CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 93-023
WASTE DISCHARGE REQUIREMENTS

CALIFORNIA AND HAWAIIAN (C&H) SUGAR COMPANY
C&H SUGAR LANDFILL
CROCKETT, CONTRA COSTA COUNTY

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

Facility Description

1. California and Hawaiian (C&H) Sugar Company (hereinafter called the discharger) owns and operates the C&H cane sugar refinery landfill (hereinafter called the facility). Since operation began in 1971, the facility has been operated solely by the discharger, and has received approximately 125,000 tons (dry weight) of wastewater sludge from the refinery and the Crockett/Valona Sanitary District Sewage Treatment Plant.

2. The discharger submitted a January 1989 "Report of Waste Discharge (ROWD)", and a Solid Waste Assessment Test report dated August 7, 1990. References to Chapter 15 are to Chapter 15, Division 3, Title 23 of the California Code of Regulations.

3. The facility occupies 5.68 acres, out of a larger 1,300 acre parcel, in the northwestern side of the county, Township 2 North, Range 3 West, Section 8, Benicia 7.5 minute quadrangle, approximately 1.5 miles south of Carquinez Strait (Attachment 1). The facility is located on relatively steep topography at the head of a small canyon on Franklin Ridge. Although, this facility does not contain hazardous waste, it does not comply with the landfill construction standards of Chapter 15, the state's regulations governing waste disposal to land. The facility is currently divided into two portions (Attachment 2), one active and one inactive portion as follows:

   a. The active portion of the facility is a 4.24 acre cell excavated approximately 12 feet into siltstone bedrock. This portion has a diameter of approximately 500 feet. Sludges have been off-loaded over a maintained working face, spread across the waste drying area and then placed in the active fill area. A berm is maintained around this active portion of the facility to direct drainage internally to a collection sump. The water collected in the sump is occasionally syphoned off by a vacuum truck, however some of the water percolates into the site, and some evaporates. The discharger does not incorporate daily or interim cover over waste; and,

   b. The inactive portion of the facility occupies 1.44 acres of a canyon, on the western side of the site. This canyon fill method was used from 1971 to 1977. The sludge was deposited at the head of the canyon, and allowed to settle across the canyon face. No manipulation, tilling, compaction or covering was practiced. The fill has a depth of approximately 90 feet at the top of the slope overlooking the ravine with a surface slope of approximately 32 percent. A compacted soil berm approximately

9 feet in height contains the waste fill within the ravine. In the ROWD, the discharger proposed to reconstruct and regrade the slope, and install a drainage system for this portion of the facility.

4. There is a small stock watering pond some 500 feet north of the facility. Depth to groundwater has been found to range from about 25 to 100 feet below ground level in the area of waste fill.

Sludge Wastes

5. This facility has received both sugar refining process sludge (Primary Sludge) and sludge from the wastewater treatment plant (Secondary Sludge). As of January 15, 1993, the discharger ceased disposal of the Secondary Sludge at this facility.

6. Primary sludge: The primary sludge disposed at this facility consists of de-watered solids from the primary treatment of C&H sugar refining wastewater. This sludge primarily consists of diatomacous earth (filter aid), bone char dust from bone char washing, calcium phosphate salt from lime and phosphoric acid usage, and small quantities of organic wastes consisting of sugar and insoluble polysaccharide residues from raw sugar. The sludge is composed primarily of calcium with high percentage of magnesium and iron. Average daily generation of this sludge ranges from 50 to 65 tons (wet weight) or 20 to 25 tons (dry weight) based on a "ten-day on, four-day off" schedule of refinery operations. In a letter dated February 25, 1993, the discharger amended the ROWD to reflect the change in quality of sludge currently generated, due to process changes at the refinery. The refinery current operations generate an average 36 to 48 tons (wet weight) or 13 to 17 tons (dry weight). The primary sludge has a pH of 11.6.

7. Secondary Sludge: The secondary sludge consists of de-watered activated sludge from the joint C&H Sugar Company - Crockett/Valona Sanitary District Wastewater Treatment Plant. This activated sludge is composed primarily of organic matter and contains approximately 18% solids with a pH of 6.9. In a letter dated February 25, 1993, the discharger amended the ROWD to reflect the change in the content of solids in this sludge to 20 to 25% due to optimization of de-watering procedures at the wastewater treatment plant. Average daily generation of this sludge is approximately 2.4 tons (dry weight). This sludge was discharged into this facility from 1978 to January 1993.

Related Orders

8. The Board adopted Waste Discharge Requirements Order No. 89-121, a National Pollutant Discharge Elimination System Permit No. CA0005240 on July 19, 1989 to regulate the discharge of industrial and sanitary wastewater into Carquinez Strait and an unnamed tidal stream tributary thereto.

Previous Investigations

9. In a letter dated September 14, 1992, Staff preliminary review of the ROWD for the facility indicated that the sludge disposal at the facility was not in compliance with the requirements of Chapter 15. Staff found the main problems with the current method of

disposal were high moisture content, mixing of refinery primary sludge with sewage sludge, and inadequate monitoring. Presently, the majority of the active portion of the facility is graded such that the drainage of runoff is channeled to the excavated drainage sump located in the central portion of the facility. Precipitation and runoff, combined with high moisture content of the sludge, creates a pond of free liquid inside the facility. Drawing 5-10 of the ROWD indicates that storm water runoff may be in contact with sludge. The facility is not equipped with a leachate collection and removal system, and does not meet the Chapter 15 construction standard for a Class II surface impoundment.

10. In a November 13, 1992 letter, the discharger proposed to cease disposal of sewage sludge at the facility and install appropriate background and downgradient wells. The discharger also intends to demonstrate that the refinery primary sludge is a non-decomposable inert waste and does not impact the groundwater. If this can be demonstrated the discharger would like the facility to be regulated as an unclassified unit.

Groundwater Contamination

11. To date five rounds of groundwater monitoring have been completed at the facility utilizing three monitoring wells; MW-1 installed to measure upgradient or background water quality; MW-2 installed to measure co-gradient water quality; and, MW-3 installed to measure downgradient water quality. Staff review of the ROWD concludes that these wells may not be optimally located to serve their intended purpose.

12. These monitoring wells have detected contaminants, such as the following, with concentrations as high as:

MW-1	Cadmium (mg/l)	0.2
	Chromium-total (mg/l)	0.683
	Lead (mg/l)	0.070
	Selenium (mg/l)	0.013
	Iron (mg/l)	17.8
	Magnesium (mg/l)	140
	Manganese (mg/l)	102
	Sulfate (mg/l)	3,700
MW-2	Cadmium (mg/l)	0.176
	Chromium-total (mg/l)	0.026
	Lead (mg/l)	0.031
	Iron (mg/l)	9.5
	Magnesium (mg/l)	25.3
	Manganese (mg/l)	1.17
	Sulfate (mg/l)	1,000
MW-3	Chromium-total (mg/l)	0.070
	Lead (mg/l)	0.040
	Iron (mg/l)	91.8
	Magnesium (mg/l)	108
	Manganese (mg/l)	5.9

Sulfate (mg/l)	655
Benzene (mg/l)	0.0015

13. The ROWD concluded that groundwater in the area of the facility is "scarce and of poor to unusable quality." However, the ROWD did not provide sufficient information to establish that groundwater is of a poor quality, and there is a domestic well within 1.5 miles of the site. The discharger proposed to install a well to establish the background groundwater quality. The proposed well was installed on February 2 and 3, 1993.

14. The facility's existing down-gradient well may not represent the down-gradient condition of the groundwater. In an August 12, 1992 letter, the discharger proposed to install appropriate down-gradient well. The proposed well was installed on February 1, 1993.

15. Requirements of this Order This Order requires monitoring, investigation and corrective action for the facility as follows:

    a. The discharger shall install two additional wells, one background and one down-gradient well, to monitor the water quality in the background and downgradient of the facility. These wells were installed on February 1 through 3, 1993.

    b. The discharger shall initiate monitoring every six weeks for one year and quarterly for following years. This Order requires initiation of a monitoring program at the facility beginning with the first quarter of 1993.

    c. The discharger shall monitor the stock pond on the northern portion of the facility, and when water is available, the stream at the bottom of the canyon.

    d. The discharger shall complete the characterization of refinery primary sludge disposed at this facility.

    e. The discharger shall provide the schedule for final closure of the inactive portion of the facility.

    f. The discharger shall analyze the monitoring data obtained previously and during 1993 from all wells. Based on this analysis, the discharger shall evaluate the impact of the facility on the groundwater and surface water.

    g. In case of determination of an impact on the groundwater or surface water, the discharger shall submit a corrective action plan to bring the facility in compliance with Chapter 15 and remediate the impacted media.

    h. The discharger shall propose a rainwater management plan to minimize the contact of waste and water.

Basin Plan

16. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986 and amended it on August 19, 1987, July 18, 1989, and December 11, 1991. This Order implements the water quality objectives for

Carquinez Strait as stated in the Basin Plan and its subsequent amendments.

17. The existing and potential beneficial uses of the ground water in the area are:

    a. Domestic Supply;
    b. Groundwater Recharge;
    c. Industrial Process and Service Supply; and,
    d. Agricultural Supply.

California Environmental Quality Act

18. The adoption of this Order is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act) pursuant to Section 15302, Title 14, California Code of Regulations.

Notifications and Meeting

19. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

20. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger or its agents, successors or assigns, in order to meet the provisions of Division 7 of the California Water Code, shall comply with the following:

A. PROHIBITIONS

1. The disposal of waste shall not cause pollution or nuisance as defined in Section 13050 of the California Water Code, and shall not degrade the quality of any usable water.

2. Wastes shall not be placed in or allowed to contact ponded water, regardless of the source of water.

3. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or of the United States.

4. The discharge of wastes in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

5. The discharge of wastes other than refinery primary sludge to the landfill is prohibited.

6. The discharge of liquid or semi-solid sludge to the landfill facility is prohibited.

7. Ground Water
   The discharge shall neither cause nor contribute to the contamination or pollution of

ground water via the release of waste constituents in either liquid or gaseous phase.

8. Surface Waters
The discharge shall neither cause nor contribute to any surface water contamination, pollution, or nuisance, including, but not limited to:

* Floating, suspended, or deposited macroscopic particulate matter or foam;
* Increases in bottom deposits or aquatic growth;
* An adverse change in temperature, turbidity, or apparent color beyond natural background levels;
* The creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin; and,
* The introduction or increase in concentration of toxic or other pollutants/contaminants resulting in unreasonable impairment of beneficial uses of waters of the State.

9. Unsaturated Zone
The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the facility if such waste constituents could migrate to waters of the State -- in either the liquid or the gaseous phase -- and cause a condition of contamination, pollution, or nuisance.

B. SPECIFICATIONS

1. During waste disposal or handling, no wastes shall be placed in a position where they can be carried into the waters of the State.

2. Surface water shall not be allowed to remain ponded on the facility.

3. The discharger shall maintain all devices or designed features, installed in accordance with this Order such that they continue to operate as intended without interruption.

4. The Regional Board shall be notified immediately of any slope failure occurring at the facility. Any failure which threatens the integrity of containment features or the facility shall be promptly corrected after approval of the method and schedule by the Executive Officer.

5. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations, and during the closure and post-closure maintenance period.

6. The Discharger shall implement the attached Monitoring and Reporting Program in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the facility, or any unreasonable impairment of beneficial caused by discharges of waste to the Facility.

C. PROVISIONS

1. The Discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order or as provided below.

2. The discharger shall submit a technical report acceptable to the Executive Officer documenting installation of additional background and down-gradient wells, and describing the native soil condition based on the soil sampling and analysis of soil samples obtained during installation of the upgradient/background well.
REPORT DUE: **No later than April 1, 1993**

3. The discharger shall submit a technical report acceptable to the Executive Officer documenting the analysis of the monitoring data obtained previously, and during 1993 from all wells. In this report, the discharger shall define the background quality of groundwater and propose water quality protection standards for the facility. This report shall also document the refinery primary sludge characterization. Based on this analysis, the discharger shall evaluate the impact of the facility on the groundwater and surface water. In case of determination of an impact on the groundwater or surface water, the discharger shall submit a corrective action plan to bring the facility in compliance with Chapter 15 - Class III requirements and remediate the impacted media.
REPORT DUE: **No later than March 1, 1994**

4. The discharger shall submit a technical report acceptable to the Executive Officer proposing a precipitation and runoff management plan to minimize the contact of sludge and storm water runoff and a schedule for closure of the inactive portion of the facility. In addition, if an impact on the groundwater or surface water is documented in the March 1, 1994 technical report, this report shall also include a workplan and schedule for closure of the sump inside the facility.
REPORT DUE: **No later than July 1, 1994**

5. Pursuant to Section 13304 of the Water Code, the discharger is hereby notified that the Regional Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order. Upon receipt of a billing statement for such costs, the discharger shall reimburse the Regional Board.

6. The discharger shall maintain a copy of this order so as to be available at all times to project operating personnel.

7. Technical reports, submitted by the discharger, in compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted to the Board on the schedule specified herein. These reports shall consist of a letter report that includes the following:

   a. A summary of work completed since submittal of the previous report and work projected to be completed by the time of the next report;

b. Identification of any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles;

c. In the event of non-compliance with any Prohibition, Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and proposes specific measures and a schedule to achieve compliance, this written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order; and,

d. In the first self-monitoring report, an evaluation of the current ground water monitoring system and a proposal for modifications as appropriate.

8. All submittal of hydrogeological plans, specifications, reports, and documents (except quarterly progress and self-monitoring reports) shall be signed by and stamped with the seal of a registered geologist, certified engineering geologist, or registered professional engineer.

9. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

10. The discharger shall maintain in good working order, and operate as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

11. The discharger shall permit the Board or its authorized representative, upon presentation of credentials:

a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.

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

c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order or by any other California State Agency.

d. Sampling of any discharge, surface water, or ground water governed by this Order.

12. The Board considers the property owner and site owner to have a continuing responsibility for correcting any problems within their reasonable control which arise in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes.

13. These requirements do not authorize the commission of any act causing injury to the property of another or of the public, do not convey any property rights, do not remove liability under federal, state or local laws, and do not authorize the discharge of waste

without the appropriate federal, state or local permits, authorizations, or determinations.

14. Copies of all reports pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:

    a. Contra Costa County Environmental Health Division
    b. Contra Costa County Community Development Department
    c. Integrated Waste Management Board

15. The discharger shall remove and relocate any wastes which are discharged after the date of adoption of this Order in violation of these requirements.

16. The discharger shall file with this Board a report of any change in ownership of the site.

17. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

18. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.

19. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.

20. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the discharger shall promptly notify the Executive Officer and the Board shall consider revision of this Order.

I, Steven R. Ritchie, Executive Officer, do hereby certify 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 March 17, 1993.

Steven R. Ritchie
Executive Officer

Attachments:
Figure 1: Location Map
Figure 2: Facility Layout
Discharge Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

CALIFORNIA AND HAWAIIAN (C&H) SUGAR COMPANY
C&H SUGAR LANDFILL
CONTRA COSTA COUNTY

WASTE DISCHARGE REQUIREMENTS

ORDER NO. 93-023

CONSISTS OF

PART A

AND

PART B

PART A

A. General

1. Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Discharge Monitoring Program is issued in accordance with requirements of Regional Board Order No. 93-023.

2. The principal purposes of a discharge monitoring program are the following:

   a. To document compliance with waste discharge requirements and prohibitions established by the Board;
   b. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge;
   c. To develop or assist in the development of standards of performance, toxicity, and water quality protection; and,
   d. To assist the discharger in complying with the requirements of Article 5, Chapter 15, Division 3, Title 23 of the California Code of Regulations.

B. Sampling And Analytical Methods

1. Sample collection, storage, and analyses shall be performed according to the most recent version of Standard Methods for the Analysis of Wastewater, and Test Methods for Evaluating Solid Waste USEPA Document SW-846, or other USEPA approved methods and in accordance with an approved sampling and analysis plan.

2. Water, soil, and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory or his duly authorized representative, whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

3. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. Definition Of Terms

1. A grab sample is a discrete sample collected at any time.

2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In addition, the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, and intermittent stock pond are also considered receiving waters.

3. Standard observations refer to:

   a. Receiving Waters

1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
2) Discoloration and turbidity: description of color, source, and size of affected area.
3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.

b. Perimeter of the waste management unit.

1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit.

1) Evidence of ponded water at any point on the waste management facility.
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.
4) Standard Analysis (SA) and measurements are listed on Table A (attached)

4. Duly authorized representative is a duly authorized representative may thus be either a named individual or any individual occupying a named position such as the following:

a. Authorization is made in writing by a principal executive officer; or,
b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company.

D. <u>Schedule Of Sampling, Analysis, And Observations</u>

1. The discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B, and the requirements in Article 5 of Chapter 15.

2. A statistical analysis shall be performed and reported annually as described in the

current revision of Article 5 of Chapter 15.

E. Records To Be Maintained

1. Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

   a. Identity of sample and sample station number;
   b. Date and time of sampling;
   c. Date and time that analyses are started and completed, and name of the personnel performing the analyses;
   d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
   e. Calculation of results;
   f. Results of analyses, and detection limits for each analyses; and,
   g. Chain of custody forms for each sample.

F. Reports To Be Filed With The Board

1. Written monitoring reports shall be filed every six weeks for the first year and quarterly for the following years. These reports shall be filed no later than 15 days after the end of a reporting period. In addition an annual report shall be filed as indicated. The reports shall include the following:

   a. Letter of Transmittal - A letter transmitting the essential points in each monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations, such as, operation and/or facilities modifications. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct. The letter shall contain the following certification:

      "I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and

evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

b. Each monitoring report shall include a compliance evaluation summary sheet. The summary shall contain:

   i. A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations;
   ii. The method and time of water level measurement, the type of pump used for purging, pump placement in the well, method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water; and,
   iii. Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, any other observations; and the chain of custody record.

c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.

d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory or his duly authorized representative, whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board. The following information shall be provided:

   i. The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approval by the Executive Officer prior to use; and,

ii. In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

e. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.

f. By March 1 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

i. Tabular and graphical summaries of the monitoring data obtained during the previous year. This report should be accompanied by a $5^1/_4$" computer data disk, MS-DOS ASCII format, tabulating the year's data;

ii. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements; and,

iii. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.

G. <u>Contingency Reporting</u>

1. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered.

2. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:

a. A map showing the location(s) of discharge;
b. Approximate flow rate;
c. Nature of effects (i.e. all pertinent observations and analyses); and,
d. Corrective measures underway or proposed.

Part B

A. Description Of Observation Stations And Schedule Of Observations

1. The observation stations for each monitoring media are listed below:

   a. Groundwater monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5; and,

   b. Stock pond and downgradient stream, when present.

2. The schedule of well observations and grab sampling shall be conducted within the months of: February, April, May, July, August, October, November, and December for the first year; and, January, April, July, and October for the following years.

3. A description of removal of liquid from the sump to include, at a minimum, date of removal, volume of liquid per removal event, total volume of liquid removed during this Order, and probable source of liquid removed shall be reported every six weeks for the first year and quarterly for the following years.

4. A map showing the potentiometric surface of the underlying groundwater shall be submitted at least once a quarter for the first year and twice a year for the following years.

B. Observations and Test Procedures

1. The groundwater well observations shall consist of the following:

   a. Water elevation reported to the nearest 0.1 inch for both depth to water from the ground surface and the elevation of the groundwater level as well as the elevation of the well screen;

   b. Groundwater temperature measured at the time of sampling and reported in degrees Fahrenheit;

   c. Groundwater conductivity measured at the time of sampling as per Standard Methods 205 using potentiometric methodology;

   d. Groundwater pH measured at the time of sampling as per Standard Methods 423 using potentiometric methodology;

   e. Groundwater turbidity measured at the time of sampling; and,

   f. In the event of a leachate generation, additional tests will be conducted on the leachate and monitoring wells for the constituents of concern.

2. The test procedures for the water samples as described in the attached Table A.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing discharge monitoring program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16;

2. Is effective on the date shown below; and,

3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the discharger.

Steven R. Ritchie
Executive Officer

March 17, 1993
Date Ordered

Table A - Discharge Monitoring Program - List of Analytical Parameters

Parameters	EPA Method
Electrical Conductivity	Field
Temperature	Field
Turbidity	Field
Water level	Field
pH	Field
Arsenic	6010 or 7060
Barium	6010 or 7080
Cadmium	6010 or 7130
Calcium	6010 or 7140
Total Chromium	6010 or 7190
Copper	6010 or 7210
Iron	6010 or 7380
Lead	6010 or 7420 or 7421
Magnesium	6010 or 7450
Manganese	6010 or 7560
Mercury	6010 or 7470/7471
Nickel	6010 or 7520
Selenium	7740 or 7740
Silver	6010 or 7760
Potassium	6010 or 7610
Vanadium	6010 or 7910
Zinc	6010 or 7950
Total dissolved solids	160.1
Chloride	9252 or 325.3
Sodium	6010
Cyanide	9010

Table A - Discharge Monitoring Program - List of Analytical Parameters (Continued)

Parameters	EPA Method
Sulfate	9038 or 375.4
Alkalinity (CaCo3)	310.1/310.2
Hardness	130.2 or 6010 or SM17 2340B
Chemical Oxygen Demand	410.2 or 410.4
Dissolved Oxygen	Field
Total Organic Carbon	415.1 or 415.2
Total Kjeldahl Nitrogen	351.4
Ammonia Nitrogen	350.3
Nitrate Nitrogen	9200 or 353.3
Total phosphate	310.1 or 300 or 365.1/365.2 or 365.3
Total Phenols	9065 or 420.1
Volatile Organic Carbon	8240