (State Board Resolution 2002-0151) established site-specific objectives (SSOs) and translators for copper and nickel in the South San Francisco Bay. U.S. EPA approved the SSOs on January 21, 2003. The SSOs were derived through U.S. EPA-approved methods and are fully protective of the most sensitive aquatic life beneficial uses in the South San Francisco Bay. SSOs in the South San Francisco Bay are 6.9 µg/L for a 4-day average and 10.8 µg/L for a 1-hour average for dissolved copper and 11.9 µg/L for a 4-day average and 62.4 µg/L for a 1-hour average for dissolved nickel.
  15. *Translators.* The SSOs also include metal translators for copper and nickel specific to South San Francisco Bay - 0.53 and 0.44 for converting dissolved to total recoverable metals, respectively. The translator development rationale and approach are discussed in the Staff Report to the May 22, 2002 SSO Basin Plan Amendment.
  16. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR Part 122.44 (d) specifies that water quality-based effluent limitations (WQBELs) may be set based on U.S. EPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQC to fully protect designated beneficial uses. The Fact Sheet for this permit discusses the specific bases and rationales for effluent limitations.
  17. On January 21, 2004, the Board adopted Resolution No. R2-2004-0003 to amend the Basin Plan. The changes relevant to the discharges to the South Bay south of Dumbarton Bridge include: (1) Change the Basin Plan definitions of marine, estuarine, and freshwater to be consistent with the CTR definitions, (2) Update NPDES implementation provisions to be consistent with the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan, or the SIP), and (3) other editorial changes. On October 4, 2004, the Office of Administrative Law (OAL) approved the Board’s Basin Plan Amendment. On January 5, 2005, U.S. EPA approved the amendment, with the exception of the fresh water criterion for cadmium.

### ***Basin Plan and CTR Receiving Water Salinity Policy***

18. The Basin Plan and CTR state that the salinity characteristics (i.e., freshwater versus saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or tidally influenced fresh waters that support estuarine beneficial uses, the criteria shall be the lower of the salt- or freshwater criteria (the freshwater criteria are calculated based on ambient hardness), for each substance.

### ***Receiving Water Salinity Classification***

19. The receiving water for the subject discharge, beyond the Alameda County Flood Control Ditch, is Plummer Creek, which is a tidally-influenced waterbody, with significant fresh water inflows during the wet weather season. By applying the Basin Plan Tributary Rule, the Plummer Creek also supports estuarine beneficial uses. Therefore, the effluent limitations specified in this Order are based on the lower of the marine and freshwater WQO and WQC of the Basin Plan, CTR and NTR.

### ***Receiving Water Ambient Background Data Used in Reasonable Potential Analysis (RPA)***

20. Ambient background values are used in the RPA. For the RPA, ambient background concentrations are the observed maximum water column concentrations. The Discharger has generated receiving water data from samples collected in 2002 to 2003. Samples were collected in Plummer Creek immediately upstream of the point where flow from the Alameda County Flood Control Ditch Line F-1 enters the creek. Organic constituents were measured twice, and metals were measured six times. These data are used in the RPA.

### ***Receiving Water Hardness***

21. Ambient (receiving water) hardness values are used to calculate certain freshwater WQOs/WQC. In two receiving water samples collected on June 23, 2002, and December 9, 2002, hardness concentrations were measured at 671 and 2,710 mg/L as calcium carbonate, respectively. These are very high hardness concentrations for fresh water but lower than ocean waters (typically near 5% hardness). Based on CTR guidance at 40 CFR 131.38 (c) (4), when receiving waters have a hardness concentration greater than 400 mg/L CaCO<sub>3</sub>, a hardness value of 400 mg/L is used to calculate hardness dependent WQOs, if the default Water-Effect Ratio (WER) of 1 is used. Alternatively, the actual hardness of the ambient surface water may be used with a measured WER. The latter alternative is not used, since no study to date has measured the WER's of the receiving water.

### ***Technology-Based Effluent Limitations***

22. Section 304 of the Clean Water Act requires that dischargers meet treatment levels based on the U.S. EPA's assessment of treatment technologies that are technically and economically achievable within the discharger's industry. EPA has therefore established national effluent guidelines for many types of dischargers and for many specific types of discharges within more than 50 industrial categories. These effluent guidelines are enforceable only through their incorporation into a NPDES permit. For dischargers in industrial categories for which U.S. EPA has not yet issued effluent guidelines and for types of discharges not covered by an applicable effluent guideline, the Board applies best professional judgment (BPJ), pursuant to authority established by Section 402 (a)(1) of the Clean Water Act and procedures established by U.S. EPA at 40 CFR 125.3 (c and d), to establish

technology-based effluent limitations. Because U.S. EPA has not established effluent guidelines for the discharge of cooling pond water, this Order has retained, from the previous Order, effluent limitations for total suspended solids (TSS), biochemical oxygen demand (BOD), settleable solids, pH, and oil and grease (O&G), which were established using BPJ.

### ***Water Quality-Based Effluent Limitations (WQBELs)***

23. Toxic substances are regulated by WQBELs derived from the Basin Plan (Tables 3-3 and 3-4), the CTR, and/or the NTR. WQBELs for acute toxicity are retained from the previous Order. This Order also establishes WQBELs for copper, lead, selenium, zinc, cyanide, dioxin TEQ, and bis(2-ethylhexyl)phthalate based on evaluation of the Discharger's monitoring data and the receiving water data, as described below under the RPA. Numeric WQBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given below and in the associated Fact Sheet.

- a. NPDES regulations, the SIP, and U.S. EPA's Technical Support Document (TSD) provide the basis to establish MDELs. NPDES regulations at 40 CFR 122.45 (d) state:

“For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as:

- (1) Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works.”

- b. The SIP (p. 8, Section 1.4) requires that WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs).
- c. The TSD (p. 96) states a maximum daily limitation is appropriate because the 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations, and therefore the discharge's potential for causing acute toxic effects would be missed. A maximum daily limitation would be toxicologically protective of potential acute toxicity impacts.

### ***TMDLs and Waste Load Allocations (WLAs)***

24. *Constituents Identified in the 303 (d) List.* Section 303(d) of the Clean Water Act requires states to identify waters for which implementation of technology-based effluent limitations have not been stringent enough to attain water quality standards for those waters. On June 6, 2003 the U.S. EPA approved the State's updated list of 303(d) impaired waters, which lists the South San Francisco Bay as impaired for chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, and selenium. Copper and nickel were delisted and placed on the new Monitoring List. Neither the Alameda County Flood Control Ditch Line F-1 nor Plummer Creek are included in the most recent 303(d) list. States are required to establish total maximum daily loads (TMDLs) for the specific pollutants and impaired waters identified on the 303(d) list. A TMDL is the amount of a particular pollutant that the specific waterbody can receive without violating state water quality standards.

25. The Board plans to adopt TMDLs for pollutants on the 303(d) list for the South San Francisco Bay by about 2010 with the exception of dioxin and furan compounds, which may require more time to address. The Board is deferring development of TMDLs for dioxin and furan compounds to the U.S. EPA. Future review of the 303(d) list for South San Francisco Bay may result in a revision of the schedule for TMDL development.
26. TMDLs will include waste load allocations (WLAs) and load allocations for point sources and non-point sources. Plummer Creek is a tributary to South San Francisco Bay and may thus contribute to its impairments. However, because Plummer Creek is not specifically on the 303(d) list, there is uncertainty whether the Discharger will be assigned WLAs. If the Discharger is assigned a WLA, the final effluent limitations for the 303(d)-listed pollutants may be based on them. The permit will be re-opened, as necessary, to adopt final QBELs, based on WLAs, as enforceable limitations.

### *Interim Effluent Limitations and Compliance Schedules*

27. The SIP and the Basin Plan authorize compliance schedules in a permit if an existing discharger cannot immediately comply with a new and more stringent effluent limitation. Compliance schedules for limitations derived from CTR or the NTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan WQOs are based on the Basin Plan. Both the SIP and the Basin Plan require the discharger to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule. The SIP and Basin Plan require the following documentation to be submitted to the Board to support a finding of infeasibility:
- Descriptions of diligent efforts the discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
  - Descriptions of source control and/or pollution minimization efforts currently under way or completed.
  - A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
  - A demonstration that the proposed schedule is as short as practicable.
28. Until final QBELs or WLAs are adopted for 303 (d)-listed pollutants, State and federal anti-backsliding and antidegradation policies and the SIP require that the Board include interim effluent limitations for them. The interim effluent limitations will be the lower of the current performance or the previous permit's limitations.

This Order establishes interim performance-based effluent limitations for copper, lead, selenium, and zinc, which are based on recent effluent data, and interim limitations for cyanide, which is based on the SIP minimum levels (MLs) for these two pollutants.

29. On February 14, 2005, the Discharger submitted a feasibility study (the Infeasibility Study), asserting it is infeasible to immediately comply with final QBELs established by this Order for copper, lead, selenium, cyanide, and zinc. Based on the Board staff's statistical analysis of recent self-monitoring data for these pollutants, the Board concurs that it is infeasible to achieve immediate compliance. For cyanide, since all effluent concentrations are non-detect and the detection limit is above the QBEL,

it is not possible to demonstrate immediate compliance with the WQBELs. Therefore, the MLs as given by the SIP are set as the interim limits for cyanide.

30. For limitations based on CTR criteria (lead and zinc), this Order establishes a compliance schedule not to go beyond May 18, 2010 as allowed by the SIP. For limitations based on NTR criteria (selenium and cyanide), this Order establishes a compliance schedule not to go beyond April 28, 2010 as allowed by the SIP. For limitations based on the Basin Plan (copper), this Order provides compliance schedules to implement measures to comply with new standards within 10 years from the effective date of those standards (May 22, 2012). As a result of applying the SIP methodologies, the effluent limitations for some pollutants are more stringent than those in the prior permit, and compliance schedules may be appropriate for the new limitations for those pollutants. The Board may take appropriate enforcement actions if interim limitations and requirements are not met.
31. This Order establishes compliance schedules that extend beyond one year for copper, lead, selenium, zinc, cyanide, and dioxin TEQ. Pursuant to the SIP and 40 CFR 122.47, the Board shall establish interim numeric limitations and interim requirements to control the pollutants. This Order establishes interim limitations for these pollutants based on the existing plant performance or ML. This Order also establishes interim compliance schedule requirements for the Discharger to develop and implement plans for reducing and controlling effluent pollutants to achieve compliance with the final limits specified in this Order.

#### ***Antibacksliding and Antidegradation***

32. The limitations in this Order are in compliance with the Clean Water Act Section 402 (o) prohibition against establishment of less stringent WQBELs for the following reasons:
  - (1) For impairing pollutants, the revised final limitations will be in accordance with TMDLs and WLAs once they are established.
  - (2) For nonimpairing pollutants, the final limitations are or will be consistent with current State WQOs/WQC.
  - (3) Antibacksliding does not apply to the interim limitations established under previous Orders.
  - (4) If antibacksliding policies apply to interim limitations under 402 (o) (2) (c), a less stringent limitation is necessary because of events over which the Discharger has no control and for which there is no reasonable available remedy, and/or new information is available that was not available during previous permit issuance.

The interim limitations in this Order are in compliance with antidegradation requirements and meet the requirements of the SIP, because the interim limitations hold the Discharger to performance levels that will not cause or contribute to water quality impairment or further water quality degradation.

#### ***Dilution and Assimilative Capacity***

33. Pursuant to Section 1.4.2 of the SIP, the Board may grant mixing zones and dilution credits, which allow applicable priority pollutant criteria and objectives to be met throughout a water body, except within a mixing zone approved by the Board. The Discharger has not requested a mixing zone. Also, because the discharge constitutes the only flow into the receiving water during most days of the year, a dilution credit and a mixing zone are not appropriate, and all effluent limitations apply to the end-of-pipe discharge.

## **Specific Basis for Effluent Limitations**

### ***Reasonable Potential Analysis***

34. As specified in 40 CFR 122.44 (d) (1) (i), permits are required to include WQBELs for all pollutants “which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard.” Using the method prescribed in Section 1.3 of the SIP, the Board has analyzed the receiving water and the effluent data to determine whether the discharge has a reasonable potential to cause or contribute to an excursion above a State water quality standard (reasonable potential analysis or RPA). For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the receiving water and the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the NTR and CTR.

### ***RPA Methodology***

35. The method for determining reasonable potential involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. There are three triggers in determining reasonable potential.
- (1) The first trigger (Trigger 1) is activated when the MEC is greater than the lowest applicable WQO/WQC, which has been adjusted for pH, hardness (for freshwater WQOs/WQC only), and translator data, if appropriate. If the MEC is greater than the adjusted WQO/WQC, then that pollutant has reasonable potential and a WQBEL is required.
  - (2) The second trigger (Trigger 2) is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC ( $B > WQO/WQC$ ), and either:
    - i. The MEC is less than the adjusted WQO/WQC ( $MEC < WQO/WQC$ ) or
    - ii. The pollutant was not detected in any of the effluent samples and all the detection levels are greater than or equal to the adjusted WQO/WQC.
  - (3) The third trigger (Trigger 3) is activated if a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC, or effluent and background data are unavailable or insufficient (e.g., all nondetects). A limit is required only under certain circumstances to protect beneficial uses.

### ***RPA Determinations***

36. Board staff conducted an RPA based on receiving water and effluent data collected from September 2001 through February 2004 for priority pollutants using the method prescribed in Section 1.3 of the SIP. Pursuant to Section 1.3 of the SIP, the RPA does not include dilution credit for any pollutant.
37. The MECs, WQOs/WQC, basis for the WQOs/WQC, background concentrations and reasonable potential conclusions are listed in Table 3 for all inorganic constituents analyzed. (Further details about the RPA can be found in the Fact Sheet.) Based on the RPA methodology in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above WQOs/WQC: copper, lead, selenium, zinc, cyanide, dioxin TEQ, and bis(2-ethylhexyl)phthalate.

**Table 3. Summary of RPA Results**

CTR No.	Pollutant	Lowest WQO/WQC (µg/L)	Basis <sup>[1]</sup>	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential (Trigger) <sup>[2]</sup>
1	Antimony	4,300	CTR, hh	71.1	3.9	No
2	Arsenic	36	CTR, sw	13.3	34.8	No
3	Beryllium	No criteria		< 0.1	< 0.1	
4	Cadmium	7.3	CTR, fw	< 0.02	< 0.02	No
5a	Chromium (III) or total	644	CTR, fw	366	22	No
5b	Chromium (VI)	11	CTR, fw	< 2	< 2	No
6	Copper	13	BP, SSO	46.1	57.7	Yes (#1)
7	Lead	8.5	CTR, sw	110	4.6	Yes (#1)
8	Mercury*	0.051	CTR, hh	0.0051	0.0136	No
9	Nickel	27	BP, SSO	20 <sup>[3]</sup>	16	No
10	Selenium*	5.0	NTR, fw	41	144	Yes (#1)
11	Silver	2.2	CTR, sw	1.55	< 0.08	No
12	Thallium	6.3	CTR, hh	0.3	0.17	No
13	Zinc	91	CTR, sw	113	117	Yes (#1)
14	Cyanide	1	NTR, sw	< 2	30	Yes (#2)
	Dioxin TEQ*	1.4 x10 <sup>-8</sup>	BP, hh	5.9x10 <sup>-6</sup>	60.1x10 <sup>-5</sup>	Yes (#1)
68	Bis(2-Ethylhexyl)Pht halate	5.9	CTR, hh	<2	7.0	Yes (#2)
	CTR#s 17-126	Various or NA	CTR, hh	Non-detect, less than WQO, or no WQO	Less than WQO or Not Available	No or Undetermined <sup>[4]</sup>

\* = Pollutants on 303 (d) list

[1] RPA based on the following: BP = Basin Plan; CTR = California Toxics Rule; NTR=National Toxics Rule; fw aq lf = fresh water aquatic life; sw aq lf = salt water aquatic life; hh = human health, SSO = site-specific objective.

[2] Trigger type is as defined in Finding 33 above.

[3] For nickel, the Discharger's reported MEC is 320 ug/L; this value was excluded from all analyses as it was statistically determined to be an outlier, however, continued monitoring for this pollutant is required to provide additional data to characterize the pollutant.

[4] Undermined due to lack of WQOs/WQC.

38. *RPA Results for Impairing Pollutants.* The only constituents on the 303 (d) list for South San Francisco Bay which the RPA determined a need for effluent limitations, are selenium and dioxin TEQ. Because Plummer Creek is not itself on the 303 (d) list, but is only a tributary to South San Francisco Bay, it is uncertain whether the Discharger will receive TMDL WLAs. If it does, the permit will be re-opened and the final WQBELs will be based on the WLA. In addition, mass limitations are required for bioaccumulative 303 (d)-listed pollutants that can be reliably detected.

Final determination of reasonable potential for some other constituents (diazinon) identified on the 303 (d) list could not be performed owing to the lack of an established WQO or WQC.

39. *Nickel*. Board Resolution R2-2002-0061 amending the Basin Plan established the SSOs for nickel for the lower South San Francisco Bay south of Dumbarton Bridge. The most stringent applicable WQOs for nickel are 27 µg/L (4 day average) and 142 µg/L (1 hour average), expressed as total recoverable metal, using the translators proposed in the Basin Plan amendment.

No reasonable potential is found for nickel because the highest valid effluent measurement (20 ug/L) is less than the most stringent WQO (27 ug/L). The actual highest effluent measurement (320 ug/L) is excluded from the RPA, because it is identified as an outlier. Assuming a lognormal distribution, this value is greater than the mean by 5 standard deviations, and therefore not likely representative of the waste discharge. However, continued monitoring on a monthly basis for nickel is required to characterize the effluent. The permit will be reopened, if appropriate, to include effluent limits for nickel when additional data are available.

40. *Polynuclear Aromatic Hydrocarbons (PAHs)*. Consistent with the CTR and SIP, this Order evaluates the reasonable potential of individual PAHs. Data for individual PAHs are available from effluent samples collected on August 10 and December 26, 2001. None of the sixteen individual PAHs was detected. Therefore, no reasonable potential is identified. Consistent with the BP, this Order also evaluates the reasonable potential of total PAH. Because none of the sixteen individual PAHs were detected, there is also no reasonable potential for total PAH. The nature of this discharge also suggests that PAHs are unlikely to be found in the effluent.

41. *Other Organics*. The Discharger has performed sampling and analysis for all the organic constituents listed in the CTR. The data are used in the RPA. The full RPA is presented as an attachment in the Fact Sheet. Except for bis(2-ethylhexyl)phthalate and dioxin TEQ, reasonable potential was not found for any other organic compounds on the list of 126 priority toxic pollutants. The Discharger will continue to monitor for these constituents in the effluent and the receiving water using analytical methods that provide the best feasible detection limits. When additional data become available, further reasonable potential analysis may be conducted to determine whether to add numeric effluent limitations to the Order or to continue monitoring.

42. *Effluent Reasonable Potential Monitoring*. This Order does not include effluent limitations for constituents that do not show reasonable potential, but continued monitoring for these pollutants is required as described in Provision 2. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures, if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC.

43. *Permit Reopener*. This Order includes a reopener provision to allow numeric effluent limitations to be added for any constituent that exhibits reasonable potential. The Board will make this determination based on monitoring results.

## **Development of Effluent Limitations**

### ***Inorganic Toxic Pollutants***

44. *Copper*

- a. *RPA Results.* This Order establishes effluent limitations for copper because the 46 µg/L MEC exceeds the governing WQO of 13 µg/L. The governing WQO is based on the Basin Plan's 4-day average SSO for South San Francisco Bay (based on Resolution R2-2002-0061, which amended the Basin Plan on May 22, 2002).
- b. *WQBELs.* The final WQBELs for copper calculated according to SIP procedures, are 10 µg/L average monthly (AMEL) and 20 µg/L maximum daily (MDEL), both expressed as total recoverable metal.
- c. *Immediate Compliance Infeasible.* The Discharger Infeasibility Study requests an interim limit with a compliance schedule, because it determined it cannot immediately comply with the WQBELs. The Board staff's statistical analysis of effluent data from 2001 through 2004 (see Attachment 3 of the attached Fact Sheet) concurs there is a high likelihood the Discharger will not be able to immediately comply with the WQBELs. The Board finds the measures proposed in the Discharger Infeasibility Study satisfy the requirements in Section 2.1 of the SIP, and therefore will provide the Discharger with an interim limit and compliance schedule.
- d. *Interim Limit.* Numeric interim limits for the pollutant must be based on current treatment facility performance or on a prior Order limit, whichever is more stringent. Because the previous Order does not include a limit for copper, the interim limit is set to an Interim Performance-Based Limitation (IPBL). Consistent with past practices, the Board specifies the IPBL as the 99.87th percentile value of the Discharger's recent effluent data. Therefore, the interim limit for copper, as a daily maximum, is set at 72.6 µg/L.
- e. *Compliance Schedule Requirements.* In the Final Infeasibility Study, the Discharger has proposed additional pollution prevention and source control measures to reduce copper concentration levels in the discharge. A schedule for achieving compliance with the WQBELs is required by Provision 4 of this Order. Additionally the Discharger may implement a sampling plan, as specified in Provision 10 of this Order to develop information that may be used to establish WQBELs based on dissolved criteria for copper.
- f. *Term of Interim Limit.* The copper IPBL shall remain in force until May 22, 2012, or until the Board amends the limitations based on additional data or site-specific objectives.

#### 45. Lead

- a. *RPA Results.* This Order establishes effluent limitations for lead because the 110 µg/L MEC exceeds the governing WQC of 8.5 µg/L. The governing WQC is based on the CTR's WQC of 8.5 µg/L for chronic protection, expressed as total recoverable metal.
- b. *WQBELs.* The final WQBELs for lead calculated according to SIP procedures, are 4.5 µg/L average monthly (AMEL) and 14 µg/L maximum daily (MDEL), both expressed as total recoverable metal.
- c. *Immediate Compliance Infeasible.* The Discharger Infeasibility Study requests an interim limit with a compliance schedule, because it determined it cannot immediately comply with the WQBELs. The Board staff's statistical analysis of effluent data from 1998 through 2004 (see Attachment 3 of the attached Fact Sheet) concurs there is a high likelihood the Discharger will not be able to immediately comply with the WQBELs. The Board finds the measures proposed in the Discharger Infeasibility Study satisfy the requirements in Section 2.1 of the SIP, and therefore will provide the Discharger with an interim limit and compliance schedule.

- d. *Interim Limit.* Because the previous Order does not include a limit for lead, the interim limit is set to an IPBL. Although the Board normally uses the 99.87th percentile to define the IPBL, in this case, the 99.87th percentile is unusually high, and would represent an unacceptable risk to the environment – the 99.87th percentile (462 µg/L) is greater than the MDEL (14 µg/L) by a factor of 33. Therefore, based on best professional judgment, the IPBL is defined at the lower 99th percentile (113 µg/L), instead of the 99.87th percentile. This method parallels the SIP's method of using a 99th percentile occurrence probability for defining MDELs.
- e. *Compliance Schedule Requirements.* In the Final Infeasibility Study, the Discharger has proposed additional pollution prevention and source control measures to reduce lead concentration levels in the discharge. A schedule for achieving compliance with the WQBELs is required by Provision 4 of this Order. Additionally the Discharger may implement a sampling plan, as specified in Provision 10 of this Order to develop information that may be used to establish WQBELs based on dissolved criteria for lead.
- f. *Term of Interim Limit.* The lead IPBL shall remain in force until May 17, 2010, or until the Board amends the limitations based on additional data or site-specific objectives. The final WQBELs will go into effect on May 18, 2010.

#### 46. Selenium

- a. *RPA Results.* This Order establishes effluent limitations for selenium because the 41 µg/L MEC exceeds the most stringent WQC of 5 µg/L. The governing WQC is based on the NTR's WQC of 5 µg/L for chronic aquatic life protection.
- b. *WQBELs.* The final WQBELs for selenium calculated according to SIP procedures, are 4.1 µg/L average monthly (AMEL) and 8.2 µg/L maximum daily (MDEL), both expressed as total recoverable metal.
- c. *Immediate Compliance Infeasible.* The Discharger Infeasibility Study requests an interim limit with a compliance schedule, because it determined it cannot immediately comply with the WQBELs. The Board staff's statistical analysis of effluent data from 2001 through 2004 (see Attachment 3 of the attached Fact Sheet) concurs there is a high likelihood the Discharger will not be able to immediately comply with the WQBELs. The Board finds the measures proposed in the Discharger Infeasibility Study satisfy the requirements in Section 2.1 of the SIP, and therefore will provide the Discharger with an interim limit and compliance schedule.
- d. *Interim Limit.* Because the previous Order does not include a limit for selenium, the interim limit is set to an Interim Performance-Based Limitation (IPBL). Consistent with past practices, the Board specifies the IPBL as the 99.87th percentile value of the Discharger's recent effluent data. Therefore, the interim limit for selenium, as a daily maximum, is set at 70 µg/L.
- e. *Compliance Schedule Requirements.* In the Final Infeasibility Study, the Discharger has proposed additional pollution prevention and source control measures to reduce selenium concentration levels in the discharge. A schedule for achieving compliance with the WQBELs is required by Provision 4 of this Order.
- f. *Term of Interim Limit.* The selenium IPBL shall remain in force until April 27, 2010, or until the Board amends the limitations based on additional data or a TMDL. The final WQBELs will go into effect on April 28, 2010.

#### 47. Zinc

- a. *RPA Results.* This Order establishes effluent limitations for zinc because the 113 µg/L MEC exceeds the most stringent WQC of 91 µg/L. The governing WQC is based on the CTR's WQC of 91 µg/L for chronic aquatic life protection.
- b. *WQBELs.* The final WQBELs for zinc calculated according to SIP procedures, are 36 µg/L average monthly (AMEL) and 100 µg/L maximum daily (MDEL), both expressed as total recoverable metal.
- c. *Immediate Compliance Infeasible.* The Discharger Infeasibility Study requests an interim limit with a compliance schedule, because it determined it cannot immediately comply with the WQBELs. The Board staff's statistical analysis of effluent data from 2001 through 2004 (see Attachment 3 of the attached Fact Sheet) concurs there is a high likelihood the Discharger will not be able to immediately comply with the WQBELs. The Board finds the measures proposed in the Discharger Infeasibility Study satisfy the requirements in Section 2.1 of the SIP, and therefore will provide the Discharger with an interim limit and compliance schedule.
- d. *Interim Limit.* Because the previous Order does not include a limit for zinc, the interim limit is set to an IPBL. Consistent with past practices, the Board specifies the IPBL as the 99.87th percentile value of the Discharger's recent effluent data. Therefore, the interim limit for zinc, as a daily maximum, is set at 944 µg/L.
- e. *Compliance Schedule Requirements.* In the Final Infeasibility Study, the Discharger has proposed additional pollution prevention and source control measures to reduce zinc concentration levels in the discharge. A schedule for achieving compliance with the WQBELs is required by Provision 4 of this Order. Additionally the Discharger may implement a sampling plan, as specified in Provision 10 of this Order to develop information that may be used to establish WQBELs based on dissolved criteria for zinc.
- f. *Term of Interim Limit.* The zinc IPBL shall remain in force until May 17, 2010, or until the Board amends the limitations based on additional data or site-specific objectives. The final WQBELs will go into effect on May 18, 2010.

#### 48. Cyanide

- a. *RPA Results.* This Order establishes effluent limitations for cyanide because the maximum observed background concentration for cyanide was 30 µg/L in a sample collected on September 26, 2002, which exceeds the most stringent WQC of 1.0 µg/L. The governing WQC is based on the CTR's salt water acute and chronic criteria for the protection of aquatic life.
- b. *WQBELs.* The final WQBELs for cyanide calculated according to SIP procedures, are 0.5 µg/L average monthly (AMEL) and 1.0 µg/L maximum daily (MDEL).
- c. *Immediate Compliance Infeasible.* The Discharger Infeasibility Study requests an interim limit with a compliance schedule, because it determined it cannot immediately comply with the WQBELs. Because all cyanide effluent measurements are non-detects and the detection limits are above the WQBELs, the Board agrees with the conclusion of infeasibility. The Board finds the measures proposed in the Discharger Infeasibility Study satisfy the requirements in Section

2.1 of the SIP, and therefore will provide the Discharger with an interim limit and compliance schedule.

- d. *SSO and Ambient Background Data Collection.* A regional Discharger-funded study is underway for development of a cyanide SSO or recalculation of the criteria. The cyanide study plan was submitted on October 29, 2001, and the final report was submitted on June 29, 2003. The WQBELs will be re-calculated based on a cyanide SSO or updated criteria. Any changes to the cyanide objective will be applicable to this discharge.
- e. *Compliance Schedule Requirements.* In the Final Infeasibility Study, the Discharger has proposed additional pollution prevention and source control measures to reduce cyanide concentration levels in the discharge. A schedule for achieving compliance with the WQBELs is required by Provision 4 of this Order.
- f. *Interim Limit.* Because the previous Order does not include a limitation for cyanide, the interim limits must be set as an IPBL. Because the monitoring data consisted of all non-detect values, the Board cannot determine an IPBL using statistical analysis, but must set it at a concentration with which the Discharger can demonstrate compliance. In accordance with compliance determination rules specified in Section 2.4.5 of the SIP, the interim limitation as a daily maximum is therefore set at the ML listed in Appendix 4 of the SIP: 5 µg/L.
- g. *Term of Interim Limit.* The cyanide IPBL shall remain in force until April 27, 2010, or until the Board amends the limitations based on additional data or SSOs. The final WQBELs will go into effect on April 28, 2010.

49. *Bis(2-Ethylhexyl)Phthalate (BEHP)*

- a. *RPA Results.* This Order establishes effluent limitations for BEHP because the maximum observed background concentration for BEHP is 7 µg/L which exceeds the most stringent WQC of 5.9 µg/L. The governing WQC is based on the CTR's human health criterion for consumption of organisms.
- b. *WQBELs.* The final WQBELs for BEHP calculated according to SIP procedures, are 5.9 µg/L average monthly (AMEL) and 12 µg/L maximum daily (MDEL).
- c. *Immediate Compliance Feasible.* The Discharger has not requested a compliance schedule for BEHP. Because the monitoring data consists of only two non-detect values with a MDL of 2 µg/L, the Board determines it is feasible for the Discharger to achieve immediate compliance. Therefore, the WQBELs will be in effect in this Order.
- d. *BEHP Sample Contamination.* BEHP is commonly known to be a contaminant from sampling or analytical equipment. If the Discharger can prove, to the satisfaction of the Executive Officer, that BEHP does not exist in either the effluent or the receiving water through additional monitoring, it may request to the Executive Officer to waive the sampling requirement for BEHP for the rest of the permit term. If during the next permit reissuance, the Board finds that BEHP does not demonstrate RP, it will remove the WQBELs for BEHP.

49. Dioxins and Furans

- a. *Dioxin TEQ WQC.* The CTR establishes a numeric human health WQC of 0.014 pg/L for 2,3,7,8-TCDD based on consumption of organisms. The preamble of the CTR states that California

NPDES permits should use toxicity equivalencies (TEQs) where dioxin-like compounds have reasonable potential to cause or contribute to violation of narrative standards. The preamble further states that U.S. EPA intends to use the 1998 World Health Organization TEF scheme in the future and encourages California to use this scheme in State programs. In addition, the CTR preamble states U.S. EPA's intent to adopt revised WQC guidance subsequent to their health reassessment for dioxin-like compounds. In 1998, the U.S. EPA listed the Bay as impaired by dioxin-like compounds. Therefore, discharges that contain dioxin-like compounds have a reasonable potential to contribute to this impairment. To address this, it is appropriate to apply the TEQ scheme in setting numeric limits for such discharges to protect the BP narrative standard.

- b. *RPA Results.* This Order establishes effluent limitations for dioxin TEQ because the 5.9 pg/L MEC exceeds the most stringent WQC of 0.014 pg/L. The governing WQC for dioxin TEQ is based on the BP narrative objective prohibiting toxic effects in the receiving water, as applied to the CTR criterion for 2,3,7,8-TCDD.
- c. *WQBELs.* The dioxin TEQ WQBELs calculated according to SIP procedures are 0.014 pg/L as the AMEL and 0.028 pg/L as the MDEL.
- d. *Immediate Compliance Infeasible.* The Discharger Infeasibility Study requests an interim limit with a compliance schedule, because it determined it cannot immediately comply with the WQBELs. The Board staff's statistical analysis of effluent data from 2001 through 2004 (see Attachment 3 of the attached Fact Sheet) concurs there is a high likelihood the Discharger will not be able to immediately comply with the WQBELs. The Board finds the measures proposed in the Discharger Infeasibility Study satisfy the requirements in Section 2.1 of the SIP, and therefore will provide the Discharger with a compliance schedule.
- e. *Interim Limit Cannot Be Determined.* Because there is not enough data to calculate an interim limit, this Order does not establish an interim limit. This Order requires additional monitoring of dioxin TEQ. The permit will be reopened, as appropriate, to include interim dioxin TEQ limitations when additional data become available.
- f. *Compliance Schedule Requirements.* In the Final Infeasibility Study, the Discharger has proposed additional pollution prevention and source control measures to reduce dioxin TEQ concentration levels in the discharge. A schedule for achieving compliance with the WQBELs is required by Provision 4 of this Order.
- g. *Expected Final Dioxin Effluent Limits.* Since there is not enough data to calculate an interim limit, this Order does not establish an interim limit. The final limits for dioxin TEQ will be based on the WQBELs (effective July 1, 2015), or a WLA assigned to the Discharger in a TMDL, if there is any. This permit requires additional dioxin monitoring to complement a special dioxin project being conducted by the Clean Estuary Partnership (CEP). The special dioxin project will consist of impairment assessment and a conceptual model for dioxin loading into the Bay.

#### ***Whole Effluent Acute and Chronic Toxicity***

50. *Whole Effluent Acute Toxicity.* This Order includes effluent limits for whole-effluent acute toxicity that are unchanged from the previous Order. Compliance evaluation is based on 96-hour static renewable bioassays. All bioassays shall be performed according to the U.S. EPA-approved method in 40 CFR Part 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water, 5th Edition." Acute toxicity testing performed by the Discharger in October 2003 and January

2004 showed 95 or greater percent survival.

51. *Whole Effluent Chronic Toxicity*. The BP allows chronic toxicity effluent limitations to be established for individual dischargers based on best professional judgment. The Board finds that a chronic toxicity effluent limitation is not required in this Order, because the discharge is intermittent, rather than continuous. Additionally, the discharge is a non-process wastewater discharge that does not contain characteristics of concern to beneficial uses, other than those pollutants addressed by effluent limitations established in this Order.

#### **Storm Water Pollution Prevention Plan**

52. *Regulations*. Federal Regulations for storm water discharges were promulgated by the U.S. EPA on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activity (industrial storm water) to obtain a NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.
53. *Storm Water Pollution Prevention Plan (SWPPP)*. Provision 6 of this Order requires the Discharger to implement best management practices to reduce or prevent pollutants associated with industrial activity in storm water discharges. Specifically, the Discharger must comply with the storm water provisions of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (the Standard Provisions). This satisfies the requirements of 40 CFR Parts 122, 123, and 124.

#### **Best Management Practices Plan**

54. The previous permit required the Discharger to prepare and implement a Best Management Practices Plan (BMP Plan) to prevent or reduce the movement of pollutants from the Discharger's land and activity to surface or ground water. The requirement to maintain and update a BMP Plan is retained by this Order.

#### **Pollution Prevention and Pollutant Minimization**

55. *Pollution Prevention Plan*. The Basin Plan requires industrial dischargers to implement general pollution prevention programs, for the overall reduction of toxic wastes in the discharge. In cases where water quality problems exist or where beneficial uses are impaired or threatened by direct industrial dischargers, more stringent targeted pollution prevention programs are required. The Board finds the general pollution prevention program requirement is satisfied by Provisions 6 and 7, which require the Discharger to implement a BMP Plan, and a SWPPP. The Board finds the compliance schedule requirements established in this Order for copper, cyanide, lead, selenium, zinc, and dioxin TEQ, satisfy the Basin Plan's targeted pollution prevention program requirements.
56. *Pollutant Minimization Program*.
- a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.
  - b. There may be some redundancy between the Pollutant Minimization Program requirements and the Compliance Schedule Requirements.

- c. Where the two programs' requirements overlap, the Discharger is allowed to continue, modify, or expand its existing Compliance Schedule Requirements to satisfy the Pollutant Minimization Program requirements.

### **Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy**

57. On August 6, 2001, the Board sent a letter to all the permitted dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter".
58. Pursuant to the August 6, 2001 Letter from Board Staff, the Discharger submitted a proposed Sampling and Analysis Plan to the Board to fulfill the Board's requirement for the monitoring of pollutants in receiving water and in effluent. By letter of November 21, 2001, Board staff approved the Discharger's Sampling and Analysis Plan with certain changes and required submittal of an interim report presenting the data generated by May 18, 2003. An interim report dated May 16, 2003, was submitted. The Discharger will complete sampling for the effluent and receiving water as proposed according to Provisions 2 and 3 of this permit. In summary, this is comprised of one complete set of monitoring of the 126 priority pollutants in both effluent and receiving water. The monitoring results shall be submitted with the permit renewal application. If there is a conflict between the monitoring and reporting requirements of this Order and the Executive Officer's August 6, 2001, letter, the requirements of this Order shall take precedence.

### **Monitoring Requirements (Self-Monitoring Program)**

59. *Monitoring Requirements (Self-Monitoring Program)*. The Self-Monitoring Program includes monitoring at the outfalls for conventional, non-conventional, toxic pollutants, and acute toxicity. Monitoring for conventional and non-conventional pollutants has remained the same, except for settleable matter. The monitoring frequency for settleable matter has been reduced from weekly to quarterly, because the Discharger has not violated its effluent limitation in over five years, and the weekly total suspended solids measurements account for the fraction of suspended matter that is settleable. The previous permit's requirement for quarterly acute bioassay monitoring is retained in this Order. Monthly effluent monitoring is required for copper, lead, selenium, and zinc to determine compliance with effluent limitations. Twice a year monitoring is required for cyanide rather than monthly, because unlike the results for metals, its effluent concentration measurements have never exceeded its WQC. Monthly effluent monitoring is required for nickel to confirm no reasonable potential. Annual monitoring for dioxins is required to provide information for development of an interim limit, and possibly for TMDL development. Once every five years effluent monitoring is required for bis(2-ethylhexyl)phthalate. The monitoring frequency for bis(2-ethylhexyl)phthalate is lower than for the metals, because unlike results for the metals, its effluent concentration measurements have never exceeded its WQC.

### **Optional Studies**

60. *Optional Mass Offset*. This Order contains requirements to prevent further degradation of the impaired waterbody. Such requirements include the adoption of interim mass limitations that are based on treatment plant performance, provisions for aggressive source control, and treatment plant optimization. After implementing these efforts, the Discharger may find that further net reductions of

the total mass loadings of the 303(d)-listed pollutants to the receiving water can only be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.

61. *Metal Translator Study.* Since NPDES permit limitations must be expressed as a total recoverable metal value, a translator is required to convert the dissolved objective into a total recoverable objective. The translators for copper and nickel for South Bay south of Dumbarton Bridge, and CTR default translators for lead and zinc are used to convert the dissolved objectives into total recoverable objectives. An optional metal translator study is included in this permit to encourage the Discharger to develop local translator values for copper, lead, nickel, and zinc in place of the default translator values.

#### **Other Discharge Characteristics and Permit Conditions**

62. *O & M Manual.* The Discharger shall maintain an Operations and Maintenance Manual to provide treatment facilities and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.
63. *NPDES Permit.* This Order serves as a NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.
64. *Notification.* The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharges and have been provided an opportunity to submit their written views and recommendations. Board staff prepared a Fact Sheet and Response to Comments, which are hereby incorporated by reference as part of this Order.
65. *Public Hearing.* The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED**, pursuant to the provisions of Division 7 of the California Water Code, regulations, and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

#### **A. DISCHARGE PROHIBITIONS**

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
2. Direct or indirect discharges of biocides of a persistent or cumulative form, except where net environmental benefit can be demonstrated to the satisfaction of the Board, are prohibited.
3. Discharges of floating oil or other floating materials in quantities sufficient to cause deleterious bottom deposits, turbidity or discoloration in surface waters is prohibited.
4. Direct discharge of domestic sanitary waste to the cooling pond or to surface waters of the State is prohibited.

5. Discharges of concentrated brine to surface waters of the State are prohibited.

**B. EFFLUENT LIMITATIONS**

The following effluent limitations apply to effluent discharged from Outfall E-001.

1. **Conventional and Non-Conventional Pollutants.** Effluent shall not exceed the following limitations for conventional pollutants in Table 4:

**Table 4. Effluent Limitations for Conventional and Non-Conventional Pollutants**

Pollutant	Units	Monthly Average	Weekly Average	Max Daily
TSS	mg/L	41	-	64
TSS	kg/day	38	-	66
BOD	mg/L	30	45	-
Settleable Solids	ml/L	0.1	0.2	-
Oil & Grease	mg/L	5	-	8
Oil & Grease	kg/day	4.5	-	7.7

2. **pH.** The pH of the discharge shall not exceed 9.0 nor be less than 6.5 standard units. If the Discharger employs continuous pH monitoring, the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:
  - (1) The total time during which the pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month.
  - (2) No individual excursion from the required range of pH values shall exceed 60 minutes.
3. **Temperature.** The maximum temperature of the discharge shall not exceed the ambient receiving water temperature by more than 20° F, nor shall it exceed 90° F.
4. **Whole Effluent Acute Toxicity.** Representative samples of the effluent shall meet the following limitations for acute toxicity.
  - a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be as follows:
    - i. 3-sample median value of not less than 90 percent survival.
    - ii. Single sample maximum value of not less than 70 percent survival.
  - b. 3-sample median acute toxicity limitation is further defined as follows:
 

Any bioassay test showing survival of 90 percent or greater is not a violation of this limitation. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limitation, if one of the past two or fewer samples show less than 90 percent survival.
  - c. Bioassays shall be conducted in compliance with methods in 40 CFR 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, 5th Edition" (EPA-R-02-012 (2002)), with exceptions granted to the

Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

5. **Toxic Pollutants.** Effluent shall not exceed the following limitations:

**Table 5. Effluent Limitations for Toxic Pollutants** <sup>[1]</sup> <sup>[2]</sup>

	Units	Daily Maximum Interim Limitations (Effective Immediately)	Final Maximum Daily Effluent Limitations	Final Average Monthly Effluent Limitations	Effective Date for Final Limitations
Copper <sup>[3]</sup>	µg/l	72.6	--	--	--
Cyanide <sup>[4]</sup>	µg/l	5	1.0	0.5	5/18/2010
Lead <sup>[4]</sup>	µg/l	113	14	4.5	5/18/2010
Selenium <sup>[4]</sup>	µg/l	70.0	8.2	4.1	4/28/2010
Zinc <sup>[4]</sup>	µg/l	944	100	36	4/28/2010
Bis(2-ethylhexyl)pht halate	µg/l	--	12	5.9	7/1/2005

Notes:

[1] All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limitation if the average discharge concentration exceeds the effluent limitation and the reported ML for the analysis for that constituent.

Limitations apply to the average concentration of all samples collected during the averaging period (daily maximum = 24-hour period; monthly = calendar month).

[2] A daily maximum value for a given constituent shall be considered noncompliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent. The table below indicates the lowest minimum level that the Discharger's laboratory must achieve for compliance determination purposes.

Pollutant	ML (µg/L)
Copper	0.5
Lead	0.5
Cyanide	5
Selenium	1
Zinc	1
Bis(2-ethylhexyl)phthalate	5

[3] The interim limitation for copper shall remain in effect until May 22, 2012, or until the Board amends the limitation based on additional data.

[4] The Board may amend the limitations based on additional data, TMDL, or SSOs.

**C. RECEIVING WATER LIMITATIONS**

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

- a. Floating, suspended, or deposited macroscopic particulate matter or foam.
  - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.
  - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels.
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin.
  - e. Toxic or other deleterious substances to be present in concentrations or quantities that will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limitations to be exceeded in waters of the State at any one place within 1 foot of the water surface:
- a. Dissolved Oxygen: 5.0 mg/L, minimum  
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
  - b. Dissolved Sulfide: 0.1 mg/L, maximum.
  - c. pH: the pH shall not be depressed below 6.5 nor raised above 9.0, nor caused to vary from normal ambient pH levels by more than 0.5 units.
  - d. Un-ionized Ammonia: 0.025 mg/L as N, annual median,  
0.16 mg/L as N, maximum.
  - e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

#### **D. PROVISIONS**

##### **1. Permit Compliance and Rescission of Previous Waste Discharge Requirements.**

The Discharger shall comply with all sections of this Order beginning on the effective date of this Order. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 97-025. Order No. 97-025 is hereby rescinded upon the effective date of this Order.

#### **Special Studies**

##### **2. Effluent Characterization for Selected Constituents**

The Discharger shall monitor and evaluate the discharge from Outfall E-001 for the constituents listed in Enclosure A of the Board's August 6, 2001, Letter, according to its approved sampling plan. The Discharger shall monitor the 126 priority pollutants for a minimum of one sampling event, during the permit term.

*Reporting: The Discharger shall submit a report that presents all the data to the Board with the application for permit reissuance.*

### 3. Ambient Background Receiving Water Study

The Discharger shall monitor and evaluate Plummer Creek Slough for the constituents listed in Enclosure A of the Board's August 6, 2001, Letter, according to its approved sampling plan. The Discharger shall monitor the 126 priority pollutants for a minimum of one sampling event, during the permit term.

*Final Report: The Discharger shall submit a report that presents all the data to the Board with the application for permit reissuance.*

### 4. Compliance Schedule Requirements

- a. The Discharger shall develop a compliance schedule program to reduce effluent concentrations and loadings, for copper, lead, selenium, cyanide, zinc, and dioxin TEQ.
- b. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28 of each year. Annual reports shall cover January through December of the preceding year. Annual reports shall include at least the following information:
  - i. *A description of its treatment facilities and treatment processes in the first annual report.*
  - ii. *Identification of sources for the pollutants based on additional source monitoring. This may include identification of any relevant process chemicals in use which could enter the effluent; characterization of the pollutant concentrations in the well water and storm water runoff; characterization of volume of inflows and outflows; and a dynamic modeling study that determines how the well pumping rate, storm water input, and evaporation affect pollutant concentrations in the effluent. **A workplan for the source analysis shall be submitted to the Board by no later than February 28, 2006.***
  - iii. *Development of feasible alternatives for how the effluent pollutants may be reduced and controlled to achieve compliance with the final limits specified in this Order. This may include such alternatives as pollution prevention, effluent reclamation and reuse projects, replacement of well source water with municipal supplies, designing process and site changes to eliminate discharge, obtaining a separate general NPDES storm water permit for storm water runoff, improved operational management of cooling pond, treatment technology, and other alternatives. Based on this information, the Board may reopen this Permit to establish additional interim requirements. To ensure compliance is achieved by the final compliance schedule dates, **an Alternatives Feasibility Plan for achieving compliance with the final WQBELs, and a time-line(s) for its implementation, shall be developed and submitted to the Board no later than February 28, 2007.***
  - iv. *Development of alternative effluent limits (site-specific translators, SSOs, and TMDLs). Provisions 9 and 10 allow the Discharger an option to develop or participate in the development of alternative effluent limits, related to site-specific translators, SSOs, and TMDLs. If these approaches are pursued, the Discharger shall discuss them in the annual report, and address how they will affect plans for reducing and controlling effluent pollutants.*
  - v. *Documentation of efforts and progress. This discussion shall detail all the Discharger's compliance schedule activities during the reporting year.*

- c. The Executive Officer may modify the scheduled dates in sections b.ii and b.iii; provided the Discharger makes a request that is acceptable to the Executive Officer, and will not delay achievement of compliance with the final WQBELs past the compliance dates listed below in section d.
- d. **The Discharger shall achieve full compliance with the final WQBELs for lead and zinc by May 18, 2010; for cyanide and selenium by April 28, 2019; for copper by May 22, 2012; and for dioxin TEQ by July 1, 2015.**

#### 5. Pollutant Minimization Program

- a. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:
  - i. A sample result is reported as detected, but not quantified (less than the ML) and the effluent limitation is less than the reported ML; or
  - ii. A sample result is reported as not detected (less than the MDL) and the effluent limitation is less than the MDL; or
  - iii. The dioxin TEQ exceeds the WQO (0.014 pg/L).

the Discharger shall be required to complete and implement a Pollutant Minimization Program.

- b. If triggered by the reasons in (a) above and notified by the Executive Officer, the Discharger shall submit within 6 months of notification, the following:
  - i. An annual review and semiannual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data.
  - ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data.
  - iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation.
  - iv. Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy.
  - v. An annual status report that shall be sent to the Board including the following:
    - (1) All Pollution Prevention monitoring results for the previous year
    - (2) A list of potential sources of the reportable priority pollutant(s)
    - (3) A summary of all actions undertaken pursuant to the control strategy
    - (4) A description of actions to be taken in the following year.

- c. To the extent that the requirements of the Pollutant Minimization Program, and the Compliance Schedule Requirements overlap, the Discharger is allowed to continue, modify, or expand its existing Compliance Schedule Requirements to satisfy the Pollutant Minimization Program requirements.
- d. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in the Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

**6. Storm Water Pollution Prevention Plan**

The Dischargers shall maintain a Storm Water Pollution Prevention Plan (SWPPP), which complies with the requirements contained in the attached Standard Provisions. The Discharger shall regularly review, and update as necessary, the SWPPP, in order for the plan to remain useful and relevant. By October 1st of each year, the Discharger shall submit to the Board a report describing the current status of its SWPPP review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed and the last year it updated its SWPPP.

**7. Best Management Practices Program**

The Discharger shall review, maintain, and update annually its Best Management Practices (BMP) program. The BMP program shall be consistent with the requirements of U.S. EPA regulation 40 CFR 125, Subpart K and the general guidance contained in the "NPDES Best Management Guidance Document", U.S.EPA Report No. 600/9-79-045, December 1979 (revised June 1981). If during review the Discharger determines that it does not need to update its BMP, the Discharger shall state this in its annual Self-Monitoring report.

**Optional Studies**

**8. Optional Mass Offset**

The Discharger may submit to the Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Board may modify this Order to allow an approved mass offset program.

**9. Optional - 303(d)-Listed Pollutants, Site-Specific Objective and TMDL Status Review**

The Discharger may participate in the development of TMDL or SSO programs. If so, by January 31 of each year, the Discharger shall submit an update to the Board to document its participation efforts toward development of the TMDL(s) or SSO(s). Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

**10. Optional Metal Translator Study**

The purpose of this study is to develop information that may be used to establish WQBELs based on dissolved criteria for copper, nickel, lead, and zinc. Optionally, the Discharger may implement a sampling plan to collect data for development of dissolved-to-total translators for these pollutants. If the Discharger chooses to proceed with the study, which may be conducted in cooperation with other Dischargers, the work shall be performed in accordance with the following tasks:

Tasks	Schedule
a. Metal translator study plan: the study plan shall be acceptable to the Executive Officer and shall outline data collection for establishment of dissolved-to-total copper, nickel, lead, and zinc translators, as discussed in the findings. The study plan shall provide for development of translators in accordance with the State Board's SIP, U.S. EPA guidelines, and any relevant portions of the Basin Plan, as amended.	At the Discharger's discretion during the permit term.
b. Implementation of the plan: if the Discharger conducts a translator study, it will use field sampling data approximate to the discharge point and in the vicinity of the discharge point, or as otherwise provided for in the approved workplan.	As specified in the study plan.
c. Final report: A final report, acceptable to the Executive Officer, should be submitted, documenting the results of the metal translator study.	As specified in the study plan, but at least 180 days prior to permit expiration in order to be used for next permit reissuance.

**Facilities Status Reports and Permit Administration**

**11. Operations and Maintenance Manual, Review and Status Reports**

- a. The Discharger shall maintain an O & M Manual as described in the findings of this Order for the Discharger's wastewater facilities. The O & M Manual shall be maintained in usable condition, and available for reference and use by all applicable personnel.
- b. The Discharger shall regularly review, revise, or update, as necessary, the O & M Manual(s) so that the document(s) may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.
- c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its operations and maintenance manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable changes to, its operations and maintenance manual.

**12. Contingency Plan, Review and Status Reports**

- a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (available online—see Standard Language and Other References Available Online, below), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

- b. The Discharger shall regularly review, and update as necessary, the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its Contingency Plan review and update. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable changes to, its Contingency Plan.

**13. New Water Quality Objectives (WQOs)**

As new or revised WQOs come into effect for the Bay and contiguous waterbodies (whether statewide, regional, or site specific), effluent limitations in this Order will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs.

**14. Self-Monitoring Program (SMP)**

The Discharger shall comply with the SMP for this Order as adopted by the Board. The SMP may be amended by the Executive Officer pursuant to U.S. EPA regulation 40 CFR122.63.

**15. Standard Provisions and Reporting Requirements**

The Discharger shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (the Standard Provisions), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply.

**16. Change in Control or Ownership**

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board. To assume responsibility for and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions and Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

**17. Permit Reopener**

The Board may modify or reopen this Order and Permit prior to its expiration date in any of the following circumstances:

- a. If present or future investigations demonstrate that the discharge(s) governed by this Order and permit will or have a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;
- b. If new or revised WQOs come into effect for the San Francisco Bay estuary and contiguous waterbodies (whether statewide, regional, or site specific). In such cases, effluent limitations in this Permit will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order and Permit is not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications;

- c. If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified.

The Discharger may request permit modification based on (2) and (3) above. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.

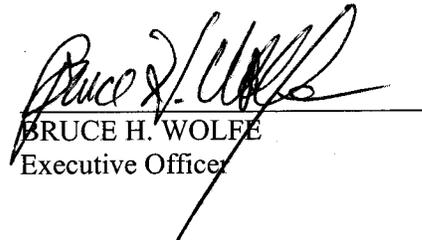
**18. NPDES Permit**

This Order shall serve as a NPDES permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on July 1, 2005, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

**19. Order Expiration and Reapplication**

- a. This Order expires June 30, 2010.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of all available water quality data including conventional pollutant data from no less than the most recent three years, and of toxic pollutant data no less than from the most recent five years, in the discharge and receiving water. Additionally, the Discharger must include with the application the final results of any studies that may have bearing on the limits and requirements of the next permit. Such studies include dilution studies, translator studies and alternate bacteria indicator studies.

I, Bruce H. Wolfe, 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, San Francisco Bay Region, on April 20, 2005.

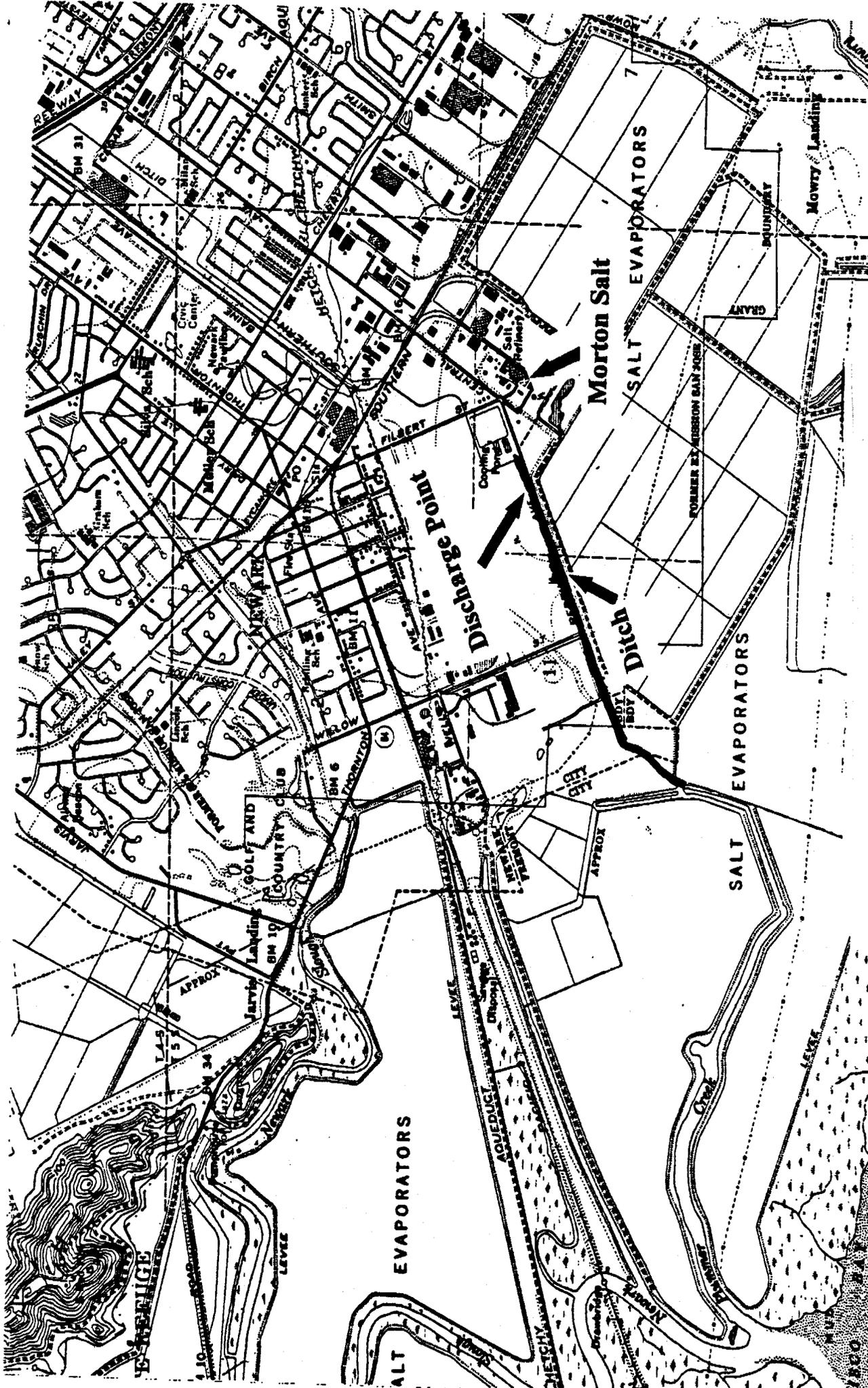
  
BRUCE H. WOLFE  
Executive Officer

**Attachments**

- A. Discharge Facility Location Map  
B. Discharge Facility General Layout  
C. Self-Monitoring Program, Part B  
D. Fact Sheet  
E. The following documents are part of this Order, but are not physically attached due to volume. They are available on the Internet at:  
<http://www.waterboards.ca.gov/sanfranciscobay/Download.htm>:
- Self-Monitoring Program, Part A (August 1993)
  - Standard Provisions and Reporting Requirements, August 1993
  - Board Resolution No. 74-10
  - August 6, 2001, Water Board staff letter, "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy"

**Attachment A**

**Discharge Facility Location Map**



Attachment A. Discharge Facility Location Map

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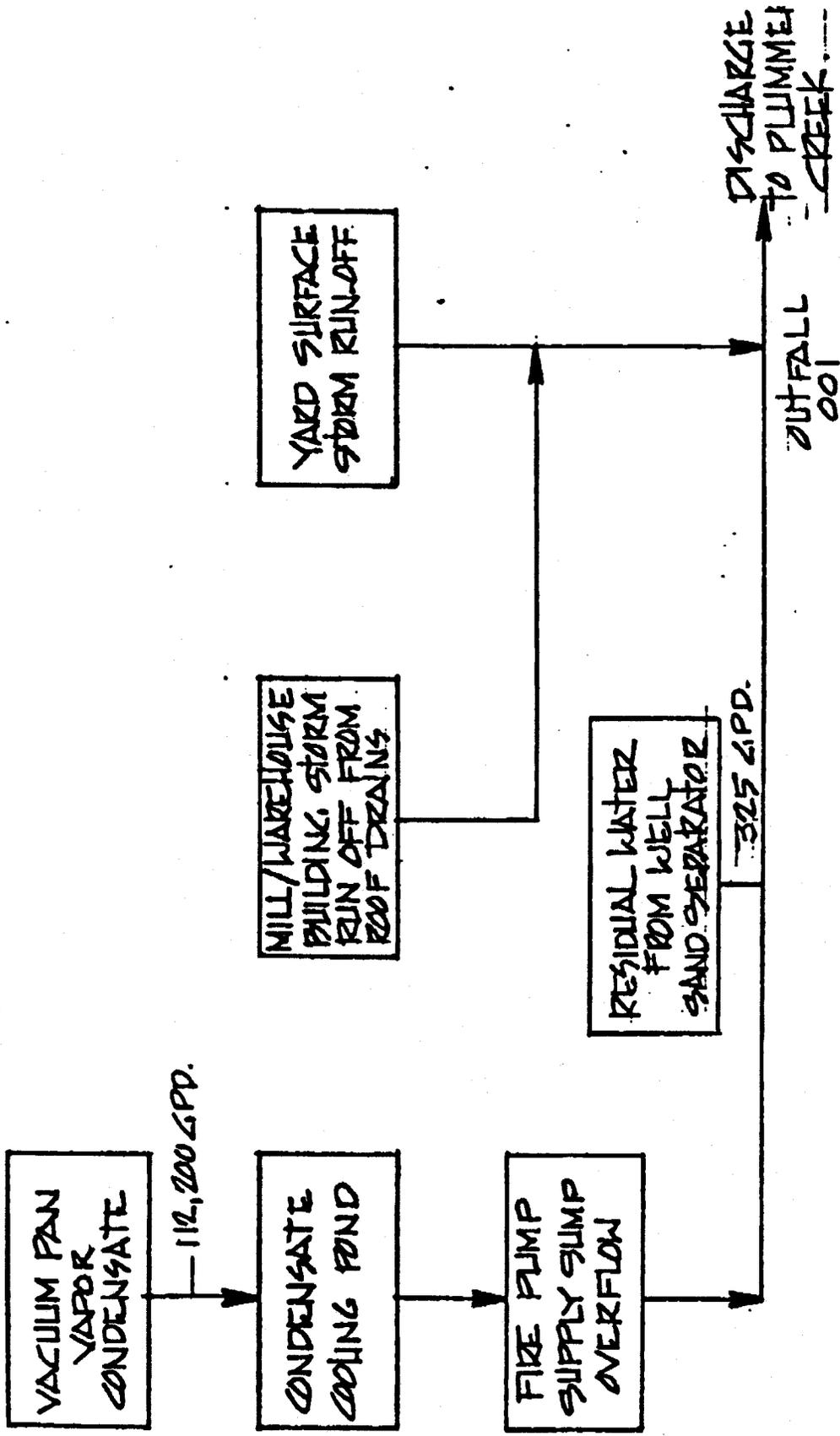
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**Attachment B**

**Discharge Facility General Layout**



Attachment B. Process Flow Diagram

**Attachment C**  
**Self-Monitoring Program**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

MORTON INTERNATIONAL, INC.  
NEWARK SALT MANUFACTURING FACILITY  
ALAMEDA COUNTY

NPDES PERMIT NO. CA0005185  
ORDER NO. R2-2005-0010

Consists of:

Part A (not attached)  
Adopted August 1993

and

Part B (Attached)  
Adopted: April 20, 2005  
Effective: July 1, 2005

*Note: Part A (dated August 1993), referenced in this Self-Monitoring Program is not attached but is available for review or download on the Board's website at <http://www.waterboards.ca.gov/sanfranciscobay/Download.htm>*

## SELF-MONITORING PROGRAM, PART B

### I. DESCRIPTION OF SAMPLING STATIONS

#### A. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the Discharger's wastewater ditch between the point at which the wastewater leaves the Discharger's property and the point at which all wastewater tributary to the ditch is present.

#### B. RECEIVING WATER STATION

<u>Station</u>	<u>Description</u>
C-1	The Alameda County Flood Control Ditch below the discharge weir.

#### C. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
L-1 through L-1-n	Located along the perimeter levees of the two sludge ponds at equal distant intervals not to exceed 50 feet. (A sketch showing the locations of these stations shall accompany each report.)

**II. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATION**

**Table 1. Schedule of Sampling, Measurement, and Analysis [1][2]**

Station		E-001				C-1			L Stations	
Sample Type		G	C-24	Cont	O	G	C-24	O	G	O
Pollutant	Notes									
Flow (mgd)	[3]		D							
BOD <sub>5</sub> (mg/L and kg/day)			M							
TSS (mg/L and kg/day)			W							
Settleable Matter (mL/L-hr)		Q								
Oil and Grease (mg/L and kg/day)	[4]		M							
Turbidity (NTUs)		Q								
pH (pH units)				Cont						
Temperature (° F)				Cont						
Color (color units)					2/W					
Acute Toxicity (% survival)	[5]		Q							
Copper (µg/L and kg/day)			M							
Lead (µg/L and kg/day)			M							
Nickel (µg/L and kg/day)			M							
Selenium (µg/L and kg/day)			M							
Zinc (µg/L and kg/day)			M							
Cyanide (µg/L and kg/day)		2/Y								
Bis(2-ethylhexyl)phthalate (µg/L)		1/5Y								
2,3,7,8-TCDD and Congeners (µg/L)	[6]	A								
All priority pollutants (except those listed above)	[7]	In accordance with Provisions 2 and 3								
All applicable standard observations				M				M		M

**Legend for Table 1:**

Type of Sample

- Co = continuous
- C-24 = 24-hour composite
- G = grab
- Ob = observations

Type of Station

- E = treatment plant effluent
- C = Receiving Water
- L = Pond Levee Stations

Frequency of Sampling

- D = once each day
- W = once each week
- M = once each month
- A = once each year (with at least 6-month intervals)
- Q = once each calendar quarter
- E = each occurrence
- 2/Y = twice per year
- 1/5Y = once every five years within 6 months before the due date for the application for permit reissuance

**Footnotes for Table 1:**

[1] Composite sampling: 24-hour composites may be made up of discrete grabs collected over the course of a day and volumetrically or mathematically flow-weighted. Samples for inorganic pollutants may be combined prior to analysis. Samples for organic pollutants should be analyzed separately. If only one grab sample will be

collected, it should be collected during periods of maximum peak flows. Samples shall be taken on random days when there are discharges into the receiving water body.

- [2] Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.
- [3] Flow monitoring: Effluent flow shall be measured continuously at Outfall E-001 and recorded and reported daily. For effluent flows, the following information shall also be reported, monthly:
- Daily: Daily Flow (MG)
  - Monthly: Average Daily Flow (MGD)
  - Monthly: Maximum Daily Flow (MGD)
  - Monthly: Minimum Daily Flow (MGD)
  - Monthly: Total Flow Volume (MG)
- [4] Oil and grease: Each oil and grease sample event shall consist of a grab sample collected in a glass container.
- [5] Bioassays:
- a) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour static renewal bioassays.
  - b) Test organisms shall be rainbow trout and fathead minnow tested concurrently.
  - c) All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms" (currently 5th Edition).
  - d) Bioassays: Monitoring of the bioassay water shall include, on a daily basis, the parameters specified in the U.S. EPA-approved method, such as pH, dissolved oxygen, ammonia nitrogen, and temperature. These results shall be reported.
  - e) The Executive Officer may consider allowing compliance monitoring with only one fish species (the most sensitive of two) if the Discharger can document that the acute toxicity limitation (effluent limit B.4), has not been exceeded during the previous year (if less than four tests in a year due to no discharge, then the last four tests), or that acute toxicity has been observed in only one of two fish species.
- [6] Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of U.S. EPA Method 1613; the analysis shall be capable of achieving one-half of the U.S EPA MLs. Also, the Discharger shall participate as appropriate the regional collaborative effort with other dischargers to validate the 4-liter sample methodology for lowering the detection limit for dioxins. At a minimum, the Discharger is required to annually monitor for the life of this Order. Alternative methods of analysis must be approved by the Executive Officer.
- [7] Receiving water monitoring shall be consistent with the Discharger's priority pollutant sampling and analysis plan.

Table 2 lists the MLs of the priority constituents included in Table 1. For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the MLs given below. All MLs are expressed as  $\mu\text{g/L}$ , approximately equal to parts per billion (ppb).

**Table 2. Minimum Levels (µg/L or ppb)**

CTR #	Constituent <sup>[1]</sup>	Types of Analytical Methods <sup>[2]</sup>											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPG FAA	HYD-RIDE	CVAA	DCP
6.	Copper					25	5	10	0.5	2			1,000
7.	Lead					20	5	5	0.5	2			10,000
9.	Nickel					50	5	20	1	5			1,000
10.	Selenium						5	10	2	5	1		1,000
13.	Zinc					20		20	1	10			1,000
14.	Cyanide				5								
68.	Bis(2-ethylhexyl)Phthlate	10	5										
16.	2,3,7,8-TCDD-TEQ <sup>[3]</sup>												

[1] According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in Section 2.4.1). Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard.

[2] Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

[3] The Board requires use of one-half the ML published in U.S. EPA Method 1613.

**III. MODIFICATIONS TO PART A OF SELF-MONITORING PROGRAM**

- A. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.
- B. Modify Section F.1 as follows:

**Spill Reports**

A report shall be made of any spill of oil or other hazardous material. The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or Discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to the Board.  
During non-office hours, to the State Office of Emergency Services:  
 Current telephone number: (800) 852-7550.

A report shall be submitted to the Board within five (5) working days following telephone notification, unless directed otherwise by Board staff. A report submitted by facsimile

transmission is acceptable for this reporting. The written report shall contain information relative to: . . .

C. Modify Section F.4 as follows:

Self-Monitoring Reports

For each quarter, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. **The report shall be submitted to the Board on a quarterly basis, by the first day of the second month after the quarter, on February 1, May 1, August 1, and November 1...**

[And add at the end of Section F.4.a the following:]

- 5) If the Discharger wishes to invalidate any measurement taken within the reporting period, the letter of transmittal for the reporting period in question shall include: a formal request by the Discharger to invalidate the measurement; the original measurement in question; the reason for invalidating the measurement; all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.); and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Board staff, and shall be based solely on the documentation submitted with the letter of transmittal.

D. Add at the end of Section F.5, Annual Reporting, the following:

- d. A plan view drawing or map showing the Discharger's facility, flow routing and sampling and observation station locations.

E. Replace Sections E.1 and E.2 with the following:

1. Recording Requirements – Records to be Maintained

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including SMP requirements, shall be maintained by the Discharger in a manner and at a location (e.g., wastewater treatment plant or discharger offices) such that the records are accessible to Board staff. These records shall be retained by the Discharger for a minimum of 3 years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Board or by the Regional Administrator of U.S. EPA, Region IX.

Records to be maintained shall include the following:

a. Parameter Sampling and Analyses, and Observations

For each sample, analysis, or observation conducted, records shall include the following:

- 1) Identity of the parameter.

- 2) Identity of the sampling or observation station, consistent with the station descriptions given in this SMP.
- 3) Date and time of the sampling or observation.
- 4) Method of sampling (grab, composite, other method).
- 5) Date and time the analysis was started and completed, and name of personnel or contract laboratory performing the analysis.
- 6) Reference or description of the procedure(s) used for sample preservation and handling, and analytical method(s) used.
- 7) Calculations of results.
- 8) Analytical method detection limits and related quantitation parameters.
- 9) Results of the analyses or observations.

b. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

- 1) Total flow or volume for each day.
- 2) Maximum, minimum, and average daily flows for each calendar month.

#### IV. ADDITIONS TO PART A OF SELF-MONITORING PROGRAM

Reporting Data in Electronic Format:

The Discharger has the option to submit all monitoring results in electronic reporting format approved by the Executive Officer. If the discharger chooses to submit the SMRs electronically, the following shall apply:

- a. Reporting Method: The discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS).
- b. Modification of reporting requirements: Reporting requirements F.4 in the attached Self-Monitoring program, Part A, dated August 1993, shall be modified as follows. In the future, the Board intends to modify Part A to reflect these changes.
- c. Quarterly Report Requirements: For each calendar quarter, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:
  - i. The report shall be submitted to the Board no later than the first day of the second month after the reporting period ends.
  - ii. Letter of Transmittal: Each report shall be submitted with a letter of transmittal. This letter shall include the following:
    - (1) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
    - (2) Details of the violations: parameters, magnitude, test results, frequency, and dates;
    - (3) The cause of the violations;
    - (4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory;

- (5) If the Discharger wishes to invalidate any measurement taken within the reporting period, the letter of transmittal for the reporting period in question shall include: a formal request by the Discharger to invalidate the measurement; the original measurement in question; the reason for invalidating the measurement; all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.); and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Board staff, and shall be based solely on the documentation submitted with the letter of transmittal.
- (6) Signature: The letter of transmittal shall be signed by the discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. 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."
- (7) Compliance evaluation summary: Each report shall include a compliance evaluation summary. This summary shall include the number of samples in violation of applicable effluent limits.
- (8) Tabulations of all required analyses and observations, including parameter, sample date, sample station, and test result.
- (9) If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.
- (10) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

## V. MISCELLANEOUS REPORTING

- A. The Discharger shall retain and submit (when required by the Executive Officer) the following information concerning the monitoring program for organic and metallic pollutants:
  1. Description of sample stations, times, and procedures.
  2. Description of sample containers, storage, and holding time prior to analysis.
  3. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal surrogate standard.

## VI. SELECTED CONSTITUENTS MONITORING

- A. Effluent monitoring shall include evaluation for all constituents listed in Table 1 by sampling and analysis of final effluent.
- B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective WQOs.

## VII. MONITORING METHODS AND MINIMUM DETECTION LEVELS

The Discharger may use the methods listed in Table 2, above, or alternative test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999).

## VIII. SELF-MONITORING PROGRAM CERTIFICATION

I, Bruce H. Wolfe, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R2-2005-0010.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective as of July 1, 2005.

  
BRUCE H. WOLFE  
EXECUTIVE OFFICER

**Attachment D**

**Fact Sheet**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION  
1515 CLAY STREET, SUITE 1400  
OAKLAND, CA 94612  
(510) 622 - 2300 Fax: (510) 622 - 2460

FACT SHEET  
for

NPDES PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR

MORTON INTERNATIONAL, INC.  
MORTON SALT DIVISION, NEWARK FACILITY  
ALAMEDA COUNTY

NPDES PERMIT NO. CA0005185  
ORDER NO. R2-2005-0010

**PUBLIC NOTICE:**

**Written Comments**

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments must be submitted to the Regional Board no later than 5:00 p.m. on **March 28, 2005**.
- Send comments to the Attention of Daniel Leva.

**Public Hearing**

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; First floor Auditorium.
- This meeting will be held on: April 20, 2005, starting at 9:00 am.

**Additional Information**

- For additional information about this matter, interested persons should contact Water Board staff member:  
Mr. Daniel Leva, Phone: (510) 622-2415;  
email: [dleva@waterboards.ca.gov](mailto:dleva@waterboards.ca.gov)

This Fact Sheet contains information regarding a reissuance of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the Morton International, Inc., Morton Salt Division, Newark facility, for industrial wastewater discharges. The Fact Sheet describes the factual, legal, and methodological basis for the sections addressed in the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the effluent limitations.

**I. INTRODUCTION**

The Discharger applied for reissuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the NPDES program. The application and Report of Waste Discharge is dated October 29, 2001.

**1. Facility Description**

The Morton Salt Division of Morton International, Inc., owns and operates a facility located at 7350 Morton Avenue, Alameda County, Newark, for the manufacture of salt. Crude salt harvested from sea water is purchased and delivered to the site, where it is separated by centrifuge into large and small crystals. Larger crystals are washed and dried for non-food grade products. Smaller crystals are dissolved and re-crystallized in a multi-stage evaporator system for food grade products. Detailed process operations include: (1) dewatering and rebrining of crude salt, (2) chemical treatment to remove impurities from brine, (3) recrystallization of the brine using multiple-effect evaporators, (4) salt drying and cooling, (5) conveying, grinding, screening, and compacting, (6) addition of additives, and (7) bulk loading and packaging.

The facility has been in operation since 1927. Manufacturing operations are conducted indoors, typically 24 hours per day on a five day per week schedule (Monday evenings to 2 am Saturdays). Products and raw materials may be stored outdoors from time to time. Products may be shipped in bulk (rail cars, bulk trucks), or packaged into containers as small as those sized for purchase by the consuming public in supermarkets.

The facility is located on three parcels of land. Parcel No. 1 is approximately 12.6 acres and comprises the manufacturing and packaging plants, maintenance, warehouse, and loading and shipping areas. Parcel No. 2 is approximately 13.9 acres and is largely covered by the process water cooling pond and three process residual dewatering ponds. The third parcel is vacant land and is approximately 3.9 acres.

## **2. Discharge Description**

The waste discharge through Outfall E-001 consists of intermittent overflow from a cooling water pond, residual water from a well water sand separator, and facility storm water runoff from approximately eleven acres. The facility operates two wells for process and cooling water supply. The pond water is circulated through contact condensers, where it condenses vapor from the multiple-effect evaporators through direct contact, and the combined stream is then returned to the pond for cooling. Prior to discharge, the pH of the pond wastewater is reduced by carbon dioxide addition and aeration. Algae growth in the cooling water pond can cause the pH to exceed the 9.0 pH unit effluent limit and lead to high level of suspended solids. Boiler blowdown water is discharged to a sanitary sewer.

The flow is intermittent during dry weather months and ranges up to approximately 0.4 mgd during wet season months when evaporation from the cooling ponds is limited and storm water flows contribute to hydraulic imbalances. The facility reports that as much as 144,000 gallons per day (gpd) may be evaporated from the cooling pond during dry weather conditions. The facility discharged an average discharge flow of 43,200 gpd of treated wastewater from the northwest portion of the site at Outfall 001 (located approximately at latitude 35' 30" 00° and longitude 122' 02" 00°) to a drainage channel that leads to the Alameda County Flood Control Ditch Line F-1, which is a tributary to Plummer Creek and ultimately to South San Francisco Bay.

## **3. Receiving Water Beneficial Uses**

The beneficial uses of the receiving water are described in Finding 11 of this Order.

## **4. Receiving Water Salinity**

The receiving waer salinity is described in Finding 19 of this Order.

#### 5. Receiving Water Hardness

The receiving water hardness is described in Finding 21 of this Order.

### II. DESCRIPTION OF EFFLUENT

The effluent quality is characterized in Findings 7 and 8 of this Order.

### III. GENERAL RATIONALE AND REGULATORY BASES

- the Federal *Water Pollution Control Act*, Sections 301 through 305, and 307, and amendments thereto, as applicable (the Clean Water Act – the CWA);
- the Board's June 21, 1995 *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan), and amendments thereto, as subsequently approved by the State Water Resources Control Board (the State Board), the Office of Administrative Law (OAL) and the U.S. EPA;
- the State Water Resource Control Board's (the State Board's) March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan - the SIP), as subsequently approved by the OAL and the U.S. EPA;
- the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR);
- the U.S. EPA's National Toxics Rule as promulgated [Federal Register Volume 57, 22 December 1992, page 60848] and subsequently amended (the NTR);
- the U.S. EPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986], and subsequent amendments, (the U.S. EPA Gold Book);
- applicable Federal Regulations [40 CFR Parts 122 and 131];
- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
- the U.S. EPA's December 10, 1998 *National Recommended Water Quality Criteria* compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];
- the U.S. EPA's December 27, 2002 *Revision of National Recommended Water Quality Criteria* compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095]; and
- guidance provided with State Board actions remanding permits to the Board for further consideration.

### IV. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

### 1. Recent Facility Performance

Section 402(o) of Clean Water Act (CWA) and 40 CFR § 122.44(l) require that water quality-based effluent limitations (**WQBELs**) in re-issued permits be at least as stringent as in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current facility performance or on previous permit limitations whichever is more stringent (unless anti-backsliding requirements are met). In determining what constitutes "recent plant performance," best professional judgment (**BPJ**) was used. Effluent data collected from September 2001 through February 2004 for priority pollutants are considered representative of recent plant performance.

### 2. Impaired Water Bodies on 303(d) List

On June 6, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 2002 303(d) list), prepared pursuant to provisions of Section 303(d) of the federal CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The South San Francisco Bay is listed as impaired for chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, and selenium. Copper and nickel were delisted and placed on the new Monitoring List. Neither the Alameda County Flood Control Ditch Line F-1 nor Plummer Creek are included in the most recent 303(d) list.

The SIP requires final effluent limitations for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDLs) and associated waste load allocations (WLAs). The SIP and U.S. EPA regulations also require that final concentration-based WQBELs be included for all pollutants having reasonable potential to cause or contribute to an exceedence of applicable water quality standards (having reasonable potential or RP). The SIP requires that where the discharger has demonstrated infeasibility to meet the final WQBELs, interim performance-based limitations (IPBLs) or previous permit limitations (whichever is more stringent) be established in the permit, together with a compliance schedule that shall remain in effect until final effluent limitations are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control where interim limitations are established.

### 3. Basis for Prohibitions

- a). Prohibition A.1 (No discharges other than as described in the permit): This prohibition is based on BPJ and the previous Order.
- b). Prohibition A.2 (No discharge of biosolids): This prohibition is from Basin Plan and the previous Order.
- c). Prohibition A.3 (No discharges of floating oil or other floating materials in quantities sufficient to cause deleterious bottom deposits, turbidity or discoloration in surface waters): This prohibition is based on Basin Plan and the previous Order.
- d). Prohibition A.4 (No direct discharge of domestic sanitary waste to the cooling pond or to surface waters): This prohibition is based on Basin Plan and the previous Order.

- e). Prohibition A.5 (No discharges of concentrated brine to surface waters): This prohibition is based on BPJ and the previous Order.

**4. Basis for Effluent Limitations**

- a) Effluent Limitations B.1 (Outfall E-001): Effluent limits for conventional and non-conventional pollutants.

Pollutant	Units	30 Day Average	Weekly Average	Max Daily
B.1.a(1). TSS	mg/L	41	-	64
B.1.a(2). TSS	kg/day	38	-	66
B.1.b.BOD	mg/L	30	45	-
B.1.c. Settleable Solids	ml/L	0.1	0.2	-
B.1.d(1).Oil & Grease	mg/L	5	-	8
B.1.d(2).Oil & Grease	kg/day	4.5	-	7.7

- b) Effluent Limitation B.1.a (Total Suspended Solids): This effluent limitation is unchanged from the previous Order and is based on BPJ and Clean Water Act Section 402(o)(2). These limitations were calculated as the 90<sup>th</sup> percentile of all the TSS data collected during 1/90 through 6/96. Mass limitations are unchanged from the previous Order. Compliance has been achieved as demonstrated by the historical effluent data.
- c) Effluent Limitation B.1.b (BOD): This effluent limitation is unchanged from the previous Order and is based on Basin Plan and BPJ
- d) Effluent Limitation B.1.c (Settleable solids): This effluent limitation is unchanged from the previous permit and is based Basin Plan and BPJ.
- e) Effluent Limitation B.1.d (Oil and Grease): This effluent limitation is unchanged from the previous permit and is based Basin Plan and BPJ. Mass limitations are unchanged from the previous Order.
- f) Effluent Limitation B.2 (pH, minimum 6.5, maximum 9): This effluent limitation is unchanged from the previous Order and is based on Basin Plan and BPJ.
- g) Effluent Limitation B.3 (Temperature): This effluent limitation is unchanged from the previous permit and is based on BPJ. Compliance has been demonstrated by existing plant performance.
- h) Effluent Limitation B.4 (Whole Effluent Acute Toxicity): The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limitations are necessary to ensure that

this objective is protected. The whole effluent acute toxicity limitations for an 3-sample median and an single sample maximum are consistent with the previous permit and are based on the Basin Plan (Table 4-4, pg. 4-70).

The previous Order required testing using three-spine stickleback and rainbow trout. This Order requires the Discharger to switch to the U.S. EPA most recently promulgated testing method, currently the 5<sup>th</sup> edition by no later than September 15, 2005. The Discharger shall also test rainbow trout and fathead minnow concurrently to identify a more sensitive species, and use that single species for compliance monitoring if approved by the Executive Officer.

i) Effluent Limitation B.5 (Toxic Substances):

1) **Reasonable Potential Analysis (RPA)**

Code of Federal Regulations Title 40, Part 122.44(d)(1)(i) (40 CFR 122.44(d)(1)(i)) specifies that permits must include WQBELs for all pollutants “which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard” (have Reasonable Potential or RP). Thus, assessing whether a pollutant has RP is the fundamental step in determining whether or not a WQBEL is required. The following sections describe the RPA and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.

- i) *WQOs and WQC*: The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan, and applicable WQC in the CTR/NTR, or site-specific objectives (SSOs) if available, after adjusting for site-specific hardness and translators, if applicable. The governing WQOs/WQC are shown in Attachment 1 of this Fact Sheet.
- ii) *Methodology*: The RPA uses the methods and procedures prescribed in Section 1.3 of the SIP. Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge shows reasonable potential with respect to the governing WQOs or WQC. Attachment 1 of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.
- iii) *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from September 2001 through February 2004 for most priority pollutants. And from March 1998 through February 2004 for lead and zinc. The Discharger also collected receiving water data in 2002 and 2003. These data were used in the RPA.
- iv) *RPA determination*: The RPA results are shown below in Table B and Attachment 1 of this Fact Sheet. The pollutants that exhibit reasonable potential are copper, lead, selenium, zinc, cyanide, and bis(2-ethylhexyl)phthalate, and dioxin TEQ.

**Table B. Summary of Reasonable Potential Results**

# in CTR	PRIORITY POLLUTANTS	Governing WQO/WQC (ug/L)	MEC or Minimum DL <sup>[1]</sup> (µg/L)	Maximum Background or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
1	Antimony	4,300	71.1	3.9	No
2	Arsenic	36	13.3	34.8	No

# in CTR	PRIORITY POLLUTANTS	Governing WQO/WQC (ug/L)	MEC or Minimum DL <sup>[1]</sup> (ug/L)	Maximum Background or Minimum DL <sup>[1]</sup> (ug/L)	RPA Results <sup>[2]</sup>
3	Beryllium	No Criteria	0.1	0.1	Uo
4	Cadmium	7.3	0.02	0.02	No
5a	Chromium (III)	644	NA	NA	Ud
5b	Chromium (VI)	11	2	2	No
6	Copper	13	<b>46.1</b>	<b>57.7</b>	<b>Yes</b>
7	Lead	8.5	<b>110</b>	<b>4.6</b>	<b>Yes</b>
8	Mercury	0.051	0.0051	0.0136	No
9	Nickel	27	20	16	No
10	Selenium	5.00	<b>41</b>	<b>144</b>	<b>Yes</b>
11	Silver	2.2	1.55	0.08	No
12	Thallium	6.3	0.3	0.17	No
13	Zinc	113	91	<b>117</b>	<b>Yes</b>
14	Cyanide	1	<b>2</b>	<b>30</b>	<b>Yes</b>
15	Asbestos	No Criteria	NA		Uo
	TCDD TEQ	0.000000014	<b>0.0000059</b>	<b>0.0000601</b>	<b>Yes</b>
17	Acrolein	780	2.5	2.5	No
18	Acrylonitrile	0.66	1	1	No
19	Benzene	71	0.5	0.5	No
20	Bromoform	360	0.5	0.5	No
21	Carbon Tetrachloride	4.4	0.5	0.5	No
22	Chlorobenzene	21,000	0.5	0.5	No
23	Chlorodibromomethane	34	0.5	0.5	No
24	Chloroethane	No Criteria	0.5	0.5	Uo
25	2-Chloroethylvinyl ether	No Criteria	0.5	0.5	Uo
26	Chloroform	No Criteria	0.5	0.5	Uo
27	Dichlorobromomethane	46	0.5	0.5	No
28	1,1-Dichloroethane	No Criteria	0.5	0.5	Uo
29	1,2-Dichloroethane	99	0.5	0.5	No
30	1,1-Dichloroethylene	3.2	0.5	0.5	No
31	1,2-Dichloropropane	39	0.5	0.5	No
32	1,3-Dichloropropylene	1,700	0.5	0.5	No
33	Ethylbenzene	29,000	0.5	0.5	No
34	Methyl Bromide	4,000	0.5	0.5	No
35	Methyl Chloride	No Criteria	0.5	0.5	Uo
36	Methylene Chloride	1,600	1	1	No
37	1,1,2,2-Tetrachloroethane	11	0.5	0.5	No
38	Tetrachloroethylene	8.85	0.5	0.5	No
39	Toluene	200,000	0.5	0.5	No
40	1,2-Trans-Dichloroethylene	140,000	0.5	0.5	No
41	1,1,1-Trichloroethane	No Criteria	0.5	0.5	Uo
42	1,1,2-Trichloroethane	42	0.5	0.5	No
43	Trichloroethylene	81	0.5	0.5	No
44	Vinyl Chloride	525	0.5	0.5	No
45	2-Chlorophenol	400	1	1	No

# in CTR	PRIORITY POLLUTANTS	Governing WQO/WQC (ug/L)	MEC or Minimum DL <sup>[1]</sup> (ug/L)	Maximum Background or Minimum DL <sup>[1]</sup> (ug/L)	RPA Results <sup>[2]</sup>
46	2,4-Dichlorophenol	790	1	1	No
47	2,4-Dimethylphenol	2,300	1	1	No
48	2-Methyl- 4,6-Dinitrophenol	765	1	1	No
49	2,4-Dinitrophenol	14,000	2	2	No
50	2-Nitrophenol	No Criteria	1	1	Uo
51	4-Nitrophenol	No Criteria	2	2	Uo
52	3-Methyl 4-Chlorophenol	No Criteria	0.5	0.5	Uo
53	Pentachlorophenol	7.90	1	1	No
54	Phenol	4,600,000	0.061	0.5	No
55	2,4,6-Trichlorophenol	6.50	1	1	No
56	Acenaphthene	2,700	0.5	0.5	No
57	Acenaphthylene	No Criteria	0.5	1	Uo
58	Anthracene	110,000	1	1	No
59	Benzidine	0.00054	1	1	No
60	Benzo(a)Anthracene	0.049	1	1	No
61	Benzo(a)Pyrene	0.049	1	1	No
62	Benzo(b)Fluoranthene	0.049	1	1	No
63	Benzo(ghi)Perylene	No Criteria	1	1	Uo
64	Benzo(k)Fluoranthene	0.049	2	2	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	1	1	Uo
66	Bis(2-Chloroethyl)Ether	1.40	0.5	0.5	No
67	Bis(2-Chloroisopropyl)Ether	170,000	0.5	0.5	No
68	Bis(2-Ethylhexyl)Phthalate	5.90	2	7	Yes
69	4-Bromophenyl Phenyl Ether	No Criteria	1	1	Uo
70	Butylbenzyl Phthalate	5,200	1	5	No
71	2-Chloronaphthalene	4,300	NA	1	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	1	1	Uo
73	Chrysene	0.049	1	1	No
74	Dibenzo(a,h)Anthracene	0.049	1	1	No
75	1,2-Dichlorobenzene	17,000	0.5	0.5	No
76	1,3-Dichlorobenzene	2,600	0.5	0.5	No
77	1,4-Dichlorobenzene	2,600	0.5	0.5	No
78	3,3-Dichlorobenzidine	0.077	1	1	No
79	Diethyl Phthalate	120,000	1	1	No
80	Dimethyl Phthalate	2,900,000	1	1	No
81	Di-n-Butyl Phthalate	12,000	1	5	No
82	2,4-Dinitrotoluene	9.10	1	1	No
83	2,6-Dinitrotoluene	No Criteria	1	1	Uo
84	Di-n-Octyl Phthalate	No Criteria	1	47	Uo
85	1,2-Diphenylhydrazine	0.54	0.5	0.5	No

# in CTR	PRIORITY POLLUTANTS	Governing WQO/WQC (ug/L)	MEC or Minimum DL <sup>[1]</sup> (ug/L)	Maximum Background or Minimum DL <sup>[1]</sup> (ug/L)	RPA Results <sup>[2]</sup>
86	Fluoranthene	370	0.5	0.5	No
87	Fluorene	14,000	2	2	No
88	Hexachlorobenzene	0.00077	0.5	0.5	No
89	Hexachlorobutadiene	50	0.5	0.5	No
90	Hexachlorocyclopentadiene	17,000	1	1	No
91	Hexachloroethane	8.90	0.5	0.5	No
92	Indeno(1,2,3-cd)Pyrene	0.049	1	1	No
93	Isophorone	600	0.5	0.5	No
94	Naphthalene	No Criteria	0.5	0.5	Uo
95	Nitrobenzene	1,900	0.5	0.5	No
96	N-Nitrosodimethylamine	8.10	0.5	0.5	No
97	N-Nitrosodi-n-Propylamine	1.40	1	1	No
98	N-Nitrosodiphenylamine	16	0.5	0.5	No
99	Phenanthrene	No Criteria	1	1	Uo
100	Pyrene	11,000	1	1	No
101	1,2,4-Trichlorobenzene	No Criteria	1	1	Uo
102	Aldrin	0.00014	0.002	0.002	No
103	alpha-BHC	0.013	0.005	0.005	No
104	beta-BHC	0.046	0.002	0.002	No
105	gamma-BHC	0.063	0.005	0.005	No
106	delta-BHC	No Criteria	0.002	0.002	Uo
107	Chlordane	0.00059	0.01	0.01	No
108	4,4'-DDT	0.00059	0.005	0.005	No
109	4,4'-DDE (linked to DDT)	0.00059	0.005	0.005	No
110	4,4'-DDD	0.00084	0.01	0.01	No
111	Dieldrin	0.00014	0.005	0.005	No
112	alpha-Endosulfan	0.0087	0.005	0.005	No
113	beta-Endosulfan	0.0087	0.005	0.005	No
114	Endosulfan Sulfate	240	0.01	0.01	No
115	Endrin	0.0023	0.005	0.005	No
116	Endrin Aldehyde	0.81	0.005	0.005	No
117	Heptachlor	0.00021	0.005	0.005	No
118	Heptachlor Epoxide	0.00011	0.005	0.005	No
119-125	PCBs sum	0.00017	0.1	0.1	No
126	Toxaphene	0.00020	0.1	0.1	No
	Tributyltin	15	NA	NA	Ud

[1] Values for MEC or maximum background in bold are the actual detected concentrations, otherwise the values shown are the minimum detection levels.

NA = Not Available (there is no monitoring data or WQO/WQC for this constituent).

[2] RP = Yes, if either MEC or background > WQO/WQC.

RP = No, if both MEC or background < WQO/WQC or all effluent concentrations non-detect and background < WQO/WQC or no background available.

RP = Uo (undetermined if no objective promulgated); Ud (undetermined if no effluent data or receiving water data available).

v) *Pollutants with no reasonable potential*: WQBELs are not included in the Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for those pollutants is still required, under the provisions of the Board's August 6, 2001 Letter. If concentrations of these constituents are found to increase significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water. If the Discharger has fulfilled the sampling requirements according to its approved sampling plan submitted per the August 6, 2001 Letter, the Discharger shall perform a minimum of one sampling event of all 126 priority pollutants during the life of the permit, and submit the results at least 180 days prior to permit expiration (with the permit renewal application).

vi) *Permit reopener*: The permit includes a reopener provision to allow numeric effluent limitations to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Board.

## 2) Final Water Quality-Based Effluent Limitations

Toxic substances are regulated by WQBELs derived from the Basin Plan for copper and nickel site-specific objectives for South San Francisco Bay, the CTR, the NTR, and/or best professional judgment (BPJ). WQBELs in this Order are based on the evaluation of the Discharger's data as described above under the Reasonable Potential Analysis. Numeric WQBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. The WQOs or WQC used for each pollutant with reasonable potential is indicated in Table C below as well as in Attachment 2.

**Table C. Water Quality Objectives/Criteria for Pollutants with RP**

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Human Health WQC (µg/L)	Basis of Lowest WQO /WQC Used in RP
Copper	13	20.4	--	BP, SSO
Lead	8.5	221	--	CTR
Selenium	5	20	--	NTR
Zinc	91	100	--	CTR
Cyanide	1	1	220,000	NTR
TCDD TEQ	--	--	$1.4 \times 10^{-8}$	CTR
Bis(2-ethylhexyl)phthalate	--	--	5.9	CTR

## 3) Interim Limitations

Interim effluent limitations were derived for those constituents (copper, lead, selenium, zinc, cyanide, and bis(2-ethylhexyl)phthalate, for which the Discharger has shown infeasibility of complying with the respective final limitations and has demonstrated that compliance schedules are justified based on the Discharger's source control and pollution minimization efforts in the past and continued efforts in the present and future. The interim effluent concentration limitations for copper, lead, selenium, and zinc are based on statistical analyses of data submitted by the Discharger. The interim limitation for cyanide and bis(2-ethylhexyl)phthalate are the SIP-specified minimum levels (MLs). The interim limitations are discussed more fully in Attachment 4 of this Fact Sheet.

**4) Feasibility Evaluation and final WQBELs**

The Discharger submitted an infeasibility to comply report on February 14, 2005, for copper, lead, selenium, zinc, cyanide, and dioxin TEQ. For constituents that Board staff could perform a meaningful statistical analysis (i.e., copper, lead, selenium, and zinc), it used self-monitoring data from 2001-2004 to compare the mean, 95<sup>th</sup> percentile, and 99<sup>th</sup> percentile with the long-term average (LTA), AMEL, and MDEL to confirm if it is feasible for the Discharger to comply with WQBELs. If any of the LTA, AMEL, and MDEL exceeds the mean, 95<sup>th</sup> percentile, and 99<sup>th</sup> percentile, the infeasibility for the Discharger to comply with WQBELs is confirmed statistically. Compliance feasibility Table D below shows these comparisons in µg/L.

**Table D: Summary of Feasibility Analysis**

<u>Constituent</u>	<u>Mean / LTA</u>	<u>95<sup>th</sup> / AMEL</u>	<u>99<sup>th</sup> / MDEL</u>	<u>Feasible to Comply</u>
Copper	24.1 > 6.6	46.2 > 10.2	58 > 20.4	<b>No</b>
Lead	12 > 4.5	28 > 4.5	113 > 14.2	<b>No</b>
Selenium	29.5 > 2.6	48.6 > 4.1	58.1 > 8.2	<b>No</b>
Zinc	21.5 < 32	104 > 36	315 > 100	<b>No</b>

**Attachment 4** documents the infeasibility analysis and interim performance based limits (IPBLs) calculations in greater detail.

Table E below summarizes the calculated WQBELs, and the feasibility to comply analysis for all pollutants with effluent limitations. The WQBELs calculation is attached as Attachment 2 of this Fact Sheet.

**Table E. Final QBELs and Feasibility to Comply**

Pollutant	MDEL µg/L	AMEL µg/L	Feasible to Comply?
Copper	20.4	10.3	No
Lead	14.2	4.5	No
Selenium	8.2	4.1	No
Zinc	100	36	No
Cyanide	1.0	0.5	No
TCDD TEQ	$1.4 \times 10^{-8}$	$2.8 \times 10^{-8}$	No
Bis(2-Ethylhexyl)Phthalate	11.8	5.9	Yes

**5) Interim Concentration Limitations and Compliance Schedules**

This permit establishes compliance schedules until May 22, 2012, for copper, May 18, 2010, for lead, selenium, zinc, and cyanide, and July 1, 2015, for dioxin TEQ.

During the compliance schedules, interim limitations are included based on current treatment facility performance or on previous permit limitations, whichever is more stringent, to maintain existing water quality. Findings 44 to 49 discuss the basis for the compliance schedules and final compliance dates. The Board may take appropriate enforcement actions if interim limitations and requirements are not met. **Attachment 4** details the calculation of the interim limits.

**6) Attainability of Interim Performance-Based Limitations**

i. Copper

During the period of September 2001 through February 2004, the Discharger's effluent concentrations for copper ranged from 1.9 µg/L to 46.1 µg/L (9 samples). All samples are below the interim limitation of 72.6 µg/L. It is, therefore, expected that the facility can comply with the interim limitation for copper.

ii. Lead

During the period of March 1998 through February 2004, the Discharger's effluent concentrations for lead ranged from <0.01 µg/L to 110 µg/L (16 samples). All samples are below the interim limitation of 113 µg/L. It is, therefore, expected that the facility can comply with the interim limitation for lead.

iii. Selenium

During the period of September 2001 through February 2004, the Discharger's effluent concentrations for selenium ranged from <2.2 µg/L to 41 µg/L (7 samples). All samples are below the interim limitation of 70 µg/L, it is, therefore, expected that the Discharger can comply with the IPBL for selenium.

iv. Zinc

During the period of March 1998 through February 2004, the Discharger's effluent concentrations for zinc ranged from  $<0.3 \mu\text{g/L}$  to  $113 \mu\text{g/L}$  (17 samples). All samples are below the interim limitation of  $944 \mu\text{g/L}$ , it is, therefore, expected that the Discharger can comply with the IPBL for zinc.

v. Cyanide

During the period of September 2001 through February 2004, the Discharger's effluent concentrations for cyanide ranged from  $<2 \mu\text{g/L}$  to  $<10 \mu\text{g/L}$  (8 samples). With the exception of one sample ( $<10 \mu\text{g/L}$ , on September 4, 2001), all samples are below the interim limitation of  $5 \mu\text{g/L}$ . It is, therefore, expected that the facility can comply with the interim limitation for copper.

**7) Comparison to Previous Permit Limitations**

The effluent limitations for TSS, oil and grease, BOD, settleable matter, pH, and temperature, and acute toxicity have been retained from the previous Order. The previous permit does not include effluent limitations for copper, lead, selenium, zinc, cyanide, or bis(2-ethylhexyl)phthalate.

**7. Basis for Receiving Water Limitations**

- a). Receiving water limitations C.1 and C.2 (conditions to be avoided): These limitations are based on the previous permit and the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, pages 3-2 – 3-5.
- b). Receiving water limitation C.3 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

**8. Basis for Self-Monitoring Requirements**

The basis for the Self-Monitoring Requirements is described in Finding 59.

**9. Basis for Provisions**

- a) Provision D.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit is based on 40 CFR 122.46.
- b) Provision D.2 (Effluent Characterization Study): This provision is based on the Basin Plan and the SIP.
- c) Provision D.3 (Receiving Water Study): This provision is based on the Basin Plan and the SIP.
- d) Provision D.4 (Compliance Schedule Requirements): This provision is based on Section 2.1 of the SIP.

- e) Provision D.5 (Pollutant Minimization Program): This provision is based on the SIP, Section 2.4.5.
- f) Provision D.6 (Storm Water Pollution Prevention Plan and Annual Report). This is based on the Basin Plan, 40 CFR part 122, and Regional Board Resolution No. 74-10.
- g) Provision D.7 (Best Management Practices Program): This provision is based on the Clean Water Act, Section 304(e), and 40 CFR part 122.44(k).
- h) Provision D.8 (Optional Mass Offset): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to San Francisco Bay.
- i) Provision D.9 (Optional 303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): Consistent with the SIP, the Discharger may participate in the development of region-wide TMDL or SSO studies.
- j) Provision D.10 (Optional Site-Specific Translator Study): This provision allows the Discharger to conduct an optional copper, lead, nickel, and zinc translator study, based on BPJ and the SIP. This provision is based on the need to gather site-specific information in order to apply a different translator from the default translator specified in the CTR and SIP. Without site-specific data, the default translators from CTR have been used to translate the dissolved WQC/WQOs for copper, lead, nickel, and zinc to total standards in recoverable metals.
- k) Provision D.11 (Operations and Maintenance Manual, Review and Status Reports) and D.12 (Contingency Plan, Review and Status Report): These provisions are based on the Basin Plan, the requirements of 40 CFR 122, and the previous permit.
- l) Provision D.13 (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limitations as necessary in response to updated WQOs that may be established in the future. This provision is based on 40 CFR 123.
- m) Provision D.14 (Self-Monitoring Program): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.63. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.
- n) Provision D.15 (Standard Provisions and Reporting Requirements): The purpose of this provision is to require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for*

*NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the permit as an attachment to it. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.

- o) Provisions D.16 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.
- p) Provision D.17 (Permit Reopener): This provision is based on 40 CFR 123.
- q) Provision D.18 (NPDES Permit): This provision is based on 40 CFR 123.
- r) Provisions D.19 (Order Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

#### **V. WASTE DISCHARGE REQUIREMENT APPEALS**

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

#### **VI. ATTACHMENTS**

**Attachment 1:** Reasonable Potential Analysis Results

**Attachment 2:** Calculation of Final WQBELs

**Attachment 3:** Effluent Data

**Attachment 4:** Infeasibility Evaluation and Calculation of Performance Based Effluent Limits

## **Attachment 1**

### **Reasonable Potential Analysis Results**

ATTACHMENT 1  
REASONABLE POTENTIAL ANALYSIS RESULTS

Pollutant	C (µg/L)	Effluent Data (1/2017)	Step 2 - Step 3	Step 3	Step 4	Step 5	Step 6	Step 7 & 8	Final Result	Reason
1. Antimony	4,300	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
2. Arsenic	36	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
3. Barium	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
4. Cadmium	7.31	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
5a. Chromium (III)	644.30	N	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
5b. Chromium (VI)	1.00	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
6. Lead	5.2	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
6. Mercury (total)	0.051	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
10. Selenium (total)	27.05	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
11. Silver	5.00	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
12. Thallium	2.20	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
13. Zinc	6.30	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
14. Zinc	94.91	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
15. Cyanide	1.00	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
16. Cyanide	0.00000014	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
17. Acetaminophen	780	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
18. Acrylonitrile	0.66	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
19. Benzene	7.1	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
20. Carbon Tetrachloride	4.1	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
21. Carbon Tetrachloride	4.1	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
22. Chlorobenzene	21,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
23. Chloroform	34	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
24. Chloroform	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
25. Chloroform	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
26. Chloroform	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
27. Dichlorobromomethane	46	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
28. 1,1-Dichloroethane	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
29. 1,1-Dichloroethane	99	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
30. 1,2-Dichloroethane	39	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
31. 1,2-Dichloroethane	39	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
32. 1,3-Dichloropropane	1,700	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
33. Ethylbenzene	29,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
34. Methyl Bromide	15,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
35. Methyl Bromide	15,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
36. Methylene Chloride	1,600	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
37. 1,1,2,2-Tetrachloroethane	11	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
38. 1,1,2,2-Tetrachloroethane	8.55	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
39. Toluene	20,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
40. Toluene	20,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
41. 1,1,1-Trichloroethane	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
42. 1,1,2-Trichloroethane	42	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
43. Trichloroethylene	81	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
44. Vinyl Chloride	525	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
45. Vinyl Chloride	76	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
46. 2,4-Dichlorophenol	1,700	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
47. 2,4-Dimethylphenol	2,300	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
48. 2-Methyl-4,6-Dinitrophenol	755	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
49. 2,4-Dinitrophenol	14,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
50. 2,4-Dinitrophenol	14,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
51. 4-Nitrophenol	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
52. 3-Methyl-4-Chlorophenol	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
53. Pentachlorophenol	7.90	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
54. Phthalate	4,800,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
55. Acetaminophen	2,700	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
56. Acetaminophen	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
57. Acetaminophen	110,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
58. Aniline	0.0054	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
59. Benzene	0.0054	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
60. Benzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
61. Benzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
62. Benzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
63. Benzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
64. Benzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
65. Benzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
66. Benzene	170,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
67. Benzene	5.90	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
68. Benzene	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
69. Benzene	2,200	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
70. Benzene	2,200	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
71. Benzene	2,200	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
72. Chlorobenzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
73. Chlorobenzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
74. Chlorobenzene	0.049	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
75. 1,2-Dichlorobenzene	17,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
76. 1,2-Dichlorobenzene	17,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
77. 1,4-Dichlorobenzene	2,600	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
78. 3,3-Dichlorobenzene	0.777	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
79. Diethyl Phthalate	120,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
80. Diethyl Phthalate	2,800,000	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
81. Diethyl Phthalate	9.10	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
82. Diethyl Phthalate	9.10	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
83. Diethyl Phthalate	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
84. Diethyl Phthalate	No Criteria	Y	Y	Y	Y	Y	Y	Y	Y	No Criteria
85. Diethyl Phthalate	0.04	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND
86. Diethyl Phthalate	270	Y	Y	Y	Y	Y	Y	Y	Y	MEC-C & B is ND



## **Attachment 2**

### **Calculation of Final WQBELs**

Attachment 2.  
Calculation of Final WQBELs

PRIORITY POLLUTANTS	Copper		Lead		Selenium		Zinc		Cyanide		Bis(2-Ethylhexyl) Phthalate		Dioxin-TEQ
	BP, SSO	CTR SW	CTR SW	CTR FW	CTR SW	CTR SW	CTR, hh	CTR, hh	(pg/l)				
Basis and Criteria type	13.0	8.5	5.0	91.0	1.0	5.9	0.014						
Lowest WQO													
Translators													
Dilution Factor (D) (if applicable)	0	0	0	0	0	0	0	0	0	0	0	0	0
no. of samples per month	4	4	4	4	4	4	4	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
HH criteria analysis required? (Y/N)	N	N	N	N	N	N	N	N	N	N	N	N	N
Applicable Acute WQO	20.40	221	20	100	1								
Applicable Chronic WQO	13.00	8.5	5	91	1								
HH criteria													
Background (max conc for Aquatic Life calc)	2.45	0.8	0.0516	4.4	0.4								
Background (avg conc for HH calc)													
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	N	N	N	N	N	N	N	N	N	N	0.03165
ECA acute	20.4	221	20	100	1								
ECA chronic	13	8.5	5	91	1								
ECA HH													0.014
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	N	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y
avg of data points		12.0441		21.529		28.041							
SD		28.8517											
CV calculated	N/A	2.396	N/A	1.302	N/A	0.600	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CV (Selected) - Final	0.600	2.396	0.600	1.302	0.600	1.302	0.600	0.600	0.600	0.600	0.600	0.600	0.600
ECA acute mult99	0.32	0.10	0.32	0.16	0.32								
ECA chronic mult99	0.53	0.17	0.53	0.30	0.53								
LTA acute	6.55	23.09	6.42	16.19	0.32								
LTA chronic	6.86	1.48	2.64	27.24	0.53								
minimum of LTAs	6.55	1.48	2.64	16.19	0.32								
AMEL mult95	1.55	3.02	1.55	2.23	1.55								1.55
MDEL mult99	3.11	9.57	3.11	6.18	3.11								3.11
AMEL (aq life)	10.17	4.47	4.09	36.09	0.50								
MDEL (aq life)	20.40	14.15	8.21	100.00	1.00								
MDEL/AMEL Multiplier	2.01	3.16	2.01	2.77	2.01								2.01
AMEL (human hith)													5.9
MDEL (human hith)													11.8
minimum of AMEL for Aq. life vs HH	10.2	4.5	4.1	36.1	0.5								0.014
minimum of MDEL for Aq. Life vs HH	20.4	14.2	8.2	100.0	1.0								0.028
Current limit in permit (30-d avg)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Current limits in permit (daily)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Final limit - Calculated AMEL	10.2	4.5	4.1	36.1	0.5								0.014
Final limit - Calculated MDEL	20.4	14.2	8.2	100.0	1.0								0.028
Max Eff Conc (MEC)	46.1	110.0	41	113	ND	ND	ND	ND	ND	ND	ND	ND	5.9E-06
Feasible for immediate compliance?	No	No	No	No	No	No	No	No	No	No	No	No	NA
Interim Limits for those where TMDL is final limit	72.6	113	70	944	5								NA

Note: units are in ug/L except for Dioxin, which is in pg/L.

**Attachment 3**

**Effluent Data**



Attachment 3.  
Effluent Data

Morton International, Inc.  
Newark Facility  
NPDES Permit

ID	Chemical Name	EFFLUENT DATA												RECEIVING WATER DATA				
		3/23/03	12/9/02	9/22/02	10/14/02	5/23/02	3/10/02	12/25/01	9/10/01	9/4/01	10/27/03	2/8/04	MAX	3/24/03	1/26/02	9/25/02	6/23/02	3/12/02
66	Bis(2-Chloroethyl)Ether																	
67	Bis(2-Chloroisopropyl)Ether																	
68	Bis(2-Ethylhexyl)Phthalate																	
69	4-Bromophenyl Phenyl Ether																	
70	Bulbenzyl Phthalate																	
71	2-Chloronaphthalene																	
72	4-Chlorophenyl Phenyl Ether																	
73	Chrysene																	
74	Dibenz(a,h)Anthracene																	
75	1,2-Dichlorobenzene																	
76	1,3-Dichlorobenzene																	
77	1,4-Dichlorobenzene																	
78	3,3-Dichlorobenzidine																	
79	Diethyl Phthalate																	
80	Dimethyl Phthalate																	
81	Di-n-Butyl Phthalate																	
82	2,4-Dinitrotoluene																	
83	2,6-Dinitrotoluene																	
84	Di-n-Octyl Phthalate																	
85	1,2-Diphenylhydrazine																	
86	Fluoranthene																	
87	Fluorene																	
88	Hexachlorobenzene																	
89	Hexachlorobutadiene																	
90	Hexachlorocyclopentadiene																	
91	Hexachloroethane																	
92	Indene(1,2,3-cd) Pyrene																	
93	Isophorone																	
94	Naphthalene																	
95	Nitrobenzene																	
96	N-Nitrosodimethylamine																	
97	N-Nitrosod-n-Propylamine																	
98	N-Nitrosodiphenylamine																	
99	Phenanthrene																	
100	Pyrene																	
101	1,2,4-Trichlorobenzene																	
102	Aldrin																	
103	alpha-BHC																	
104	beta-BHC																	
105	gamma-BHC																	
106	delta-BHC																	
107	Chlordane																	
108	4,4-DDT																	
109	4,4-DDE																	
110	4,4-DDD																	
111	Dieldrin																	
112	alpha-Endosulfan																	
113	beta-Endosulfan																	
114	Endosulfan Sulfate																	
115	Endrin																	
116	Endrin Aldehyde																	
117	Heptachlor																	
118	Heptachlor Epoxide																	
119-125	PCBs																	
126	Toxaphene																	

**Attachment 4**

**Infeasibility Evaluation and Calculation of Performance  
Based Effluent Limits**

# Infeasibility Evaluation and Calculation of Interim Performance Based Effluent Limits – Morton International, Inc.

## A. INTRODUCTION

This report documents the infeasibility analysis and interim performance based limits (IPBLs) calculations the Water Board staff has conducted for reissuance of Morton International, Inc., Morton Salt Division, Newark Facility (hereinafter the Discharger), NPDES permit (No. CA0005185). The analysis is based on evaluating the probability distribution of the Discharger's effluent data collected between 2001 and 2004 (1998–2004 for lead and zinc). The statistical software MiniTab (and macro MDLNORM by Dr. Hesel) was used to determine statistical results.

Seven pollutants are analyzed here because they demonstrate reasonable potential (RP), as discussed in a separate analysis (see the RPA spreadsheet). RP was triggered either because the maximum effluent concentration (MEC) exceeded the minimum water quality objective (WQO), or the maximum background concentration exceeded the maximum background concentration (B):

Table 1. Pollutants Demonstrating Reasonable Potential

CTR No.	Pollutant	WQO/WQC (µg/L)	Basis <sup>[1]</sup>	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential
6	Copper	13	BP, SSO	46.1	57.7	MEC>WQO
7	Lead	8.5	CTR, sw	110	4.6	MEC>WQO
10	Selenium	5.0	NTR, fw	41	144	MEC>WQO
13	Zinc	91	CTR, sw	113	117	MEC>WQO
14	Cyanide	1	NTR, sw	< 2	30	B>WQO
	TCDD TEQ	$1.4 \times 10^{-8}$	CTR, hh	$5.9 \times 10^{-6}$	$6.01 \times 10^{-5}$	MEC>WQO
68	Bis(2-Ethylhexyl)Pht halate	5.9	CTR, hh	<2	7.0	B>WQO

1. CTR = California Toxic Rule; BP = Basin Plan, NTR = National Toxics Rule, SSO = site-specific objective, sw = salt water, fw = fresh water, hh = human health

## B. METHOD

The four steps used in the infeasibility analyses and IPBL calculations are described below:

### 1. Which frequency distribution model does effluent data most accurately follow—Normal or Log-Normal?

The best distribution was evaluated by considering the following criteria, and using best judgment:

- a) Which AD (Anderson Darling coefficient) is lowest? ( $< 1.01$ ?)
- b) Which P-value is greatest? ( $> 0.05$ ?)
- c) Which symmetry plot best follows a straight line?

### 2. Determine Mean, 95<sup>th</sup> and 99<sup>th</sup> Percentile of Effluent Data

- a) For Normal Distribution:  
 $95^{\text{th}} \text{ Percentile} = \text{Mean} + 1.645 * \text{SD}$  (where SD is Standard Deviation)  
 $99^{\text{th}} \text{ Percentile} = \text{Mean} + 2.326 * \text{SD}$
- b) For Log-Normal Distribution:  
 $95^{\text{th}} \text{ Percentile} = \exp(\text{Transformed\_Mean} + 1.645 \text{ Transformed\_SD})$   
 $99^{\text{th}} \text{ Percentile} = \exp(\text{Transformed\_Mean} + 2.326 * \text{Transformed\_SD})$

### 3. Is it feasible for discharger to comply with Average Monthly Effluent Limit (AMEL) and Maximum Daily Effluent Limit (MDEL)?

If any one or more of the following three conditions exist, then infeasibility is concluded:

- a)  $95^{\text{th}} \text{ Percentile} > \text{AMEL}$
- b)  $99^{\text{th}} \text{ Percentile} > \text{MDEL}$
- c)  $\text{Mean of Non-Transformed Data} > \text{Long Term Average (LTA)}$

(Mean of non-transformed data is compared to LTA, since it is the best estimate of a true average. Converting the transformed mean back to the original scale will not accurately estimate the true average, because of transformation bias.)

### 4. Determine Performance Based Effluent Limits (IPBLs) if enough data

If infeasibility is concluded, set IPBL to the 99.87<sup>th</sup> Percentile of effluent data:

- a) For normal distribution:  
 $\text{IPBL} = \text{Mean} + 3 * \text{SD}$
- b) For log-normal distribution:  
 $\text{IPBL} = \exp(\text{Transformed\_Mean} + 3 * \text{Transformed\_SD})$

**C. SUMMARY**

The following table summarizes the feasibility determinations and IPBLs for each pollutant (all units in micrograms per liter). For all pollutants evaluated, it was found there is a significant statistical likelihood the Discharger will not be able to immediately comply with the final water quality based effluent limitations (WQBELs), based on recent plant performance, or due to uncertainty associated with the large magnitude of the available method detection limits (MDLs). Section D below describes the results of the analyses for each pollutant in greater detail. (The WQBELs (Average Monthly Effluent Limits (AMELs) and Maximum Daily Effluent Limits (MDELs)), are calculated in the RPA spreadsheet.)

Table 2. Effluent Data

Date	Cu ug/l	Pb ug/l	Ni ug/l	Se ug/l	Zn ug/L
3/9/1998	<	100			49
9/28/1998		1.9			42
3/8/1999	<	0.5			5.3
9/6/1999	<	3			< 20
3/13/2000	<	3			< 20
9/4/2000	<	3			< 20
3/12/2001	<	3			< 20
9/4/2001	< 10	110	< 20		8.7
9/10/2001				41	< 20
12/26/2001	22.2	1.5	12	34	41
3/10/2002	1.9	0.15	1	2.2	1
6/23/2002	29.4	8.7	10	31.4	29
9/22/2002	30.5	< 0.01	13	32.1	< 0.3
10/14/2002					
12/9/2002	46.1	10.5		39.8	< 0.3
3/23/2003	27.2	2.3	16	23	18
10/27/2003	30.6	0.5	9.2	32.2	8.7
2/8/2004	25.1	0.9	7.2		113

Table 3. Summary of Infeasibility Analysis

Constituent	Mean / LTA	95 <sup>th</sup> / AMEL	99 <sup>th</sup> / MDEL	IPBL	Feasible to Comply
Copper	24.1 > 6.6	46.2 > 10.2	58 > 20.4	72.6	No
Lead	12 > 4.5	28 > 4.5	113 > 14.2	113	No
Selenium	29.5 > 2.6	48.6 > 4.1	58.1 > 8.2	70.0	No
Zinc	21.5 < 32	104 > 36	315 > 100	315	No
Cyanide	Effluent data all ND			5	No
TCDD TEQ	MEC > WQC			NA	No
Bis(2-ethylhexyl)phthalate	All 2 measurements < 2 µg/L (AMEL = 5.9 µg/L, MDEL = 12 µg/L)			NA	Yes

**D. RESULTS**

**(1) COPPER**

Logistic Distribution is best model (AD=1.502)

95<sup>th</sup> percentile = 46.2 > 10.2 (AMEL)

99<sup>th</sup> percentile = 58 > 20.4 (MDEL)

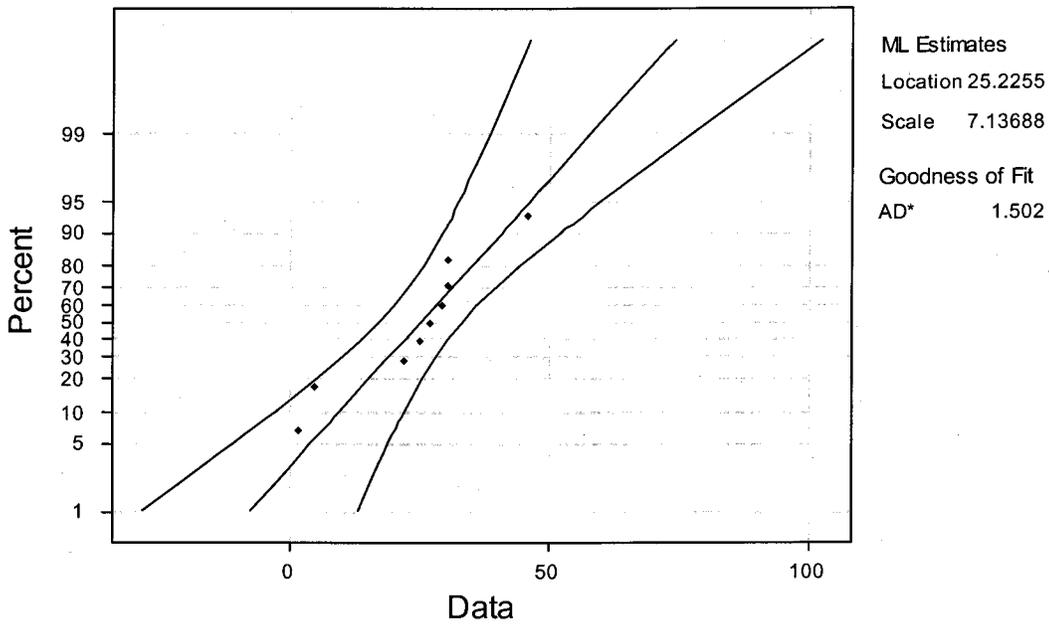
Mean = 24.1 > 6.6 (LTA)

Therefore, infeasible to achieve immediate compliance with WQBELs.

IPBL = 99.87<sup>th</sup> percentile = 72.6 ug/L

**Logistic Probability Plot for Cu**

ML Estimates - 95% CI



**(2) LEAD**

Log-Normal Distribution Best

Log Mean = -0.065

Log SD = 2.067

95<sup>th</sup> =  $\exp(-0.065 + 1.645 * 2.067) = 28 > \text{AMEL}(4.5)$

99<sup>th</sup> =  $\exp(-0.065 + 2.326 * 2.067) = 113 > \text{MDEL}(14.2)$

Mean of Untransformed Data = 12 > LTA(4.5)

Infeasibility Concluded Since:

95<sup>th</sup> > AMEL

99<sup>th</sup> > MDEL

Mean > LTA

99.87<sup>th</sup> percentile =  $\exp(-0.065 + 3 * 2.067) = 462$

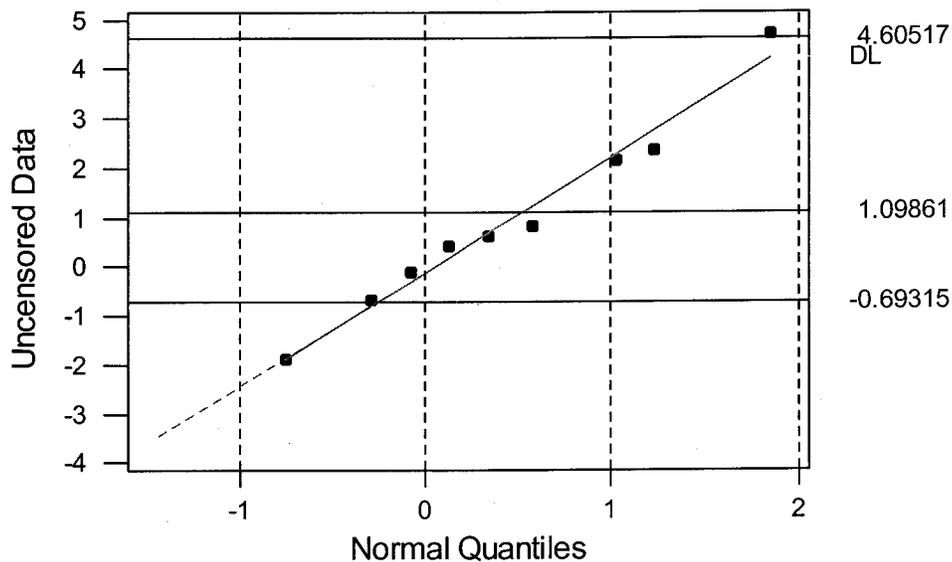
Since the 99.87<sup>th</sup> percentile is exceptionally large (greater than MDEL by a factor of 33), in our judgment, the 99.87<sup>th</sup> percentile as a IPBL would pose an unacceptable risk to the environment. Therefore, the IPBL is set to the lower 99<sup>th</sup> percentile. This parallels the SIP's method of using a 99th percentile occurrence probability for defining MDELs. Therefore:

IPBL = 99<sup>th</sup> percentile = 113 ug/L

**Descriptive Statistics: ESTIMATE**

Variable	N	Mean	Median	TrMean	StDev	SE Mean
ESTIMATE	16	-0.065	-0.166	-0.162	2.067	0.517
Variable	Minimum	Maximum	Q1	Q3		
ESTIMATE	-3.472	4.700	-1.724	0.808		

**Censored Probability Plot**



### (3) Selenium

Logistic Distribution Best (AD=1.552)

95<sup>th</sup> percentile = 28 > 4.1 (AMEL)

99<sup>th</sup> percentile = 113 > 8.2 (MEDL)

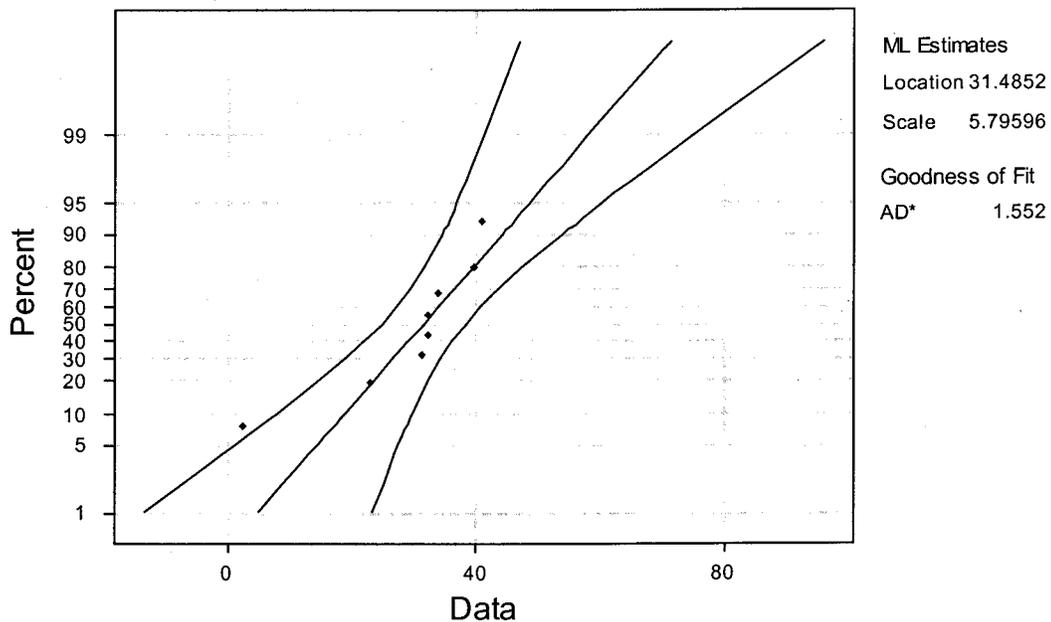
Mean = 29.5 > 2.6 (LTA)

Therefore, infeasible to achieve immediate compliance with WQBELs.

IPBL = 99.87<sup>th</sup> percentile = 70.0 ug/L

#### Logistic Probability Plot for Se

ML Estimates - 95% CI



**(4) Zinc**

Log-Normal Distribution Assumed

LogMean = 1.975

LogSD = 1.625

95<sup>th</sup> =  $\exp(1.975 + 1.645 * 1.625) = 104 > \text{AMEL}(36)$

99<sup>th</sup> =  $\exp(1.975 + 2.326 * 1.625) = 315 > \text{MDEL}(100)$

Mean of Untransformed Data = 21.5 > LTA(32)

Feasibility Concluded Since:

95<sup>th</sup> > AMEL

99<sup>th</sup> > MDEL

Mean > LTA

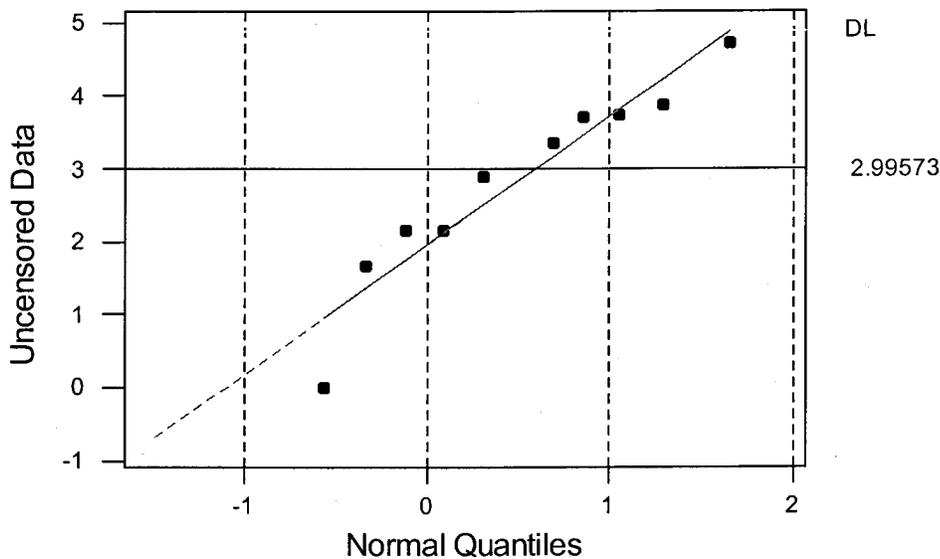
therefore infeasible to achieve immediate compliance

IPBL = 99<sup>th</sup> percentile = 315 ug/L

**Descriptive Statistics: ESTIMATE**

Variable	N	Mean	Median	TrMean	StDev	SE Mean
ESTIMATE	17	1.975	2.163	1.970	1.625	0.394
Variable	Minimum	Maximum	Q1	Q3		
ESTIMATE	-0.709	4.727	0.335	3.540		

**Censored Probability Plot**



**(5) Dioxin-TEQ (TCDD TEQ)**

Because the MEC ( $6.01 \times 10^{-5}$  ug/L) of just two measurements is above the WQO ( $1.4 \times 10^{-8}$  ug/L), it is not feasible for the Discharger to immediately comply with the WQBELs.

At this time an interim limit cannot be determined for Dioxin TEQ since neither a previous permit limit exists, nor is there enough information to determine an interim limit based on current treatment facility performance. Because the monitoring data consists of only two measurements (with one a non-detect), the Board cannot determine an IPBL with a meaningful statistical analysis. The Board staff will establish performance-based limits for dioxin TEQ, as appropriate, when additional data is collected.

**(6) Cyanide**

Because all cyanide effluent measurements are non-detects and the detection limits are above the WQBELs, the Board cannot determine whether it is feasible for the Discharger to immediately comply with the WQBELs. Therefore, consistent with a 2002 court ruling, the Board concludes infeasibility.

Because the previous permit does not include a limitation for cyanide, the interim limit must be set to the IPBL. Because the monitoring data consisted of all non-detect values, the Board cannot determine an IPBL with a meaningful statistical analysis, but must base it at levels which the Discharger can demonstrate compliance. In accordance with compliance determination rules specified in Section 2.4.5 of the SIP, the interim limitation is therefore set at the ML listed in Appendix 4 of the SIP as follows: 5 µg/L.

**(7) Bis(2-ethylhexyl)phthalate**

Because the monitoring data for bis(2-ethylhexyl)phthalate (BEHP) consists of two non-detect values with a MDL of 2 µg/L, which is less than the 5.9 µg/L AMEL and 12 µg/L MDEL, the Board concludes it is feasible for the Discharger to immediately comply with the WQBELs.