

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 01-094
SITE CLEANUP REQUIREMENTS FOR:

RHODIA INC.
MARTINEZ FACILITY
PEYTON SLOUGH PROJECT

for the property located at

100 MOCOCO ROAD
MARTINEZ
CONTRA COSTA COUNTY

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

- Site Location:** Rhodia Inc. manufactures various strengths and grades of sulfuric acid and oleum at their Martinez facility located at 100 Mococo Road in Martinez. The approximately 114-acre plant site (hereinafter called the Facility) is located adjacent to the Carquinez Strait and the south end of the Benecia Bridge, at the end of Mococo Road (Figure 1). Peyton Slough is located along the eastern boarder of the site, and extends approximately 5,550 feet from Waterfront Road to the Carquinez Strait. Peyton Slough is surrounded by marshlands along its eastern bank, and extends southward under Waterfront Road to the McNabney Marsh (formerly called the Shell Salt Marsh). The majority of the wetlands adjacent to the Slough and the Carquinez Strait are owned by the State of California, and administered by the States Lands Commission.

- Purpose of Order:** The purpose of this order is to adopt cleanup requirements for sediment contamination in and adjacent to Peyton Slough.

- Named Dischargers:** Rhodia Inc. is named as a discharger due to their ownership of the Martinez facility. If additional information is submitted indicating that other parties caused permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding those parties' names to this order.

- Site History:** From the turn of the century to 1958, the Mountain Copper Company (MOCOCO) operated a copper smelter at the site. Over the years, large piles of mineral processing and beneficiation wastes (primary copper smelting slag and "cinders" from roasting of pyrite ores used for leaching metals) were accumulated onsite. Some of the roasted cinders and slag were deposited into Peyton Slough where they remain today.

In 1968, Stauffer Chemical Company assumed ownership of the Facility and began construction of the current acid plant. In 1988, Rhone-Poulenc, Inc. acquired Stauffer

thereby acquiring the property and the operations that comprise the Facility. In 1998, Rhodia was created as a separate, independent corporation by Rhone-Poulenc, and the property and the operations that comprise the Facility were transferred to Rhodia, Inc.

The Slough, particularly the northern segment, has been the subject of several environmental investigations to evaluate metals concentrations in soil and sediment. Based on the results of previous studies conducted at the Site, the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) Bay Protection Toxic Cleanup Program has identified the Slough as one of the "toxic hot spots" within the San Francisco Bay Area (RWQCB, 1997).

Currently, an ongoing multi-agency restoration project is being conducted in the adjacent McNabney Marsh. One phase of the project completed in 1998, consisted of the construction of a new tide gate that is designed to allow the southern flow of salt water from Peyton Slough into the McNabney Marsh. However, due to the elevated levels of metals in the slough, and the potential to transport metal contaminated sediments from the slough into the McNabney Marsh, it has been determined that the tide gate will not function as designed until Peyton Slough is remediated.

5. **Regulatory Status:** The site is subject to the following Board orders:
 - Waste Discharge Requirements Order No. 97-121, adopted October 15, 1997
 - NPDES Permit Order No. 93-060 in June 1993. The permit was amended by Order No. 96-033 in March 1996.

6. **Site Hydrogeology:** The Facility is located in California's east-central Coast Range geomorphic province. The majority of the higher portions of the Facility reside on an artificially graded hill composed of Cretaceous and Paleocene shale and sandstone. Topographic lows at the Facility are composed of flat-lying Quaternary Bay Muds, sands and peats of the Sacramento/San Joaquin fluvial-deltaic depositional system. The developed areas of the topographically low-lying ground was variously filled or otherwise covered with mining wastes composed of cinders and slag that has been classified as Class B mining waste. Cinders and slag had previously been piled at the site where this material sank into the Bay-Mud sequence and remains buried.

The Facility is located in the McNabney Marsh/Peyton Slough Groundwater Basin, immediately to the west and adjacent to the mouth, or lowermost end, of the Ygnacio Valley Groundwater Basin. To the west of the McNabney Marsh/Peyton Slough Groundwater Basin is the Alhambra Valley Groundwater Basin. Groundwater within these basins is primarily stored in recent and older alluvium. Groundwater also occurs, through under different conditions, in the consolidated Cretaceous and Tertiary rocks that surround and underlies the groundwater basins.

The majority of the Facility is located just above sea level, with the shallow groundwater found zero to twelve feet below the low-lying areas. Groundwater flow within the Facility is predominantly controlled by topography, flowing from topographic highs to topographic low areas. According to the City of Martinez Water Utilities Department there are no drinking water wells located within a one-mile radius of the site.

The site contains three hydrostratigraphic units that include the following:

- **The water table unit:** The unit comprises the shallowest saturated zone beneath the site. The unit is most pronounced in the southern portion of the site. The unit is comprised of fill, Bay Muds and peats. Along the south eastern edge of the manufacturing site, groundwater flows toward Peyton Slough. Proceeding north, groundwater flow is toward Sump S-29, sump S-24 and it's the collection drain that is parallel and adjacent to the Carquinez Strait, and then at the northeast end of the manufacturing site, groundwater flow is toward sump S-28 and possibly Peyton Slough.
 - **The bedrock unit:** Groundwater within the unit flows to the southeast beneath the southern half of the site and north towards the Carquinez Strait for the northern half of the site. The unit is encountered in consolidated and/or cemented material that underlies unconsolidated sediments and outcrops at the site. Portions of the unit are confined while other portions are unconfined.
 - **The lower intermediate/peat unit:** The unit is irregularly distributed in the alluvium beneath the low-lying portions of the site. This unit is particularly prevalent beneath and adjacent to the former evaporation ponds. The unit comprises lenses of peat and peaty sands or mud deep within the alluvium of the site.
7. **Remedial Investigations:** In 1997 the statewide Bay Protection and Toxic Cleanup Program identified the Peyton Slough as a "Toxic Hotspot". Analytical results indicate that Peyton Slough sediments have been impacted by high levels of metals such as; copper at 7,800 mg/kg, and zinc at 6,000 mg/kg. Toxicity to aquatic organisms was found to be associated with the high levels of metals found in the slough sediments. Other Peyton Slough investigations conducted in 1986, 1991, 1998, 1999, and 2000 have reported copper as high as 452,000 mg/kg and zinc as high as 88,300 mg/kg. For reference, Title 22 of the California Code of Regulations lists the Total Threshold Limit Concentration (TTL) of copper at 2,500 mg/kg and zinc at 5,000 mg/kg.

The embankments of Peyton Slough maintenance dredge disposal piles located on top of the slough embankments, and exploratory trenches located immediately adjacent to the western bank of the Peyton Slough were sampled. The embankment samples reported copper as high as 1,300 mg/kg and zinc as high as 3,200 mg/kg. The dredge spoil piles results reported copper as high as 5,900 mg/kg and zinc as high as 3,800 mg/kg.

The discharger excavated several exploratory trenches along the western bank of the slough. The trench results indicated that cinder/slag waste was found buried adjacent to the slough. Soil samples collected from the trenches detected copper as high as 20,000 mg/kg and zinc as high as 5,600 mg/kg. Acidic soils with a pH as low as 2.6 were also reported. Water samples collected from the trenches detected copper as high as 120 mg/l, zinc as high as 850 mg/l, and a pH as low as 3.5. The exploratory trench investigations indicated that groundwater may be hydraulically connected to Peyton Slough, and is therefore a potential source of contamination to the Slough.

8. **Adjacent Sites:** Several properties that are located adjacent to Peyton Slough are affected by the slough's contamination or may be affected by the cleanup activities for the slough. The McNabney Salt Marsh has a tide gate controlled tidal connection to Peyton Slough. The McNabney Marsh is currently part of a multi-agency restoration project that has been delayed due to concerns regarding the transport of contaminants from the slough into the McNabney Marsh during incoming tides.

Other adjacent sites that may be affected by slough remediation include the Mt. View Sanitary District which discharges treated wastewater to the upper reach of Peyton Slough, the State Lands Commission which owns a portion of the land on which contaminants reside, and Shore Terminal which is an adjacent property owner located east of the slough.

9. **Interim Remedial Measures:** Interim remedial measures for Peyton Slough contamination have not been proposed or initiated.

10. **Feasibility Study:** The discharger submitted a Feasibility Study dated March 2, 2001. The report screened and compiled nine remedial action alternatives. Of the nine alternatives screened two alternatives emerged as the preferred alternatives. The first remedial alternative consists of:

- mechanical dredging of Peyton Slough to a depth of three feet;
- disposal of the contaminated sediments to an appropriated disposal site;
- capping the residual slough contaminants with an approximately three foot thick engineered cap system; and
- implementing institutional controls for the residual contamination.

The second remedial alternative consists of:

- a full re-alignment of Peyton Slough that consists of excavating a new slough alignment east of the existing slough alignment;
- capping the contaminated sediments and backfilling the current contaminated slough alignment with soil excavated from the new alignment;
- removal of the current tide gate and replacement with a new tide gate in the new slough alignment;
- restoration of the marsh impacted by implementation of the alternative; and
- implementing institutional controls for the residual contamination.

The alternatives were screened against seven criteria as required by USEPA guidance. These criteria include: protection of human health and the environment, compliance with remedial action objectives, short and long-term effectiveness and performance, reductions in toxicity and contaminant mobility, implementability, cost, and regulatory and community acceptance. Although both remedial options meet the seven criteria needed for acceptance, after additional review, the discharger has determined that the second alternative is preferable for several reasons. The new slough will be constructed in a clean portion of the marsh and therefore will guarantee that the slough will be clean and free of site pollutants. This alternative does not impose any restrictions on future maintenance and/or enhancement dredging by the Mosquito Abatement District. Since the new slough alignment will be constructed in a clean area, there will be no disturbance of sediments containing contaminants. The new slough alignment could then increase water flow into the upper reaches of the McNabney Marsh without restrictions.

If the existing slough is dredged and capped, restrictions will be required to protect the integrity of the cap and to prevent the exposure of the contaminants that remain in place under the cap. The Trust will not be able to widen the slough without disturbing the cap. Future maintenance dredging will be more complicated due to the restrictions that will be necessary to protect the cap. Furthermore, due to the proximity of the cinder/slag wastes to the existing slough, it may be difficult to prevent the migration of contaminants into the slough via groundwater transport. By building the new slough, the existing slough can be designed as a hydraulic barrier to prevent contaminants from reaching the new slough and other critical habitat where exposure can occur. Therefore, the second alternative, has been selected as the preferred alternative and the discharger will move forward to implement this remedial action alternative to reduce the risks at the site to acceptable levels.

11. **Cleanup Plan:** The goal of the Peyton Slough remedial action is to restore the beneficial uses of Peyton Slough. While the final cleanup plan for the site has not been prepared, initial discussions with other regulatory agencies have indicated a preference toward the second remedial alternative. Staff concludes that any remedial alternative that is selected must address the hydraulic connection of groundwater from the site to the current slough.

12. Basis for Cleanup Standards

- a. **General:** State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. This order and its requirements are consistent with Resolution No. 68-16.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

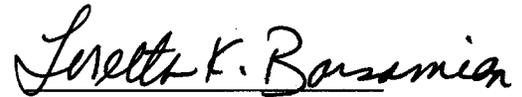
- b. **Beneficial Uses:** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in Title 23, California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when necessary.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 15, 2001.



Loretta K. Barsamian

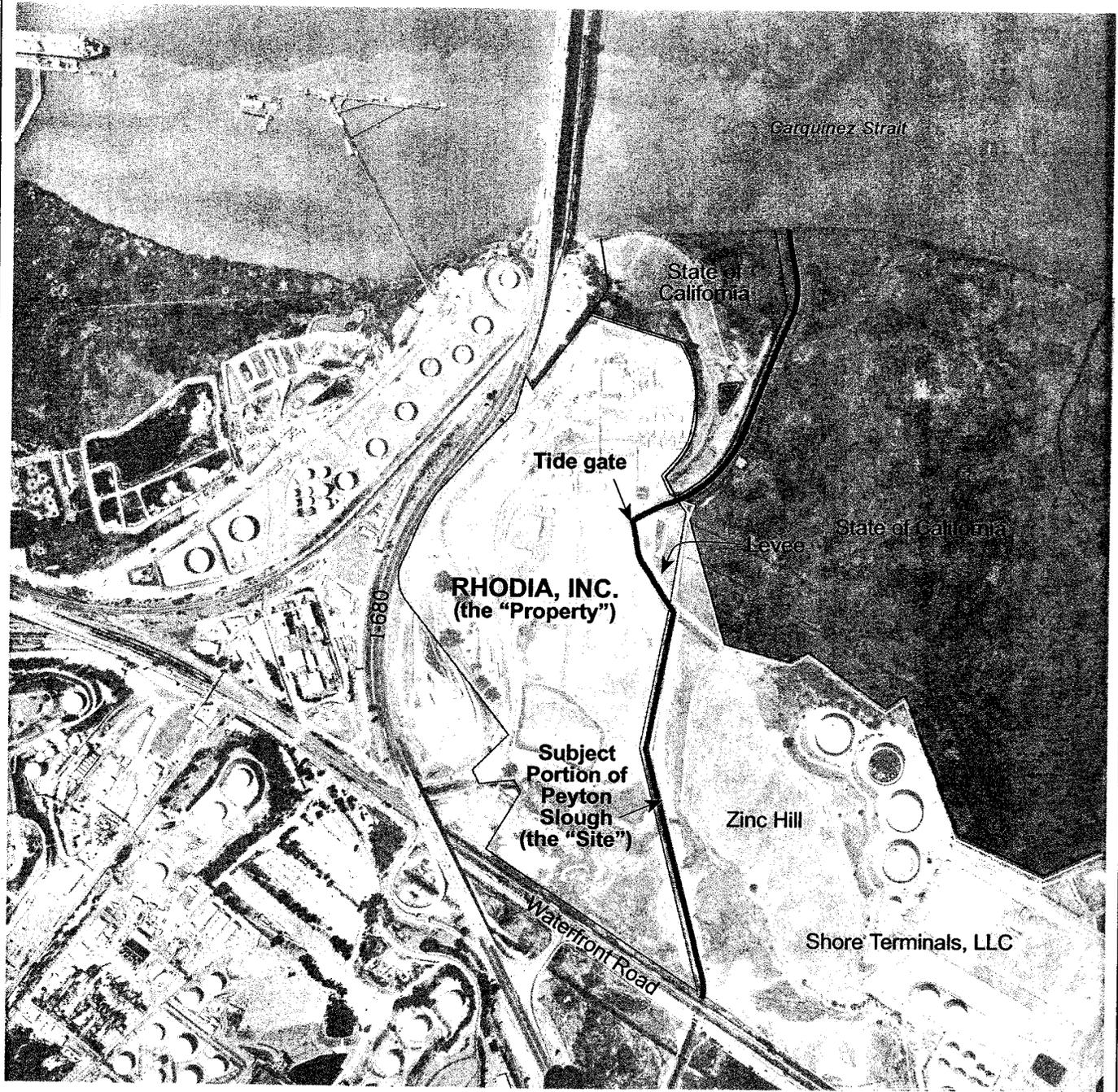
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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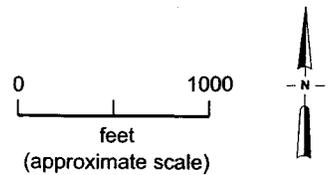
Attachments:
Figure 1- Site Map
Self-Monitoring Program



Reference: 2000 Aerial Photo

LEGEND

-  Rhodia (the "Property")
-  Shore Terminals
-  State of California (State Lands)
-  Peyton Slough



URS	Rhodia Martinez Peyton Slough	PROPERTY AND SITE LOCATION MAP	Figure 1
	Project No. 51-00070007.00		

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

SELF-MONITORING PROGRAM FOR:

**RHODIA INC.
MARTINEZ FACILITY
PEYTON SLOUGH PROJECT**

for the property located at

**100 MOCOCO ROAD
MARTINEZ
CONTRA COSTA COUNTY**

1. **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 01-094 (site cleanup requirements).

2. **Monitoring:** The discharger shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following table: (Wells and analytical methods are to be proposed by the discharger in accordance with Task 1 of this Order.)

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
TBP	quarterly	TBP	TBP	quarterly	TBP
TBP	quarterly	TBP	TBP	quarterly	TBP
TBP	quarterly	TBP	TBP	quarterly	TBP
TBP	quarterly	TBP	TBP	quarterly	TBP
TBP	quarterly	TBP	TBP	quarterly	TBP

TBP: To Be Proposed by Discharger per Task 1

The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Quarterly Monitoring Reports:** The discharger shall submit quarterly monitoring reports to the Board no later than 30 days following the end of the quarter (e.g. report for first quarter of the year due April 30). The first required quarterly monitoring report shall be due on February 28, 2002. Additional quarterly reports shall comply with the following schedule.

Quarter	Months Covered	Report Due Date
First Quarter	January, February, March	May 30 th
Second Quarter	April, May, June	August 30 th
Third Quarter	July, August, September	November 30 th
Fourth Quarter	October, November, December	February 28 th

Each quarterly reports shall include:

- a. **Transmittal Letter:** The transmittal letter shall identify and discuss any violations of the Order and/or the Self-Monitoring Program during the reporting period and actions taken or planned to correct the problem. A detailed description of the violation and the actions taken or planned to correct the violation shall be further described in the body of the monitoring report. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.
 - b. **Groundwater Elevations:** Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map shall be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the fourth quarterly report each year.
 - c. **Groundwater Analyses:** Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).
 - d. **Groundwater Extraction:** If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the fourth quarterly report each year.
 - e. **Status Report:** The quarterly report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following quarter.
4. **Violation Reports:** If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.
 5. **Other Reports:** The discharger shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to

cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping:** The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.
7. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on August 15, 2001.



Loretta K. Barsamian

Executive Officer