

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 94-166

REVISED WASTE DISCHARGE REQUIREMENTS AND RESCISSION OF WASTE DISCHARGE  
REQUIREMENTS ORDER NO. 87-122 AND ORDER NO. 92-112 FOR:

PACIFIC GAS AND ELECTRIC COMPANY

PITTSBURG POWER PLANT

PITTSBURG, CONTRA COSTA COUNTY

CLASS I AND CLASS II SURFACE IMPOUNDMENTS

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

**Facility and Site Description**

1. Pacific Gas and Electric Company (hereinafter called Discharger) presently owns and operates the Pittsburg Power Plant (hereinafter called the Facility). The plant has seven natural gas or oil fired generating units with a combined capacity of 2002 megawatts. Wastewaters from operation and maintenance of the Facility are stored and treated at the Facility in four Class I hazardous waste and two Class II designated waste surface impoundments.
2. The Facility is located at 696 West Tenth Street, in the City of Pittsburg, adjacent to the south shore of Suisun Bay. The Pittsburg Marina is located on the eastern side of the Facility, and undeveloped land is located on the southern and western borders of the Facility.
3. All surface impoundments are subject to regulations under Title 23, Chapter 15. Additionally, the four Class I surface impoundments are also subject to the Toxic Pits Cleanup Act (TPCA) provisions found in the Health and Safety Code, and to federal regulations under RCRA.

**Class I Surface Impoundments**

4. The four regulated Class I hazardous surface impoundments are as follows:
  - a. Boiler Chemical Cleaning Solution Pond (BCCSP)
  - b. Boiler Chemical Cleaning Rinse Pond (BCCRP)
  - c. Air Preheater Wash Pond (APWP)
  - d. Demineralizer Neutralization Pond (DNP)
5. The Discharger retrofitted the four Class I surface impoundments in 1988 by installing: a concrete liner, a triple 80 mil High Density Polyethylene liner system, three leachate collection systems, and a sump/pipe system for leachate collection and removal. Regional Board staff has reviewed and approved of the construction of the Class I surface impoundments.
6. The Class I surface impoundments (BCCSP, BCCRP, and APWP) are used for the temporary storage and noncontinuous batch treatment of restricted hazardous waste (as defined in the Toxic Pits Cleanup Act) resulting from the cleaning operations of the seven boilers. The Class I DNP is used for the temporary storage and continuous treatment of wastewater from the regeneration of demineralizers. The Discharger has stated that no extremely hazardous wastes have been or will be discharged into the surface impoundments. The uses of the Class I ponds are as follows:

a. Boiler Chemical Cleaning Solution Pond (BCCSP)

The seven boilers are cleaned in either one or two stages. The BCCSP receives wastewater from the initial draining of either stage.

During the boiler cleaning, the following constituents are generally added to the cleaning solutions: sodium bromate, ammonium bicarbonate, ammonium hydroxide, hydrochloric acid, corrosion inhibitor, ammonium bifluoride, thiourea, hydroxyacetic acid, formic acid, EDTA, and hydrogen peroxide. Sodium hydroxide can be added for pH control. The wastes are considered corrosive.

The liquid supernatant is filtered, then discharged along with plant once-through cooling water to Suisun Bay pursuant to NPDES Permit No. CA0004880. The sludge is transported to an offsite Class I facility by a licensed hazardous waste transporter.

The major constituents generally discharged to the BCCSP are: ammonia, bicarbonate, bromide, carbonate, chloride, chromium, copper, fluoride, iron, nickel, sodium, thiourea, EDTA, and zinc.

b. Boiler Chemical Cleaning Rinse Pond (BCCRP)

Wastewater from the rinses which follows the initial chemical draining of the boilers is discharged to the BCCRP.

During the rinse stage; hydrazine, ammonium hydroxide, and sodium hydroxide are generally added to the rinse water. The wastes are considered corrosive.

The liquid supernatant is filtered, then discharged along with plant once-through cooling water to Suisun Bay pursuant to NPDES Permit No. CA0004880. The sludge is transported to an offsite Class I facility by a licensed hazardous waste transporter.

The major constituents generally discharged to the BCCRP are: ammonia, bicarbonate, bromide, carbonate, chloride, chromium, copper, fluoride, iron, nickel, sodium, thiourea, EDTA and zinc.

c. Air Preheater Wash Pond (APWP)

Water taken from the Contra Costa Water District and/or Suisun Bay is used for the air preheater, fireside, and stack washes. Sodium hydroxide is the only chemical added to the water which makes the water slightly alkaline. The wastes are considered corrosive.

The liquid supernatant is discharged to Suisun Bay pursuant to NPDES Permit No. CA0004880, and the solids are disposed of at a Class I facility.

The major constituents of the wastewater discharged to the APWP are: chromium, copper, iron, nickel, sodium, sulfate, vanadium, and zinc.

d. Demineralizer Neutralization Pond (DNP)

Boiler feedwater demineralizers are regenerated periodically with sulfuric acid and sodium hydroxide. The regenerant wastes from the cation/anion demineralizer systems are neutralized as they enter the pond. The wastes are considered corrosive.

The effluent is then discharged along with plant once-through cooling water to Suisun Bay pursuant to NPDES Permit No. CA0004880.

The wastewater contains the following constituents: bicarbonate, calcium, chloride, fluoride, magnesium, potassium, sodium, and sulfate ions.

7. The Discharger has submitted an approved June 1994 Groundwater Monitoring Plan for the Class I surface impoundments. In accordance with Chapter 15, Article 5, the discharger will use X-Bar control chart statistical methods to evaluate groundwater quality, and determine if a release to groundwater has occurred from any Class I surface impoundment.  
Water Quality Protection Standards concentration limits will be based on control chart results.

### **Class II Surface Impoundments**

8. The two regulated Class II surface impoundments are as follows:
  - a. Oily Water Collection Pond (OWCP)
  - b. Clarifier Sludge Pond (CSP)
9. The Discharger retrofitted the two Class II impoundments in 1988 by installing: a concrete base, a secondary 60 mil High Density Polyethylene( HDPE) liner system, and a primary 80 mil HDPE liner. Both Class II impoundments have a leachate collection and detection system between the two liners. The CSP has an additional leachate collection and detection system between the outermost synthetic liner and the concrete base. Regional Board staff have reviewed and approved of the construction of the Class II surface impoundments. In a Regional Water Quality Control Board letter dated June 9, 1989 an exemption was granted to the Chapter 15 requirement which requires a five foot separation between the waste and the highest anticipated groundwater elevation.
10. The Class II Oily Water Effluent Pond (OWEP) was removed from service in 1987 and has not received wastes since that period. The Discharger has submitted a closure plan for the OWEP pond dated November 1992. The Discharger has received staff approval of the closure plan, and has implemented the plan.

The Discharger has submitted and has received Regional Board staff approval of the Discharger's October 1994 OWEP clean closure certification document. The former Oily Water Effluent Pond clean closure has been found to be in compliance with the requirements stated in Sections 2580 and 2582, Article 8, Chapter 15, Title 23, of the California Code of Regulations. Based upon staff's inspections of closure activities at the subject site, compliance with the approved Closure Plan, and staff's review of the closure certification report the Oily Water Effluent Pond is no longer regulated under Title 23, Chapter 15, California Code of Regulations.

11. The Class II surface impoundments are used for the temporary storage of nonhazardous wastewater. The uses of the Class II ponds are as follows:

- a. Oily Water Collection Pond

The OWCP receives wastewater from building drains, fuel oil tank containment areas, and stormwater runoff from the Facility. The wastewater then flows into an API separator and dissolved air flotation tank for treatment.

The Discharger has reported that no hazardous wastes are entering the OWCP. Analysis of the sediment is conducted annually and, if hazardous levels of any constituent are found, the sediment is handled as hazardous wastes. The Discharger has stated that the sludge is nonhazardous.

b. Clarifier Sludge Pond

The CSP receives wastewater from the water treatment clarifier system that is used to treat water from two sources: Suisun Bay and Contra Costa canal water. The impoundment also receives floor drain wastes from the reverse osmosis building, and product water from an overflow surge tank.

The supernatant from the CSP is discharged to Suisun Bay pursuant to NPDES permit No. CA0004880, and the accumulated sludge is removed annually for liner inspection purposes. The Discharger has characterized the influent to the CSP and has stated that no hazardous wastes are entering the CSP.

The Discharger has indicated that the CSP may be taken out of service (no longer receiving or storing liquid waste) and elevated storage tanks will be installed to replace the CSP. The Discharger has not yet proposed to the Regional Board the details for the possible project. However, until the tankage is installed the discharger will continue to monitor the Class II CSP surface impoundment for unauthorized discharges, operate and maintain the CSP, and assure that all applicable requirements identified in this Order and the attached Monitoring and Reporting Program are adhered to.

**Related Orders**

12. On September 16, 1987 the Board adopted Waste Discharge Requirements Order No. 87-122. The Order established Waste Discharge Requirements for the Class I and Class II surface impoundments; and, included the following:
- a) Required the Discharger to comply with the applicable requirements of Chapter 15 for both the Class I and Class II impoundments.
  - b) Required the Discharger to comply with the Prohibitions. In general, the Prohibitions prohibit discharges which will actually or may potentially impact State Waters.
  - c) Required the Discharger to comply with several sets of Specifications.
    - i. The General Specifications: These specifications require the Discharger to meet design and construction standards for the Class I and Class II impoundments, and to develop and implement an operation, maintenance, and inspection plan for the surface impoundments.
    - ii. Specifications for the Class I and Class II Surface Impoundments: These specifications require the Discharger to retrofit the surface impoundments with liners and leachate collection and removal systems and meet specific design and operation requirements.
    - iii. Specifications for Hydrogeologic Investigation: These specifications require the Discharger to complete a study of the tidal and seasonal variations in groundwater gradients.
    - iv. Groundwater Monitoring Specifications: These specifications require the Discharger to monitor the unsaturated zone, construct and drill groundwater monitoring wells according to specific criteria, design and construct a groundwater monitoring network which is capable of detecting early leakage from the impoundments, and follow specific groundwater data evaluation, sampling, and reporting requirements.
  - d) The Discharger is required to submit a proposal for monitoring the waste streams discharged into the BCCSP and the BCCRP, and is further required to demonstrate that the OWEP and OWCP do not contain hazardous wastes.
  - e) The Discharger is required to submit a proposal related to the monitoring of the vadose zone beneath the Facility.

- f) The Discharger is required to submit a Groundwater Monitoring Program which complies with the requirements of Article 5 of Subchapter 15.
  - g) The Discharger is required to implement the Self Monitoring Program.
  - h) The Discharger is required to apply for renewal of exemptions to Section 25208.4 (a) (discharge of liquid hazardous waste) of the Toxic Pits Cleanup Act for the BCCSP, BCCRP, APWP, and DNP, and to Section 25208.4 (c) (discharge of restricted hazardous waste) for the BCCSP and BCCRP every five years.
  - i) The Discharger is required to operate the Class I and Class II surface impoundments to ensure the wastes are separated by a minimum of five feet from the highest anticipated groundwater elevation.
13. On September 16, 1992 the Board adopted Amended Waste Discharge Requirements Order No. 92-112. The Order amended the following specific findings of Waste Discharge Requirements Order No. 87-122:
- a) Finding 48: The existing four Class I surface impoundments listed in finding 2, are granted an exemption of no more than 5 years from the date of this Amendment to Order 87-122 for discharging liquid hazardous waste pursuant to Section 25208.4(a) of the Toxic Pits Cleanup Act.
  - b) Finding 49: The existing Class I surface impoundments listed in finding 2, except the Demineralizer Neutralization Pond, are granted an exemption of no more than five years from the date of this Amendment to Order 87-122 for discharging restricted hazardous waste pursuant to Section 25208.4(c) of the Toxic Pits Cleanup Act.

### Hydrogeology

14. The Discharger submitted a May, 1993 Financial Assurance and Monitoring Program Submittal for Article 5 of Chapter 15, and a May, 1993 Groundwater Monitoring Plan (last revised June 1994). These reports were submitted for the Class I surface impoundments; however, information on the hydrogeology beneath the Class II impoundments is included.

#### Stratigraphy:

Several stratigraphic units have been identified beneath the Facility. In ascending order are the following layers:

- a. a deep clay layer at least 35 feet thick underlies the entire site.
- b. a continuous silty sand to sandy gravel layer approximately 23-38 feet thick.
- c. a discontinuous clay to clayey sand layer approximately ten feet thick.
- d. interbedded organic and inorganic clays, averaging 12 to 15 feet thick. In the area near the Class II impoundments, a peat filled channel is present with a maximum thickness encountered at the site 25 feet. The peat filled channel exists only in a limited area in the vicinity of the Class I surface impoundments.
- e. Silty sand, sandy gravel, and low plasticity clay consisting of artificial fill up to about seven feet thick.

#### Water Bearing Zones:

Three aquifers have been identified below the Facility. First, the upper aquifer is a semiconfined aquifer which underlies both the Class I and Class II surface impoundments. Second, a perched groundwater zone of a limited extent exist along the northwest area of the Facility. The perched aquifer exists beneath the Class II surface impoundments and to a limited extent beneath the Class I surface impoundments. Third, a deep confined aquifer lies below the surface impoundments. The Discharger believes that the deep aquifer will not be influenced by a release from the surface impoundments; and

also considers it unlikely that the water quality of the upper aquifer or perched groundwater zone will be influenced by the deep aquifer.

Upper Aquifer Hydrology:

The upper aquifer beneath the Class I and Class II surface impoundments is tidally influenced by Suisun Bay. The Discharger has recorded groundwater direction reversals during high and low tides. However, the time averaged groundwater flow is directed to the northeast.

The Discharger has indicated that wells screened within the upper aquifer are capable of yielding at least 15 gallons per minute. Pump tests performed on the upper aquifer indicate that hydraulic conductivities range from 850 to 1,300 gpd/ft<sup>2</sup>, transmissivity from 17,000 to 27,260 gpd/ft, and storativities have been calculated to be about 0.0033. The Discharger has estimated the horizontal hydraulic gradient to be 0.0006, and the groundwater flow velocity to be 0.27 feet per day.

Perched Water Zone Hydrology:

The Discharger has indicated that wells screened within the perched water zone yield less than 100 gallons per day. Pump tests performed on the perched aquifer indicate that hydraulic conductivities are less than 10 gpd/ft<sup>2</sup>, and transmissivity of 125 gpd/ft was calculated. The Discharger has estimated the horizontal hydraulic gradient to be 0.01, and the groundwater flow velocity to be 0.16 feet per day. Further, the pump tests have indicated that there is no communication between the perched water zone and the upper aquifer; and, the perched water zone shows little or no response to Suisun Bay tidal fluctuations. The Discharger has indicated that the perched water zone is most likely recharged by surface water infiltration.

The Discharger has proposed to monitor the groundwater in the upper aquifer for detection of releases from the Class I surface impoundments, and will monitor groundwater in the perched water zone for detection of releases from the Class II surface impoundments.

15. Earthquakes posing a threat to the Facility and the surface impoundments could occur along the San Andreas, Hayward, Calaveras-Concord, Clayton-Greenville and the Antioch faults. The Antioch fault is the closest active fault to the Facility; located approximately 2.5 miles southeast of the Facility. The Discharger has estimated peak ground acceleration at the Facility of 0.30g for the maximum credible earthquake, and 0.25g was estimated for the maximum probable earthquake.
16. The Discharger has submitted a request dated May, 1993 for exemption to unsaturated zone monitoring pursuant to Chapter 15, Article 5, Section 2550.7. (d). The Discharger has cited that 1.) there is no unsaturated zone monitoring device or method designated to operate under the subsurface conditions at the new surface impoundment, and 2.) the installation of the unsaturated zone monitoring devices would require unreasonable dismantling or relocation of permanent structures. In a letter dated August 6, 1993 Regional Board staff granted PG&E an exemption from the requirements of unsaturated zone monitoring.

**The Toxic Pits Cleanup Act**

17. The Toxic Pits Cleanup Act of 1984 is contained in Section 25122.7 and 25208 in the California Health and Safety Code (HSC).
18. Section 25208.4 (a) of the HSC requires that on or after June 30, 1988, no person shall discharge liquid hazardous wastes or hazardous wastes containing free liquids into a surface impoundment, if the surface impoundment, or the land immediately beneath it, contains hazardous wastes and is within one-half mile upgradient from a potential source of drinking water. Note that pursuant to Section 25208.2(f) "discharge" includes the storage of liquid hazardous wastes or hazardous wastes containing free liquids.

Section 25208.4(b) allows the Discharger to apply to the Regional Board for an exemption from subsection 25208(a). Any exemption shall not be effective for more than five years. To apply for an exemption the Discharger must:

- a. Demonstrate that extremely hazardous wastes are not currently being discharged into the surface impoundment, and either one of the following applies,
    - i. The records of the Discharger indicate that no extremely hazardous wastes have been discharged into the surface impoundment.
    - ii. Extremely hazardous wastes are not present in the surface impoundment, vadose zone, or groundwater.
  - b. Demonstrate that the surface impoundment is in compliance with construction standards and the Discharger has submitted a hydrogeologic assessment report.
19. Section 25208.4(c) of the Toxic Pits Cleanup Act prohibits the discharge of any restricted hazardous waste into a surface impoundment, unless the person is granted an exemption pursuant to Section 25208.13 or 25208.16. Any exemption shall not be effective for more than five years.
20. Contra Costa Water District operates an intake structure which draws drinking water from Suisun Bay approximately one-half mile downstream from the Facility.

#### **Toxic Pits Cleanup Act Exemption Compliance Findings**

21. The Discharger requested a renewal of exemptions from Sections 25208.4(a) and 25208.4(c) of the Toxic Pits Cleanup Act (TPCA) in letters to the Regional Board dated February 15, 1991 and July 30, 1992. A renewal of exemptions fee was not required.
22. Order No. 92-122 grants the Discharger a five year exemption from TPCA Sections 25208.4(a) (for all Class I ponds), and 25208.4(c) (for all Class I ponds except the Demineralizer Neutralization Pond).
23. Based on a review of the existing data and the Discharger's operational procedures, in accordance with Sections 25208.4(b)(2) and 25208.16 of the Toxic Pits Cleanup Act, which establish requirements the Discharger must meet to be granted the exemptions the Regional Board finds:
- a. No hazardous waste constituents have migrated from the surface impoundments into the vadose zone, or waters of the state in concentrations which pollute the vadose zone, or pollute, or threaten to pollute, the waters of the state.
  - b. Continuing the operation of the surface impoundments does not pose a significant potential of hazardous waste constituents migrating from the surface impoundments into the vadose zone or waters of the state.
  - c. No extremely hazardous wastes have been or are being discharged into the surface impoundments.
  - d. The surface impoundments are used for temporary storage and noncontinuous batch treatment of restricted hazardous waste.
  - e. The Discharger has triple lined all Class I ponds with 80 mil High Density Polyethylene, installed a Geotextile/Geonet material between the liners to serve as a leachate collection system, and has installed a sump/pipe system for leachate collection and removal.

- f. All hazardous wastes are removed after each batch treatment within 30 days of discharge, if a discharge into the surface impoundment contains restricted hazardous waste. The surface impoundments are visually inspected prior to each use and tested for integrity at least annually.
- g. The impoundments are in compliance with the construction criteria and groundwater monitoring requirements of Section 25208.5, and a Hydrogeological Assessment Report has been filed with this Board as required by the Toxic Pits Cleanup Act, Section 25208.8.

### **Basin Plan**

- 24. 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 the Basin Plan.

### **Beneficial Uses**

- 25. The existing and potential beneficial uses of Suisun Bay and contiguous water bodies are:

- a. Water contact recreation;
- b. Non-contact water recreation;
- c. Wildlife Habitat;
- d. Preservation of Rare and Endangered Species;
- e. Estuarine Habitat;
- f. Fish migration and spawning;
- g. Industrial service supply;
- h. Navigation;
- i. Commercial and Sport Fishing;
- j. Shellfish Harvesting; and,
- k. Municipal and Domestic Supply.

- 26. The existing and potential beneficial uses of the groundwater in the area are:

- a. Municipal and Domestic Supply;
- b. Industrial Process and Service Supply; and,
- c. Agricultural Supply.

### **California Environmental Quality Act**

- 27. This action is an Order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the California Environmental Quality Act pursuant to Section 15308, Title 14, California Code of Regulations.

### **Notice and Meeting**

- 28. The Board has notified the Discharger and interested agencies and persons of its intent under California Water Code Section 13263 to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
- 29. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Pacific Gas and Electric Company, and any other persons that currently or in the future own this land or operate this facility, shall meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and shall also comply with the following:

**A. Prohibitions**

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.
2. The discharge of any waste from the surface impoundments to groundwaters of the State or to the unsaturated zone surrounding the surface impoundments is prohibited.
3. The storage, handling, treatment or disposal of sediments, groundwater, or any waste originating from the surface impoundments shall not create a nuisance as defined in Sections 13050(l) and 13050(m) of the California Water Code.
4. There shall be no discharges to a surface impoundment, and any residual liquids and sludges shall be removed expeditiously, if it is determined the surface impoundment is leaking or there is a surface impoundment containment system failure which causes a threat to water quality. The determination of impoundment leakage is defined in the Self Monitoring and Reporting Program; Attachment 1 and 2.
5. The discharge or storage of liquid extremely hazardous waste or extremely hazardous waste containing free liquids in the surface impoundments is prohibited.
6. The discharge or storage of liquid hazardous waste or hazardous waste containing free liquids in the Class II surface impoundments is prohibited.
7. Activities associated with subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.
8. The discharge of pollutants onto land, into groundwaters or surface waters, except as allowed by an NPDES permit, is prohibited.
9. The Discharger shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
  - a. Surface Waters
    1. Floating, suspended, or deposited macroscopic particulate matter or foam.
    2. Bottom deposits or aquatic growth.
    3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
    4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
    5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.
  - b. Groundwater
    1. The groundwater shall not be degraded as a result of the waste disposal operation.

**B. General Specifications**

1. The waste management units shall prevent migration of wastes to adjacent geologic materials, groundwater, or surface water, throughout the operation, closure, and post-closure periods.
2. All waste management units shall have foundations capable of supporting the containment structures and capable of withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift.
3. The materials used for containment structures shall have appropriate chemical and physical properties to ensure containment of wastes at all times. Liner permeabilities shall be determined relative to the liquids contained in the respective ponds and shall be determined by appropriate tests methods in accordance with accepted civil engineering practice. Note: The Discharger received design and construction approval for the surface impoundments.
4. The waste management units shall be designed, constructed and operated to withstand ground accelerations associated with the maximum credible earthquake without damage to the foundation, the containment structures, and other structures which control leachate, surface drainage, or erosion.
5. The containment structures of the surface impoundments shall be maintained to preclude failure as a result of potential rapid geologic changes.
6. The impoundments will be operated such that scouring at points of discharge and by wave action at the water line will not degrade the pond lining.
7. The pipeline discharge to surface impoundments shall be either equipped with devices, or fail-safe operating procedures, to prevent overfilling.
8. All engineering and geological submittals shall be prepared under the direct supervision of and certified by a registered civil engineer or a certified engineering geologist.
9. The Discharger shall install, maintain in good working order, and operate efficiently any Facility, alarm, or control system necessary to assure compliance with these Waste Discharge Requirements
10. The Discharger shall operate the surface impoundments according to a detailed operating and contingency plan, which will include at a minimum, procedures for routine inspection of the surface impoundments, discharge into a pond, discharge out of a pond, leachate detection system monitoring, contingency measures if leachate is detected or problems with the containment structures are found, and notification of agencies.
11. The Discharger is required to apply for renewal of exemptions to Section 25208.4 (a) of the Toxic Pits Cleanup Act for the BCCSP, BCCRP, APWP, and DNP, and to Section 25208.4 (c) for the BCCSP and BCCRP every five years. The Discharger was granted exemptions to the requirements of above sections on September 16, 1992. Therefore, in order for the Discharger to continue to operate the Class I surface impoundments, the next exemption renewal must be granted by September 16, 1997.
12. The discharger shall comply with all applicable requirements as stated in Title 23, Chapter 15.

**C. Specifications for Class I Surface Impoundments**

1. The Class I surface impoundments shall be designed and constructed to prevent inundation, slope failure, and washout under conditions of a probable maximum precipitation event.
2. The Class I surface impoundments shall be designed, constructed and maintained to prevent inundation or washout by floods with a 100 year return period. In any case, a minimum of two feet of freeboard shall be maintained in each pond at all times.
3. The DNP shall be operated to accommodate seasonal precipitation and probable maximum precipitation conditions to prevent overtopping.
4. If the Board determines that any of the Class I surface impoundments are polluting or threatening to pollute State waters, the Board may revoke the granted exemptions to Section 25208.4(a) and 25208.4(c) for the Class I surface impoundments.
5. The Discharger shall remove all hazardous waste from the Class I surface impoundment within 30 days if a discharge into the surface impoundment contains restricted hazardous waste.

**D. Specifications for Class II Surface Impoundments**

1. The Class II surface impoundments shall be designed and constructed to prevent inundation, slope failure, and washout under conditions of a 24 hour storm with a 1000 year return frequency.
2. The Class II surface impoundments shall be designed, constructed and maintained to prevent inundation or washout by floods with a 100 year return period. In any case, a minimum of two feet of freeboard shall be maintained in each pond at all times.
3. The sludge from the OWCP and CSP shall be removed from the impoundments annually in order to prevent the metal concentrations from accumulating to hazardous levels, unless the Discharger demonstrates to the satisfaction of the Executive Officer that hazardous levels of metals have not accumulated.
4. If the Board determines that any of the Class II surface impoundments are polluting or threatening to pollute State waters, the Board may require the Discharger to cease discharging into the Class II surface impoundments.

**E. General Surface Impoundment Monitoring Specifications**

1. All monitoring wells shall be constructed in a manner that maintains the integrity of the drill hole, prevents cross-contamination of saturated zones, and produces representative groundwater samples from discrete zones within the aquifer unit each well is intended to monitor.
2. All borings for monitoring wells shall be continuously cored, and the cored shall be archived. The drill holes shall be logged during drilling under the direct supervision of a registered geologist whose signature appears on the corresponding well log. Logs of monitoring wells shall be filed with the Department of Water Resources. All information used to construct the wells shall be submitted to the Board upon completion of the wells.

3. All soil and groundwater 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/control records for the Board staff to review.
4. **WATER QUALITY PROTECTION STANDARD** - Pursuant to Article 5, §2550.2 the Constituents of Concern and respective Concentration Limits are specified in this Order to be a component of the Monitoring and Reporting Program (M&RP), Appendix I. The Point of Compliance is a vertical surface located at the hydraulically downgradient limit of the surface impoundment. The monitoring points for the Point of Compliance of each surface impoundment shall be specified in the M&RP.
5. If it is determined by the Executive Officer, based on groundwater monitoring information, that water quality impairment outside of the surface impoundment is not improving, or continues to degrade, the discharger may be required to submit additional site specific groundwater corrective action proposals.
6. Pursuant to §2550.8(e) of Article 5, the Discharger has proposed a list of monitoring parameters, frequency of sampling and frequency of reporting for the Facility's surface impoundments. As provided by Article 5, the proposed list shall include those physical parameters, hazardous constituents, waste constituents, and reaction products that provide a reliable indication of a release from the surface impoundments to adjacent mediums. The monitoring parameters are listed by surface impoundment and included in the attached M&RP as Appendix 1, Table 1 and Table 2. The Discharger shall monitor for all Constituents of Concern and for each Monitoring Parameter at intervals determined in the M&RP.
7. The Discharger shall implement any Monitoring and Reporting Program issued by the Executive Officer. The purpose of the M&RP is to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the surface impoundments, or any unreasonable impairment of beneficial uses associated with the Facility's past and present activities.
8. The Discharger shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of contamination, pollution, or nuisance to occur, as indicated by the most appropriate statistical [or non-statistical] data analysis method and retest method listed in Part III of the attached Monitoring and Reporting Program.
9. Water Quality Protection Standard (Standard) for Detection Monitoring. The five parts of the Water Quality Protection Standard of §2550.2 of Article 5 are as follows:
  - a. Constituents of Concern [§2550.3 of Article 5], are a list of contaminants which are most likely to be present in the groundwater at the Facility. The Constituents of Concern are specified in Appendix I, Table 1 and Table 2, of the M&RP.
  - b. Concentration Limits [§2550.4 of Article 5]. For each Monitoring Point assigned to a Detection Monitoring Program [Table 1 and Table 2], the Concentration Limit for each Constituent of Concern shall be listed in the requirements. Concentration limits for the surface impoundments will be based on Regional Board staffs' review of X-Bar control chart data during the active life and closure of the surface impoundments.
  - c. Point of Compliance [§2550.5 of Article 5]. The Point of Compliance is shown on Figure M&RP-1, and extends down through the Zone of Saturation [§2601 of Article 10] for each surface impoundment.

- d. Monitoring Points and Background Monitoring Points for Detection Monitoring [§2550.5 of Article 5] shall be those listed in Appendix I, Table 1 and Table 2 of the attached M&RP.
  - e. Compliance Period [§2550.6]. The duration of the Compliance Period for the surface impoundments is equal to the active life of the surface impoundments, including the closure period. Each time a release from an impoundment is statistically confirmed, the Unit begins a Compliance Period on the date the Regional Board directs the Discharger to begin an Evaluation Monitoring Program. If the Discharger's Corrective Action Program (CAP) has not achieved compliance with the Standard by the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the Unit has been in continuous compliance for at least three consecutive years [§2550.6(c) of Article 5].
10. Additional Monitoring Points or Background Monitoring Points. If the Executive Officer determines the existence of an imminent threat to surface or subsurface waters of the State, the Discharger may be required to install additional ground water, soil pore liquid, soil pore gas, or leachate monitoring devices.
11. At any time, the Discharger may file a written request [including appropriate supporting documents] with the Regional Board Executive Officer, proposing appropriate modifications to the Monitoring and Reporting Program. The request may address changes (a) to any statistical method, non-statistical method, or retest method used with a given constituent or parameter, (b) to the manner of determining the background value for a constituent or parameter, (c) to the method for displaying annual data plots, (d) to the laboratory analytical method used to test for a given constituent or parameter, (e) to the media being monitored [e.g., the addition of soil pore gas to the media being monitored], (f) to the number or placement of Monitoring Points or Background Monitoring Points for a given monitored medium, or (g) to any aspect of monitoring or QA/QC. After receiving and analyzing such a report, the Executive Officer either shall reject the proposal for reasons listed, or shall incorporate it; along with any necessary changes; into the attached Monitoring and Reporting Program.

**F. Provisions**

- 1. The four Class I surface impoundments listed in finding 4, are granted an exemption of no more than 5 years, commencing September 16, 1992, for discharging liquid hazardous waste pursuant to Section 25208.4(a) of the Toxic Pits Cleanup Act. The next exemption renewal must be granted by:  
**September 16, 1997.**
- 2. The Class I surface impoundments listed in finding 4, except the Demineralized Neutralization Pond, are granted an exemption of no more than five years, commencing September 16, 1992, for discharging restricted hazardous waste pursuant to Section 25208.4(c) of the Toxic Pits Cleanup Act. The next exemption renewal must be granted by:  
**September 16, 1997.**

3. The Discharger shall obtain and maintain a Financial Assurance Instrument until the end of the Post-Closure Maintenance Period for any classified waste management unit subject to Article 5 requirements. The Discharger shall submit a report every five years that either validates the Instrument's ongoing viability or proposes and substantiates any needed changes (e.g., a documented increase in the monitoring systems' ability to provide reliable early detection of a release can cause a decrease in the Instrument's financial coverage).

**REPORT DUE DATE: Within five years of the date of adoption of this Order, and every five years thereafter.**

4. The Discharger shall continue to maintain, monitor for leakage and assure that all applicable requirements identified in this Order are obeyed for the Class II Clarifier Sludge Pond (CSP).

In the event the Discharger submits a proposal to remove the CSP from active service, the Discharger's proposal must first be granted Regional Board approval prior to the implementation of the proposed plan. A technical report, acceptable to the Executive Officer which documents the completion of the project's work must be granted approval prior to the Discharger being relieved of any monitoring requirements for the CSP.

5. The Discharger shall notify this Board of any reportable quantity, (42 gallons or more), of oil or petroleum product spilled or leaked from the Facility to any ground surface not protected by a non-permeable barrier. Verbal notification of the spillage shall be within one working day of knowledge of the spill and shall be followed up with a written description of the spill to include the nature and volume of spillage, total area and/or soil volume affected and location of spillage.

**REPORT DUE DATE: Effective upon adoption of this Order and within 14 calendar days from occurrence of the spill**

6. Regional Board Waste Discharge Requirement Orders Number 87-122 and 92-112 are hereby rescinded.

7. The Discharger shall comply with all applicable requirements of the California Code of Regulations Title 23, Division 3, Chapter 15 which includes the requirements of Article 5.

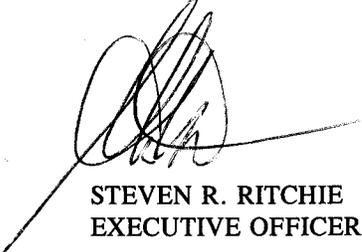
8. The Discharger shall permit the Board, or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

- a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which may be relevant to the Order.
- b. Access to copy any records required to be kept under the terms and conditions of this Order.
- c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
- d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Discharger.

9. The Discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, contours, or ownership of any disposal area.
10. The Discharger shall notify this Board of any soil or groundwater contamination discovered during any subsurface investigations conducted on the Facility property, which may potentially have an adverse impact on ground or surface waters.
11. If the Discharger has commenced work under a program or plan approved by the Executive officer and is in compliance with the schedule of work under that program or plan, then the Discharger shall be deemed to be in full compliance with the program or plan even though all of the work or tasks to ultimately be performed have not been completed.
12. The Discharger shall maintain a copy of this Order at this site so as to be available at all times to site operating personnel.
13. The Board considers the property owner and site operator 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.
14. 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.
15. Technical reports/plans, 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/plans shall consist of a letter report that includes the following:
  - a. Identification of any obstacles which may threaten compliance with the schedule;
  - b. 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 which 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,
  - c. In the first annual self-monitoring report, an evaluation of the current groundwater monitoring system and a proposal for modifications as appropriate.
16. The Discharger shall implement any Monitoring and Reporting Program issued by the Executive Officer.
17. Regional Board staff has reviewed the Dischargers exemption request and hereby grants the Discharger an exemption from unsaturated zone monitoring beneath all surface impoundments.
18. The Discharger shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements dated August 1993, or any amendments thereafter.

19. 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 this office. To assume operation of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. (Refer to Standard Provisions referenced above). The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contract with the Board and a statement. The statement shall comply with the signatory paragraph described in Standard Provisions and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.
20. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, submitted by the Discharger, shall also be provided to the following agencies:
  - a. California Environmental Protection Agency, Department of Toxic Substances Control.
21. If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited, or probably will be discharged in or on any waters of the state, the Discharger shall:
  - a. Report such discharge to the following:
    - (1) This Regional Board at (510) 286-1255 on weekdays during office hours from 8 a.m. to 5 p.m.; and,
    - (2) The Office of Emergency Services at (800) 852-7550.
  - b. A written report shall be filed with the Regional Board within five working days and shall contain information relative to the following:
    - (1) The nature of waste or pollutant;
    - (2) The quantity involved and the duration of incident;
    - (3) The cause of spill;
    - (4) The estimated size of affected area;
    - (5) The corrective measures that have been taken or planned, and a schedule of these measures; and,
    - (6) The persons/agencies notified.
22. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order of the California Regional Water Quality Control Board, San Francisco Bay Region, on November 16, 1994.



STEVEN R. RITCHIE  
EXECUTIVE OFFICER

**Attachments:**

- Figure 1 Site Map
- Figure 2 Location Map
- Figure 3 Monitoring Well Location and Point of Compliance Map

**Appendix I Monitoring & Reporting Program**

- Table 1: Class I Surface Impoundments: Constituents of Concern, Monitoring Parameters, and Water Quality Parameters
- Table 2: Class II Surface Impoundments: Constituents of Concern, Monitoring Parameters, and Water Quality Parameters
- Attachment 1: Response to liquid in the Leachate Collection System
- Attachment 2: Response Chart

**Appendix II Standard Provisions and Reporting Requirements**

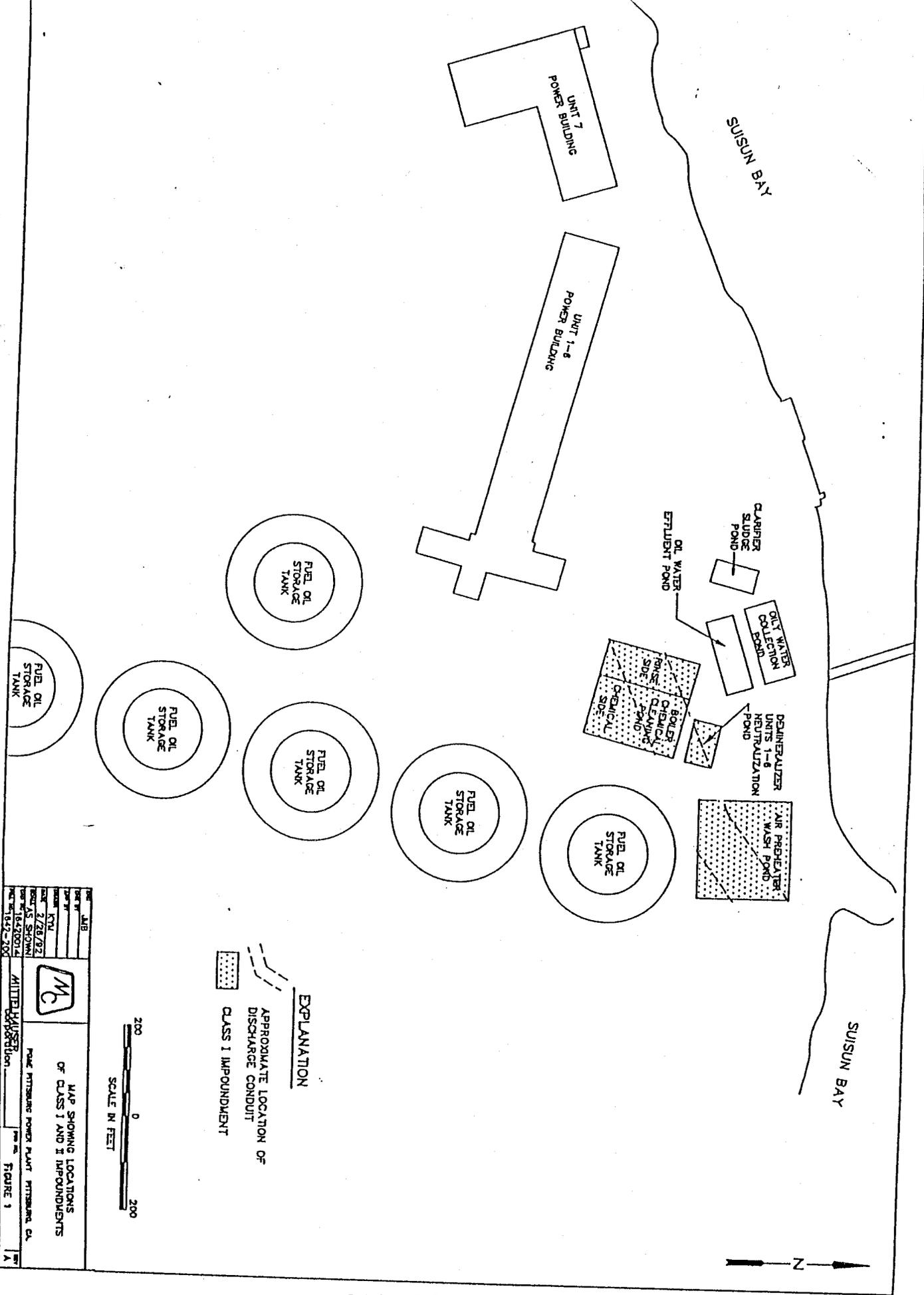
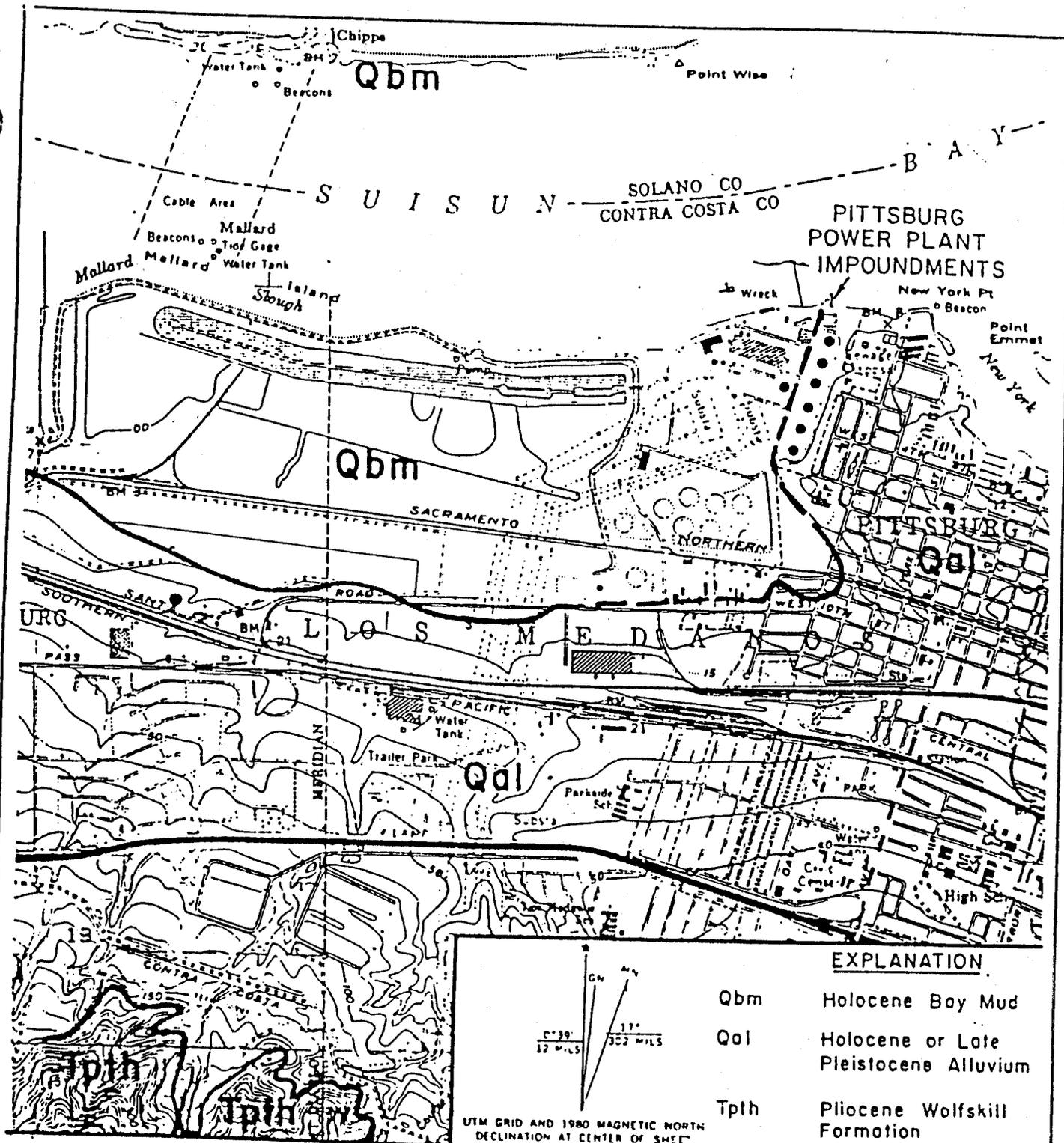
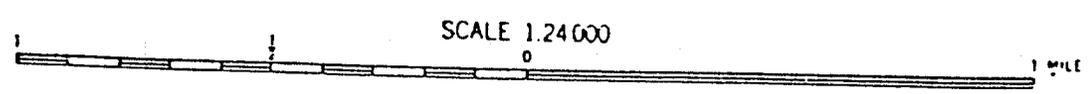
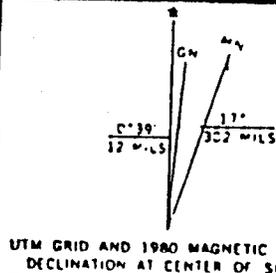


FIGURE 1  
SITE MAP



**EXPLANATION**

Qbm	Holocene Bay Mud
Qal	Holocene or Late Pleistocene Alluvium
Tpth	Pliocene Wolfskill Formation



CONTOUR INTERVAL 10 FEET

FROM: SIMS, ET. AL. 1973

DATE	BAF
BY	
BY	KYM
DATE	2/28/82
SCALE	AS SHOWN
PROJECT	18420024
PHONE	1847-200



MITTELHAUSER Corporation

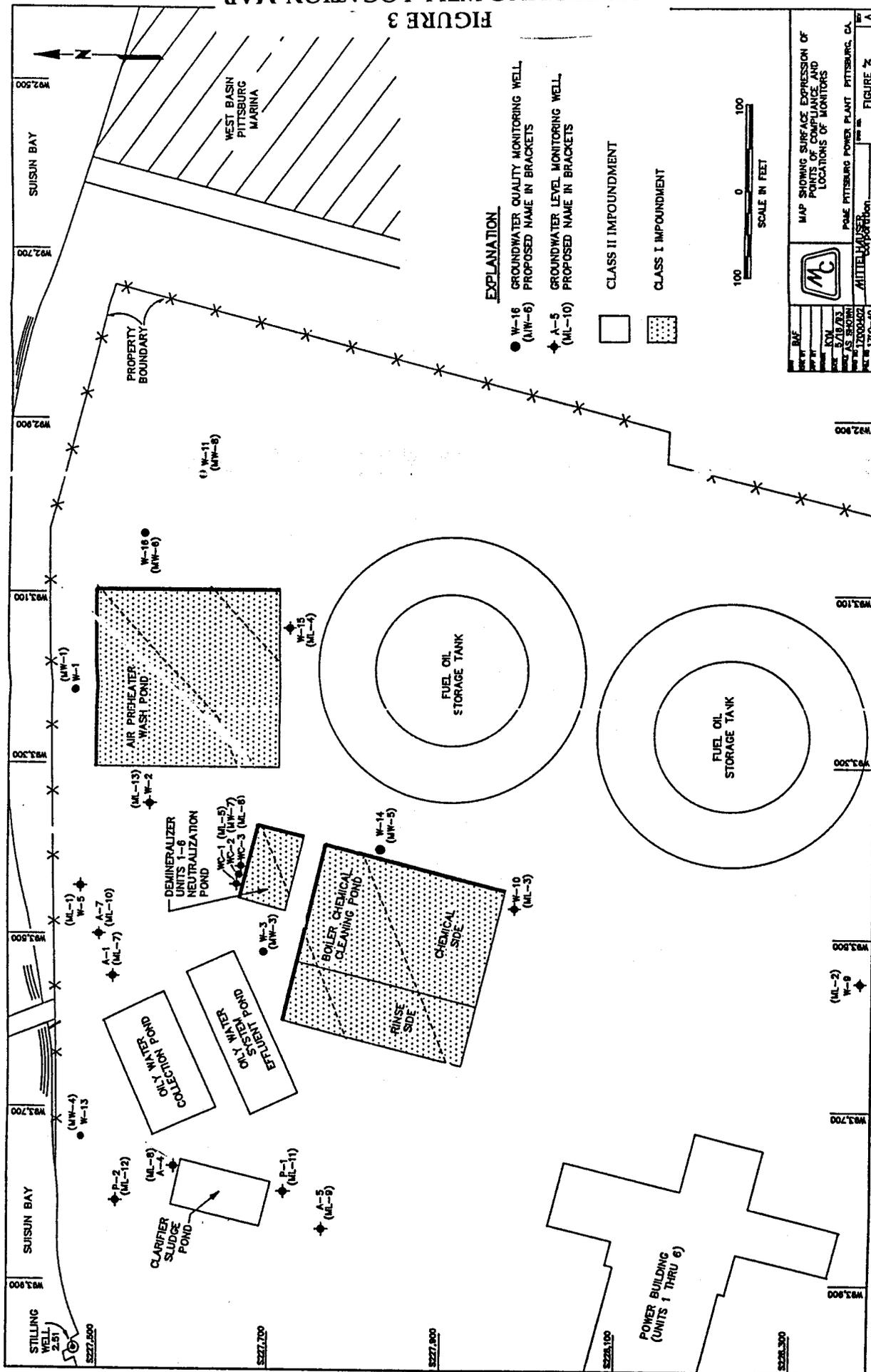
GENERAL GEOLOGICAL MAP OF THE PITTSBURG POWER PLANT AREA

PO BOX PITTSBURG POWER PLANT PITTSBURG, CA

FIGURE 2

FIGURE 2  
LOCATION MAP

MONITORING WELL LOCATION MAP  
FIGURE 3



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**SELF-MONITORING AND REPORTING PROGRAM**

**FOR**

**PACIFIC GAS AND ELECTRIC COMPANY  
PITTSBURG POWER PLANT  
PITTSBURG, CONTRA COSTA COUNTY**

**CONTRA COSTA COUNTY**

**ORDER NO. 94-166**

**CONSISTS OF**

**PARTS I, II, and III**

## PART I

### **A. GENERAL**

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 Monitoring and Reporting Program (M&RP), is issued in accordance with Provision C.16 of Regional Board Order No. 94-166.

The principal purposes of a M&RP are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, and (4) to assist the Discharger in complying with the requirements of Article 5, Chapter 15.

### **B. SAMPLING AND ANALYTICAL METHODS**

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods, and in accordance with an approved sampling and analysis plan. Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer prior to use. The director of the laboratory, or the director's designee, shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the Discharger is responsible for seeing that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meets the following restrictions:

1. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 50% non-numerical determinations [i.e., "trace" or "ND"] in data from Background Monitoring Periods, the analytical method used in the Detection Limit Study ( defined in Part I.B.2) or equivalent should be used to meet or exceed the derived performance standards for MDLs and PQLs (defined in Parts I.C.7 and I.C.8).
2. MDLs and PQLs shall be derived by the laboratory for each selected analytical procedure applicable for the range of expected concentrations conducted under a Detection Limit Study (DLS). The DLS will be performed using representative groundwater matrix and reflecting the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. Results of the DLS will be submitted within six months of the effective date of this Order. If based upon review of the groundwater data, either the Executive Officer or the Discharger determine that an additional DLS is needed, the Discharger will perform additional DLS's as needed.
3. All QA/QC data shall be reported, along with the sample results to which it applies, including the analytical method, recovery rates, relative percent difference and the results of equipment and method blanks, matrix spiked samples, the frequency of quality control analysis, matrix background samples and lab control samples. In addition, analysis results for method blanks or spike recovery shall be reported unadjusted.
4. Statistical procedures for determining the significance of analytical results need not be performed for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Board staff.

5. Unknown chromatographic peaks shall be reported and flagged for easy identification. When unknown peaks are encountered, Regional Board staff may require: an estimate of the concentration of the unknown analyte, and may require that second column or second method confirmation procedures be performed in an attempt to identify and more accurately quantify the unknown analyte.
6. In cases where contaminants are detected in QA/QC samples [i.e., field, trip, or lab blanks], the accompanying sample results shall be appropriately reported.
7. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

**C. DEFINITION OF TERMS**

1. The "**Monitored Media**" are those water bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media at this facility is the ground water in both the upper aquifer and perched water zone, in any other portion of the zone of saturation [§2601 of Chapter 15] in which it would be reasonable to anticipate that waste constituents migrating from the surface impoundments could be detected.
2. The "**Constituents of Concern [COC]**" are those constituents which are likely to be in the waste in the facility or which are likely to be derived from waste constituents, in the event of a release. The Constituents of Concern for the facility's are listed in Table 1 and Table 2 of this appendix.
3. The "**Monitoring Parameters**" are a subset of the constituents of concern and are parameters used for the majority of monitoring activity. The Monitoring Parameters for the facility are listed in Table 1 and Table 2. Monitoring Parameters are used to indicate leakage from the facility into the monitored media by comparing the monitoring results with the maximum allowable concentration limits established for a given monitored sector. For a detection monitoring program, the monitoring parameters provide a possible indication of a release. During a corrective action period, monitoring parameters provide a means to evaluate the effectiveness of the corrective action.
4. "**Standard Observations**" along the perimeter of the surface impoundments refer to:
  - a) Evidence of liquid leaving the surface impoundments, estimated size of affected area, and flow rate [show affected area on map];
  - b) Evidence of erosion of surface impoundment containment structures.
  - c) Monitoring of surface impoundment leachate levels.
5. "**Standard Analysis and Measurements**" refers to:
  - a) Turbidity [only for water samples], in NTU;
  - b) Water elevation to the nearest 1/100th foot above mean sea level [only for ground water monitoring]; and
  - c) Sampling and statistical analysis of the **Monitoring Parameters**.
6. "**Matrix Effect**" refers to any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents -- either of natural origin or introduced through a release -- that are present in the sample of water.
7. "**Method Detection Limit [MDL]**", for a given analytical laboratory using a given analytical method to detect a given constituent means the MDL determined by the DLS.

8. **"Practical Quantitation Limit [PQL]"**, for a given analytical laboratory using a given analytical method to detect a given constituent means the lowest constituent concentration derived from the DLS (defined in Part B.2) that the laboratory can regularly quantify within specified limits of precision that are acceptable to the Regional Board Executive Officer.
9. **"Sample & Analysis Period"** means the duration separating sampling and analysis events from monitoring points or wells, for a given type of monitoring from the time the next iteration of that event. Unless otherwise specified in this M&RP, the period for sampling and analysis for the Monitoring Parameters is quarterly. The period for sampling and analysis of all Constituents of Concern (COC), is quarterly until at least one year of data is collected, thereafter at least annually for the first five years from the date of issuance of this M&RP, and then once every five years after the fifth Annual Report unless the Executive Officer requests to continue the once-per-year COC Sampling and Analysis Event.
10. **"Sample & Analysis Event"** means the point in time that sampling and analysis is performed from monitoring points or wells, for a given type of monitoring. Unless otherwise specified in this M&RP, the sampling and analysis for the Monitoring Parameters will be quarterly, and the sampling and analysis of all Constituents of Concern will be during the 4th quarter Sampling and Analysis Period.
11. **"Reporting Period"** means the duration separating the submittal of a monitoring report from the time the next iteration of that report is scheduled for submittal. Unless otherwise specified in this M&RP, the reporting period of the results of the sampling and analysis period is 6 months. The Reporting Period for the Annual Summary Report extends from January 1 of the previous year to December 31 of the current year. The due date for any given report will be 60 days after the end of its Reporting Period, unless otherwise stated.
12. **"Receiving Waters"** refers to any surface water which actually or potentially receives surface or ground waters which pass over, through, or under waste materials or contaminated soils. In this case the following surface water bodies are considered receiving waters: Suisun Bay, and the San Francisco Bay.
13. **"Control Chart"** means a graphical method for evaluating whether a process is or is not in a state of statistical control. X-Bar control charts evaluate the process level or subgroup differences in terms of the subgroup average.

**D. RECORDS TO BE MAINTAINED**

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of three 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:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;
2. Date and time of sampling;
3. Date that analyses were started and completed, and the name of the personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identity of reagents used;
5. Calculation of results; and,

6. Results of analyses, and the MDL and PQL for each analysis.

**E. REPORTS TO BE FILED WITH THE BOARD**

1. A written **Quarterly Monitoring Report** for the Class I and Class II surface impoundments shall be submitted quarterly. The fourth Quarterly Monitoring Report will be the "**Annual Summary Report**". The reports shall be comprised of at least the following:
  - a. **Letter of Transmittal**

A letter transmitting the essential points in each report shall accompany each report. Such a letter shall include a discussion of any requirement violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, 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 above, or by his/her 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;
  - b. Each Monitoring Report shall include a compliance evaluation summary. The summary shall contain at least:
    - 1) For each monitored ground water body, a description and graphical presentation of the velocity and direction of ground water flow under/around the facility, based upon water level elevations taken during the collection of the water quality data submitted in the report;
    - 2) **Pre-Sampling Purge for Samples Obtained From Wells:** For each monitoring well addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH temperature, conductivity, and turbidity testing, the well recharge rate, and the method of disposing of the purge water);
    - 3) **Sampling:** For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump -- or other device -- used and its placement for sampling, and a detailed description of the sampling procedure [number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name of the person taking the samples and statement which indicates that the person actually taking the samples is qualified to take samples, and any other observations];
  - c. A map or aerial photograph showing the locations of observation stations and Monitoring Points;
  - d. For each Monitoring Report include laboratory statements of results of all analyses demonstrating compliance with Part I.B.;
  - e. An evaluation of the effectiveness of the leachate monitoring and control facilities.

- f. A summary and certification of completion of all Standard Observations [Part I.C.4.] for the facility, for the perimeter of the facility, and for the Receiving Waters; and
- g. The quantity and types of wastes discharged and the locations in the facility where waste has been placed since submittal of the last such report. (To be reported semiannually)

2. **CONTINGENCY REPORTING**

- a. The Discharger shall report by telephone, immediately after it is discovered, evidence of a significant release that may pose an imminent threat to surface or subsurface waters of the State from the Class I or Class II surface impoundments or beyond any boundary of the Facility. A written report shall be filed with the Board within seven days, containing at least the following information:
  - 1) A map showing the location(s) of release;
  - 2) An estimate of the flow rate;
  - 3) A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
  - 4) corrective measures underway or proposed.
- b. Should the statistical comparison [Part III] indicate, for any Constituent of Concern or Monitoring Parameter, that a statistically significant release is tentatively identified, the Discharger shall immediately notify the Regional Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination [§2550.8(j)(1)], and shall follow the Discharger's approved discrete retest procedure. If the retest confirms the existence of a significant release, the Discharger shall carry out the requirements of Part I.E.2.d. In any case, the Discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven days of completing the retest.
- c. If either the Discharger or the Regional Board determines that there is significant physical evidence of a release [§2550.1(3) of Article 5], the Discharger shall immediately notify the Regional Board of this fact by certified mail [or acknowledge the Regional Board's determination] and shall carry out the requirements of Part I.E.2.d. for all potentially-affected monitored media.
- d. If the Discharger concludes that a release, or a statistically significant increase in contaminant concentration, has occurred:
  - 1) Then the Discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Regional Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point. Because this scan is not to be tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point [§2550.8(k)(1)];
  - 2) The Discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of §2550.8(k)(5) and §2550.9 of Article 5; and
  - 3) The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of §2550.8(k)(6) of Article 5 to provide for a corrective action or improve any existing corrective action.

3. **ANNUAL SUMMARY REPORT**

The Discharger shall submit an annual report to the Board covering the previous monitoring year. The Reporting Period ends December 31. This report shall contain:

- a. **A Graphical Presentation of Analytical Data** [§2550.7(e)(14) of Article 5]. For each Monitoring Point and any Background Monitoring Points, submit in graphical format the laboratory analytical data for all samples taken on a quarterly frequency. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point or Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. All graphs for a given constituent shall be plotted at the same scale to facilitate visual comparison of monitoring data. On the basis of any aberrations noted in the plotted data, the Executive Officer may direct the Discharger to carry out a preliminary investigation [§2510(d)(2)], the results of which will determine whether or not a release is indicated;
- b. All monitoring analytical data obtained during the previous two six-month Reporting Periods, presented in tabular form as well as on a 3½" or 5¼" diskettes, either in MS-DOS/ASCII format or in another file format acceptable to the Executive Officer. Data sets too large to fit on a single 360KB/720KB or 1.2MB/1.4MB diskette may be submitted on disk in a commonly available compressed format [e.g., FASTBACK or NORTON BACKUP, etc.]. The Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis [§2550.8(h)], in that this facilitates periodic review by the Board's statistical consultant;
- c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements;
- d. A written summary of the ground water and if applicable soil-pore gas analyses, indicating any changes made since the previous annual report; and
- e. An evaluation of the effectiveness of the leachate monitoring/control facilities, pursuant to §2543(b,c, & d).

## Part II: MONITORING AND OBSERVATION SCHEDULE

### **A. WASTE MONITORING - (Class I and II Surface Impoundments) -- Report Twice Annually, as part of the Monitoring Report**

1. Record the total volume of wastewater discharged to each surface impoundment during each quarter.
2. Record a description of the waste stream.

### **B. WATER SAMPLING/ANALYSIS FOR MONITORING**

1. **Thirty-Day Sample Procurement Limitation.** For any given monitored medium, the samples taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Reporting Period shall all be taken within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible [§2550.7(e)(12)(B) of Article 5]. Ground water sampling shall also include an accurate determination of the ground water surface elevation and field parameters [temperature, electrical conductivity, turbidity] for that Monitoring Point or Background Monitoring Point [§2550.7(e)(13)]; ground water elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the Spring and Fall ground water flow rate/direction analyses. Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Part III of this program.
2. **Monitoring Points and Background Monitoring Points For Each Monitored Medium:** The Discharger shall sample Monitoring Points and Background Monitoring Points, in accordance with the sampling schedule given in Table 1 and Table 2.
3. **Quarterly Determination of Ground Water Flow Rate/Direction [§2550.7(e)(15) of Article 5]:** The Discharger shall measure the water level in each well and determine ground water flow rate and direction in each ground water body described in Part II.B.2. at least quarterly, including the times of expected highest and lowest elevations of the water level for the respective ground water body. This information shall be included in the twice-yearly monitoring reports required under Part I.
4. **"Direct Monitoring" of All Constituents of Concern .** In the absence of a release being indicated (1) for a Monitoring Parameter, (2) based upon physical evidence, pursuant to Part I.E.2.c., or (3) by a study required by the Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data [Part I.E.3.a.], then the Discharger shall sample all Monitoring Points (specified in Table 1 and Table 2) and Background Monitoring Points for water-bearing media for all Constituents of Concern every fifth year, beginning with the year of the effective date of this Monitoring and Reporting Program, with successive direct monitoring efforts being carried out alternately in the Spring of one year [Reporting Period ends March 31] and the Fall of the fifth year thereafter [Reporting Period ends September 30].
5. **Initial Background Determination:** For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Background Monitoring Point in each monitored medium [§2550.7(e)(6)]:
  - a. Whenever a new Constituent of Concern is added to the Water Quality Protection Standard, including any added by the adoption of this Order, the Discharger shall collect at least one sample quarterly for at least one year from each Background Monitoring Point in each monitored medium and analyze for the newly-added constituent(s); and
  - b. Whenever a new Background Monitoring Point is added, including any added by this Order, the Discharger shall sample it at least quarterly for at least one year, analyzing for all Constituents of Concern and Monitoring Parameters.

6. **Monitoring Points and Background Monitoring Points For Each Monitored Medium:**

The Discharger shall sample the Monitoring Points and Background Monitoring Points in accordance with the sampling schedule listed in Table 1 and Table 2.

C. **LEACHATE COLLECTION AND REMOVAL SYSTEM MONITORING**

1. Class I Surface Impoundments

- a. The Discharger shall daily: inspect, monitor leachate levels, and determine rate of liner leakage, for each impoundments' leachate collection and removal system (LCRS). All pumpable liquids shall be pumped and the volume pumped shall be measured and recorded. The results of the daily inspections shall be maintained by the Discharger and a summary reported in the quarterly report submittals.
- b. Records of liquid levels and volumes of liquid removed from the LCRS shall be reviewed daily and compared to the Response Action Plan (RAP) (Attachments 1 and 2) and appropriate action taken. The Regional Board shall be notified within 48 hours of a determination of leakage of Level 2 or greater from any liner system.
- c. The liquid levels in each LCRS standpipe must be checked once per eight hour shift if the volume of liquid removed from the primary LCRS standpipe exceeds 1/2 the capacity of the lateral pipe or if any liquid is detected in the LCRS standpipe 2.

2. Class II Surface Impoundments

- a. The Discharger shall weekly: inspect, monitor leachate levels, and determine rate of liner leakage, for each impoundments' leachate collection and removal system (LCRS). All pumpable liquids shall be pumped and the volume pumped shall be measured and recorded. The results of the weekly inspections shall be maintained by the Discharger and a summary reported in the quarterly report submittals.
- b. Records of liquid levels and volumes of liquid removed from the LCRS shall be reviewed weekly and compared to the previous data.
- c. If greater than 10 gallons per day for two consecutive days, of leachate is detected in the CSP's primary LCRS, **and** leachate is detected in the CSP's secondary LCRS, leachate which is removed from the CSP's secondary LCRS will be tested to determine if the leachate is consistent with the contents of the CSP. If the test results indicate that the CSP's secondary LCRS contains CSP leachate greater than or equal to 10 gallons per day, the surface impoundment will be emptied and removed from service. The sludge will be removed from the impoundment and the liners repaired. Prior to returning the surface impoundment to service, the liners will be tested to assure there is no leakage through the liners.
- d. If greater than five gallons of leachate is removed from a LCRS standpipe during a weekly inspection, the frequency of inspections, shall be increased to once per day. If the amount of leachate removed from the primary system is greater than 30 gallons per day for two consecutive days, the surface impoundment will be emptied and removed from service. The sludge will be removed from the impoundment and the liner repaired. Prior to returning the surface impoundment to service, the liners will be tested to assure there is no leakage through the liners.

**Part III: STATISTICAL ANALYSIS OF SAMPLE  
DATA DURING A DETECTION MONITORING PROGRAM**

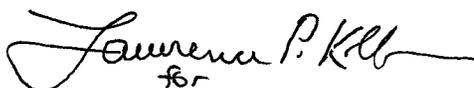
The Discharger has propose and has received approval for the statistical method outlined in Section 7.0 of the Groundwater Monitoring Plan (revised June 1994) which will hereby be used to evaluate groundwater data for the Class I. Groundwater samples for the Class II surface impoundments will be evaluated using similar statistical methods.

The approved statistical procedure meets the definition for an Alternate Statistical Method (ASM) pursuant to Section 2550.7(e)(8)(E) in the California Code of Regulations (CCR) Title 23, Chapter 15, Article 5. The approved statistical method consist of an X-Bar Control Chart (CCR 23, Section 2550.7 (e)(9)(C)), a procedure to evaluate non-detects (CCR 23, Section 2550.7(e)(9)(E)), a procedure to manage quality control data (CCR 23, Section 2550.7 (e)(9)(G)), and a list of proposed PQLs (CCR 23, Section 2550.7 (e)(7)) to be updated later by the Detection Limit Study. The proposed ASM outlined in the procedure to determine a "Statistical Significant Increase" (CCR 23, Section 2550.7 (e)(7)) and a Double Discrete Retest for confirmation statistics (CCR 23, Section 2550.7 (e)(8)(E)).

In the Groundwater Monitoring Plan (revised June 1994), the Discharger has proposed a list of Constituents of Concern, Monitoring Parameters, Points of Compliance, Monitoring Points, frequency for sampling and statistical analysis, and procedure to establish and update Concentration Limits pursuant to CCR 23, Section 2550.2 to 2550.8 in defining the Water Quality Protection Standards and complying with the Detection Monitoring Program Performance Standards.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing Monitoring and Reporting Program:

1. Will be developed in accordance with the procedure set forth in this regional Board's Resolution 73-16 in order to obtain data and documentation of compliance with waste discharge requirements established by this Board.
2. Is effective within 90 days upon adoption of this Order.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger upon which revisions may be ordered by the Executive Officer or the Regional Board.



STEVEN R. RITCHIE  
EXECUTIVE OFFICER

November 16, 1994  
Effective Date

**TABLE 1**

**Class I Surface Impoundment Monitoring Specifications**

1. The Discharger shall monitor seven groundwater wells which have been screened in the upper aquifer for the detection of a release from any Class I surface impoundment.

**LIST OF MONITORING PARAMETERS, CONSTITUENTS OF CONCERN,  
AND WATER QUALITY PARAMETERS**

Constituents of Concern	Boiler Chemical Cleaning and Rinse Pond  wells monitored: W3(MW3) W14(MW5)	Air Preheater Wash Pond  wells monitored: W1(MW1) W16(MW6)	Demineralizer Neutralization Pond  wells monitored: WC2(MW7)	Background Wells  wells monitored: W4(MW4) W11(MW8)
Ammonia	MP	-	-	WQ
Bromide	MP	-	-	WQ
Calcium	WQ	WQ	WQ	WQ
Carbonate/ Bicarbonate	WQ	WQ	WQ	WQ
Chloride	WQ	WQ	WQ	WQ
Chromium	COC	MP	-	WQ
Copper	MP	COC	-	WQ
Fluoride	MP	-	MP	WQ
Iron	MP	COC	-	WQ
Magnesium	WQ	WQ	WQ	WQ
Nickel	COC	MP	-	WQ
Potassium	WQ	WQ	COC	WQ
Sodium	WQ	WQ	WQ	WQ
Sulfate	WQ	MP	MP	WQ
Vanadium	-	COC	-	WQ
Zinc	COC	COC	MP	WQ

**LEGEND:**

- MP = Monitoring Parameter
- COC = Constituent of Concern
- WQ = Water Quality Parameter

2. Frequency of Monitoring
  - a. Monitoring Parameter - Quarterly sampling with statistical analysis
  - b. Constituent of Concern - Quarterly sampling for two years, then annual sampling and statistical analysis
  - c. Water Quality Parameter - Quarterly sampling for one year, then annual sampling with no statistical analysis

**TABLE 2**

**Class II Surface Impoundment Monitoring Specifications**

1. The Discharger shall monitor three groundwater wells which have been screened in the perched water zone for the detection of a release from any Class II surface impoundment.

**LIST OF MONITORING PARAMETERS, CONSTITUENTS OF CONCERN,  
AND WATER QUALITY PARAMETERS**

Constituents of Concern	Oily Water Collection Pond  well monitored: A-1(ML-7)	Clarifier Sludge Pond  well monitored: A-4(ML-8)	Background Well  well monitored A-5(ML-9)
Carbonate/ Bicarbonate	WQ	MP	WQ
Calcium	WQ	MP	WQ
Magnesium	WQ	MP	WQ
sulfate	WQ	COC	WQ
TPH (8015/3550)	MP	-	WQ

**LEGEND:**

- MP = Monitoring Parameter
- COC = Constituent of Concern
- WQ = Water Quality Parameter

2. Frequency of Monitoring

- a. Monitoring Parameter - Quarterly sampling with statistical analysis
- b. Constituent of Concern - Quarterly sampling for one year, then annual sampling and statistical analysis
- c. Water Quality Parameter - Quarterly sampling for one year, then annual sampling with no statistical analysis

## **ATTACHMENT 1: RESPONSE TO LIQUID IN THE LEACHATE COLLECTION SYSTEM**

After comparing the actual volume detected in the standpipe with the Response Chart (Attachment 2) the appropriate response, as described below will be performed.

### **EMERGENCY RESPONSE**

The operating foreman, with the assistance of plant personnel, will evaluate the Hazardous Waste Inspection Log, the Leachate Collection Inspection Log, and the Operator's assessment of the situation. All notifications to the agencies will be done by plant personnel. Liquids in the Leachate Systems will be sampled and analyzed to determine the source of the liquid.

### **RESPONSE LEVEL 1**

- A. If a boiler chemical cleaning is in progress, continue the cleaning operation and discharge the solutions into the pond.
- B. Follow the normal treatment procedures before emptying the leaking pond.
- C. Inspect and repair the primary liner at next annual inspection. Prove a performance standard of no leakage through the repaired liners, before putting the surface impoundment into operation.

### **RESPONSE LEVEL 2**

- A. Notify the regulatory agencies as per the Hazardous Waste Contingency Plan.
- B. If a boiler chemical cleaning is in progress, continue the cleaning operation and discharge the solutions into the pond.
- C. Follow the normal treatment procedures before emptying the leaking pond.
- D. Inspect and repair all liner systems at the next annual inspection. Prove a performance standard of no leakage through the repaired liners, before putting the surface impoundment into operation.

### **RESPONSE LEVEL 3**

- A. Notify immediately and provide in writing an evaluation of the potential for unauthorized discharge from the impoundment to the regulatory agencies as per the Hazardous Waste Contingency Plan.
- B. Discontinue all discharges to the pond. If a boiler chemical cleaning is in progress, route all discharges to a non-leaking pond.
- C. Transfer contents of leaking pond to a non-leaking pond (if possible).
- D. Expedite normal treatment and discharge procedures.
- E. Remove leaking pond from service.
- F. Inspect and repair primary liner. Prove a performance standard of no leakage through the repaired liners, before putting the surface impoundment into operation.

### **RESPONSE LEVEL 4**

- A. Notify immediately and provide in writing an evaluation of the potential for unauthorized discharge from the impoundment to the regulatory agencies as per the Hazardous Waste Contingency Plan.
- B. Discontinue all discharges to the pond. If a boiler chemical cleaning is in progress, route all discharges to a non-leaking pond.
- C. Transfer contents of leaking pond to a non-leaking pond (if possible).
- D. Expedite normal treatment and discharge procedures.
- E. Remove leaking pond from service.
- F. Inspect and repair all liner systems. Prove a performance standard of no leakage through the repaired liners, before putting the surface impoundment into operation.

### **RESPONSE LEVEL 5**

- A. Notify immediately and provide in writing an evaluation of the potential for unauthorized discharge from the impoundment to the regulatory agencies as per the Hazardous Waste Contingency Plan.
- B. Discontinue all discharges to the pond. If a boiler chemical cleaning is in progress, route all discharges to a non-leaking pond.
- C. Immediately transfer contents of leaking pond to a non-leaking pond. If pond contents cannot be transferred to a non-leaking pond, immediately arrange for additional storage capacity.
- D. Expedite normal treatment and discharge procedures.
- E. Remove leaking pond from service.
- F. Inspect and repair all liner systems. Prove a performance standard of no leakage through the repaired liners, before putting the surface impoundment into operation.

In the event of any Emergency Response, monitoring of the Leachate Systems will continue until otherwise notified. See Attachment 2 for Response Chart.

# RESPONSE CHART

Pittsburg Power Plant

Primary Standpipe Liquid Volume

Secondary Standpipe Liquid Volume	Less than or equal to 1/4 gallon per day	Greater than 1/4 gal/day and less than or equal to 10 gallons/day	Greater than 10 gallons/day and less than or equal to 30 gallons/day	Greater than 30 gallons/day, or greater than 10 gallons per shift for two consecutive shifts
Less than or equal to 1/4 gallon per day	Response Level 1	Response Level 1	Response Level 1	Response Level 3
Greater than 1/4 gal/day and less than or equal to 10 gallons/day	Response Level 2	Response Level 2	Response Level 4	Response Level 4
Greater than 10 gallons/day	Response Level 4	Response Level 4	Response Level 4	Response Level 5

•NOTIFY OPERATING FOREMAN IF ANY LIQUID CAN BE PUMPED FROM A SECONDARY STANDPIPE THE OPERATING FOREMAN WILL THEN CONTACT THE ENVIRONMENTAL HEALTH AND SAFETY DEPARTMENT