

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE ORDER

UPDATED WASTE DISCHARGE REQUIREMENTS AND RESCISSION OF
ORDER NO. 97-121

RHODIA INC.
MARTINEZ FACILITY
MARTINEZ, CONTRA COSTA COUNTY

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

FACILITY OWNERSHIP AND LOCATION

1. Rhodia Inc., (hereinafter called Discharger) presently owns and operates the Martinez Facility, a sulfuric acid regeneration facility (hereinafter called the Facility). In January 1998 Rhodia Inc. took ownership of the Facility from Rhone-Poulenc Inc., assuming the rights and responsibilities associated with the environmental permits for the Facility.
2. The Facility is a 114-acre plant located at 100 Mococo Road in Martinez, immediately southeast of the Benicia Bridge which crosses the Carquinez Strait (Figure 1). Approximately ten acres immediately adjacent to the Strait is owned by the State of California, and administered by the State Lands Commission.
3. Rhone-Poulenc Inc. owned and operated the Facility from 1988 to 1997.
4. Stauffer Chemical Company owned and operated the Facility from 1968 to 1988.
5. From 1899 to 1903 Mountain Copper Company (MOCOCO) constructed, and from 1903 to 1966, operated a copper refinery and a fertilizer plant at the site. MOCOCO owned the property until 1968.

PURPOSE OF ORDER UPDATE

6. The primary objectives of this Order are to: 1) update Findings to reflect changed conditions since 1997, 2) update the Facility's Self-Monitoring Program, and 3) reflect the changed ownership of the Facility. Waste Discharge Requirements for this Facility have been established for the operation, maintenance, and monitoring of the Facility's surface impoundments, and Class B Mining Waste leachate collection and removal system.

FACILITY DESCRIPTION AND HISTORY

7. From 1899 to 1968, MOCOCO owned and/or operated a copper smelter at the site. Large piles of mineral processing and beneficiation wastes (primarily copper smelting slag and cinders from the roasting of pyrite ores) accumulated on site. The size and weight of these piles caused them to subside into the soft Bay Mud.

In 1968, Stauffer Chemical Company assumed ownership of the Facility and began construction of the current acid plant, where various strengths and grades of sulfuric acid are produced. Stauffer undertook the removal of the accumulated cinder/slag piles until 1976, when groundwater was encountered. Today, the remnants of the piles are present as underground “cinder/slag bodies” up to 40 feet below grade. Precipitation infiltration and/or groundwater that come into contact with the mining wastes generate a leachate rich in iron and zinc.

In 1972, Stauffer Chemical Company installed a leachate extraction and storage system designed to prevent cinder/slag body leachate from entering nearby Carquinez Strait and wetlands. The system included a series of sumps to lower the leachate levels in the cinder/slag bodies and two solar evaporation surface impoundments to contain the leachate on site. In 1985, the Water Board requested a hydrogeologic investigation for the entire site, pursuant to the Toxic Pits Cleanup Act of 1984, and subsequently ordered the two surface impoundments closed (accomplished in 1995-96). In 1989, the next Facility owner, Rhone-Poulenc, modified the on-site treatment facility, the Process Effluent Purification (PEP) Plant, to treat cinder/slag body leachate as well as process water and storm water runoff. The PEP Plant treatment process removes metal constituents using sodium hydroxide precipitation in two stages primarily to remove zinc and iron.

The slag and cinder wastes that comprise the underground cinder/slag bodies are classified as mineral processing and beneficiation wastes. The Department of Toxic Substances Control agreed in 1994 that the underground cinder/slag bodies are exempt from regulation as hazardous waste management units. The Water Board has classified the cinder/slag bodies as **Class B mining waste** under Title 27 of the California code of Regulations.

8. The Facility contains four active (WMU-3, 4, 5, and 6) and three (WMU-1, 2, and 7) closed waste management units as described below (Figure 2).
 - a. **Cinder/Slag Bodies (WMU-1 and -2)**

MOCOCO stored at the site large quantities of slag and cinder, classified as Class B Mining Waste. The mining waste was discharged primarily to two massive piles located in the north and south of the plant operations on Bull’s Head Point. The majority of the mining waste was removed from the site, however some remains below the water table due to subsidence of the massive mining waste piles. The resulting subsurface cinder/slag bodies are referred to as the North Cinder/Slag Body and the South Cinder/Slag Body.

i. **North Cinder/Slag Body (WMU-1)**

Subsequent to the removal of the exposed mining waste in the north portion of the site, the property owner Rhone-Poulenc capped the remaining mining waste with a minimum of two-feet of low permeability soil in 1978. The resulting North Cinder/Slag Body is 8.3 acres, located in the northern most point of the site, between the operations area on Bull's Head Point and the Carquinez Strait on land owned by the State Land Commission. It is estimated that approximately 235,000 cubic yards of mining/waste remain below the cap, ranging in thickness from a trace to 37 feet below the 1988 ground surface.

In 1971-72, when it was observed that leachate from the North Cinder/Slag Body was flowing toward the Carquinez Strait, Stauffer Chemical Company installed a slurry cutoff wall and leachate collection and recovery system (LCRS). The slurry wall consists of 2- foot wide trench filled with puddled and compacted Bay Mud, ranging in depth from 9 to 12 feet below the ground surface. The slurry wall spans approximately 400 linear feet of the North Cinder Slag Body, along the Carquinez Strait waterfront, beginning at its eastern edge, but does not span the entire border between Carquinez Strait and the Cinder/Slag Body (Figure 2). The LCRS is comprised of a French Drain located immediately upgradient and alongside, of the slurry wall, connected to recovery sump S-24. Leachate from the east end of the North Cinder/Slag Body is collected in recovery sump S-28. Beginning in 1990, the leachate has discharged to the PEP Plant for treatment. Groundwater in the western portion of the North Cinder/Slag Body would flow toward the Carquinez Strait; however the LCRS is operated to create enough drawdown to eliminate migration of leachate past the slurry wall toward Carquinez Strait. Similarly, in the eastern portion of the North Cinder/Slag Body, groundwater would flow toward the wetlands bordering Carquinez Strait and the Peyton Slough wetlands if not for the LCRS which is operated to create enough drawdown to eliminate migration of leachate out of the permeable slag to the wetlands.

ii. **South Cinder/Slag Body (WMU-2)**

The exposed mining waste was removed from the pile in the south portion of the site in 1980, and capped with a minimum of two-feet of low permeability soil. It is estimated that 287,000 cubic yards of mining waste remain on 7.1 acres, ranging in thickness from trace to about 40 feet below the 1988 ground surface. Stauffer Chemical Company installed an LCRS consisting of two leachate sumps, S-25 and S-29 (no French Drain). The leachate removed from these sumps is discharged to and treated at the PEP Plant. Groundwater from this area flows toward the wetlands to the east; however the LCRS is operated to create enough drawdown to eliminate migration of leachate toward the wetlands. Additionally, as an integral part of the Peyton Slough remediation project, Rhodia installed an engineered containment berm to ensure storm water runoff from the operations areas

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of the facility are separated from the wetlands (Figure 2 illustrates approximate location), and the Bay Mud fill of the old Peyton Slough channel acts as a slurry wall along the eastern perimeter of the facility.

Waste management units 1 and 2 are areas with concentrated mining waste, however mining waste is nearly ubiquitous in the facility where it was used as fill and in foundations for structures, including some surface impoundments.

b. **Former Solar Evaporation Ponds (WMU-6 and -7)**

Prior to construction of the PEP Plant, two lined evaporation surface impoundments were used to store the leachate from the cinder/slag bodies, designated Pond 1 and Pond 2. The leachate, contaminated with metals and of low pH, was pumped from S-24, S-28, S-25, and S-29 to the surface impoundments. The leachate stored in the ponds was classified as hazardous and regulated under the Toxic Pits Cleanup Act. These two ponds were subsequently clean closed.

i. **Storm Water Accumulation Pond (WMU-6, former Pond 1)**

Pond 1 is located in the southern portion of the site and is therefore referred to as the South Pond and more recently as the Storm Water Accumulation Pond. In accordance with the Water Board approved closure plan, the sludges and liner were removed. In 1995, Pond 1 was transformed to a storm water runoff control surface impoundment; lined with high density polyethylene liner, it stores surface water runoff collected in sumps throughout the non-operations portions of the Facility. According to the Facility's NPDES permit a water quality assessment is performed prior to discharge. Based on the results the water is sent to the PEP plant for treatment or diverted to T-28 for additionally treatment, with eventual discharge to Carquinez Strait under the facility's NPDES permit (Figures 3 and 4 detail the treatment process and location of surface impoundments within the waste water stream). The current Operation and Maintenance Plan (1998) stipulates that sludges are removed from the storm water accumulation pond as needed, and the liner is inspected at this time.

ii. **Pond 2 (WMU-6)**

In 1995, Pond 2, the north-most of the two solar evaporation ponds, was clean closed in accordance with a Water Board approved closure plan. The liner and sludges were removed and disposed of offsite. Potential impacts to subsurface soils and groundwater beneath the surface impoundment were investigated, prior to back filling and covering with compacted soil.

c. **Utility/Spill Control Pond (WMU-3)**

This active Class II surface impoundment occasionally collects designated waste of potentially low pH and elevated metal concentrations, and is lined with a 40-mil Hypalon (chlorosulfonated polyethylene) liner overlying a 30-mil Hypalon liner. Installed in 1971, the Utility Spill Control Pond is located on State Lands

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Commission property, and is designed to contain potential spills from the Facility's storage tanks and loading areas, wastewater from the plant flare scrubber, excess NPDES system water, and storm water runoff from the loading area. The surface impoundment has a capacity of 670,000-gallons with the required 2 feet of freeboard, and discharges to a neutralization tank (T-28) for treatment (Figures 3 and 4). The current Operation and Maintenance Plan (1998) stipulates that sludges are removed the surface impoundment every five to six years as needed. At this time the liner is inspected and repairs are made as needed.

d. **Surge Pond (WMU-4)**

This active Class II surface impoundment stores designated waste of potentially low pH and elevated metal concentrations, and is lined with two 40-mil Hypalon liners overlying a 30-mil Hypalon liner. The Surge Pond has a capacity of 500,000-gallons with the required two-feet of freeboard. Water from the acid plant enters a 23,000-gallon fiberglass tank (T-28) which is situated in the middle of the Surge Pond, where sodium hydroxide and aluminum sulfate are added to raise the pH to about 3.5 or higher. Tank T-28, is regulated under the Tier Permitting Program by DTSC as a Conditionally Authorized unit. After pretreatment in T-28, the water overflows into the Surge Pond. Liquids from the Surge Pond are discharged to T-21 (13,000-gallon tank) for further treatment (Figures 3 and 4). The current Operation and Maintenance Plan stipulates that Surge Pond sludges are removed every four to five years as needed. The liner is inspected and repairs are made at this time.

e. **Settling Pond (WMU-5)**

This active Class II surface impoundment is the last element in the wastewater treatment stream, and is lined with two 40-mil Hypalon liners overlying a 30-mil Hypalon liner. These three liners are currently of questionable integrity. Provision 13 of this Order requires the Discharger add an additional liner to the settling pond. The Settling Pond has a capacity of 630,000-gallons with the required 2 feet of freeboard, and is a waste water effluent clarifying pond, receiving wastewater discharged from Tank T-21. The final effluent is discharged to the Carquinez Strait under Water Board NPDES Permit No. CA 0006165 (Figures 3 and 4). The Settling Pond is divided into three sections of varying volume to enhance settling. The non-hazardous pond sludge is removed every year or as needed. The liner is inspected and repaired as necessary at this time.

9. The current Self-Monitoring Program includes monitoring wells installed around the waste management units to monitor the shallow and intermediate groundwater to detect potential impacts on groundwater.

WASTE DISCHARGE REQUIREMENTS AND RELATED ORDERS

10. Currently active Waste Discharge Requirements Order No. 97-121 rescinded Waste Discharge Requirements Order Nos. 88-080 and 91-166 and required Rhone-Poulenc to complete the following:

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- a. Submit a Workplan to investigate metal contamination found in Peyton Slough sediments adjacent to the Facility;
 - b. Submit a leak or spill contingency plan;
 - c. Submit an operations and maintenance plan;
 - d. Submit periodic LCRS system reports;
 - e. Maintain a financial assurance instrument; and
 - f. Submit a post earthquake inspection and corrective action plan.
11. Waste Discharge Requirements Order No. 88-080 were adopted on May 18, 1988. The Water Board adopted Cease and Desist Order No. 88-174 on December 21, 1988 for violations to Order No. 88-080 and the Toxic Pits Cleanup Act, which required Rhone-Poulenc to cease placing or storing hazardous waste in Pond 1 and Pond 2. Order No. 91-166 amended the compliance schedule associated with Order No. 88-174.
12. The Facility's process water and storm water is regulated with Waste Discharge Requirements under the National Pollution Discharge Elimination System (NPDES) Permit CA 0006165, Order No. 2004-0042.
13. The Water Board adopted Site Cleanup Requirements Order No. 01-094 to require Rhodia Inc. to cleanup sediment contamination in Peyton Slough and surrounding wetlands. The Peyton Slough Remediation Project consisted of excavating a new alignment for Peyton Slough in uncontaminated soils within the wetland east of the old alignment. The old alignment was capped to grade with low permeability Bay Mud. A new tide gate was installed in the new Peyton Slough by Rhodia for flood control. Construction for the project completed in November 2007. Post remediation monitoring of groundwater, Peyton Slough sediments and surface water, and wetland revegetation will continue under Water Board oversight for 10 years under the Facility's 401 Certification Order No. R2-2002-0115.

GEOLOGICAL SETTING

14. 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 Quarternary Bay Muds, sand, 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, which has been classified as Class B mining waste. Cinders and slag was previously piled at the site, sank into the Bay Mud sequence, and remains buried.

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The Discharger's offices and other facilities are located on a low-lying northwest trending outcrop of bedrock, which form a low hill behind the offices. The Facility is located on an adjoining northeast trending outcrop of bedrock, known as Bull Head's Point, which drops steeply, approximately 60 feet vertically, on three sides. The eastern and northeastern portions of the site are historical wetlands bordered on the east by more wetlands and on the North by the Carquinez Strait.

Two distinct bedrock units exist throughout the site. The oldest formation is the Cretaceous Panoche Formation, consisting of claystones, siltstones, and minor sandstones. The second bedrock unit is the Paleocene Martinez Formation, consisting of claystone, siltstone, and minor sandstones, with sandstone and conglomerate phases of the Martinez Formation occurring to the south, offsite.

Unconsolidated Quaternary sediments consisting of Bay Mud that include peats and occasional occurrences of sand lenses are found at the site. The Bay Mud is predominantly soft, dark colored, clay rich sediment that has low hydraulic conductivity. The peats are predominantly located in the southern half of the site, and are dark colored and soft. Sand lenses deposited by Peyton Slough and the Sacramento and San Joaquin Rivers through Carquinez Strait are found in the northern half of the site. The sand deposits are fine to medium grain; olive-grey colored, and are bedded between one inch to three feet.

SEISMICITY

15. The Facility is located within three seismically active zones, expressed on the surface as the Franklin, South Hampton, and Green Valley-Concord faults. The active San Andreas Fault is located approximately 33 miles west of the site. It has been estimated that the maximum peak bedrock acceleration of 0.59g will occur from a Richter magnitude 7.0 maximum credible earthquake along the Green Valley-Concord Fault located about two miles from the site.

The Alquist-Priolo Act fault-rupture hazard zone map published by the Division of Mines and Geology in 1977 shows no faulting within one mile of the site. However, according to Rhone-Poulenc's 1990 *Report of Waste Discharge* for the site, three small inactive, pre-Quaternary thrust faults are located at the site. None of the inactive faults pass within 200 feet of a waste management unit.

SURFACE WATER AND SLOUGH SEDIMENTS

16. The Facility and surface impoundments are situated adjacent to wetlands and Peyton Slough located to the east, and Carquinez Strait to the north. The wetlands are immediately adjacent to the settling pond at the closest. Carquinez Strait is immediately adjacent the North Cinder/Slag Body at the closest.
17. In 1997, the former Peyton Slough alignment was classified as a Toxic Hot Spot after sediments were collected, chemically analyzed, and evaluated for toxicity by the Water Board as part of the statewide Bay Protection and Toxic Cleanup Program. Rhodia

eliminated the risk of exposure to these sediments through corrective action required by Order No. 01-094 (see Finding 13).

HYDROGEOLOGY

18. The Facility is located in the 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 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 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 ground surface in low lying areas. Groundwater flow in the Facility is predominantly controlled by topography. 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:

- a. **Water Table Unit**

The water table unit comprises the shallowest saturated zone beneath the site. The unit is most pronounced in the southern portion of the site, and is comprised of fill, Bay Mud, and peats. The slope of the potentiometric surface near the North Cinder/Slag Body is toward Carquinez Strait and the Peyton Slough wetlands. Near the Carquinez Strait waterfront the groundwater flow direction is toward sump S-24 of the LCRS, east of the waterfront area groundwater flow is toward sump S-28 of the LCRS. Groundwater flow direction near the South Cinder/Slag Body is toward sumps S-25 and S-29 of the LCRS. The slope of the potentiometric surface near the Facility's surface impoundments and elsewhere is generally toward the wetlands.

- b. **Bedrock Unit**

The bedrock unit is a collage of several chrono-stratigraphic units and is structurally complex. Monitoring wells in this unit are screened in three sub-units of the Upper Cretaceous Panoche Formations and possibly the Upper Member of the Paleocene Martinez Formation. The unit is comprised of both confined and unconfined aquifers. The overall groundwater flow direction is away from Bull's Head Point and other topographic highs toward low lying areas of the site. This translates to a southeast groundwater flow direction toward the wetlands beneath the southern half of the site, and a north direction toward Carquinez Strait beneath the northern half of the site.

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c. Intermediate Unit

The intermediate unit is comprised of irregularly distributed lenses of peat and peaty-sands or muds deep within the alluvium. It is found beneath the low-lying portions of the site, particularly beneath and adjacent to the former evaporation ponds.

19. Groundwater at the site has been impacted by the historic Class B mining wastes, particularly within the water table unit. Groundwater monitoring in the water table unit in 2007 indicate that the following constituents have exceeded proposed Water Quality Standards for the site (Maximum Contaminant Levels) and Surface Water Screening Levels for Estuarine Habitat:

2007 Maximum Dissolved Metal Concentrations in Groundwater

Constituent	Highest Concentration (mg/L)	Drinking Water Standard (mg/L)	Surface Water Screening Levels – Estuary Habitat* (mg/L)
Iron	230	0.30 (secondary)	Not Listed
Nickel	0.52	0.10	0.0082
Zinc	200	5.0 (secondary)	0.081
Cadmium	0.024	0.005	0.001
Copper	0.092	1.3	0.0031
Lead	0.011	0.015	0.0025
Arsenic	0.084	0.05	0.00014

* *Environmental Screening Levels* (San Francisco Bay Water Board, 2005)

MONITORING PROGRAMS

20. Groundwater

The Discharger conducts semi-annual groundwater monitoring for monitoring wells associated with the plant, and quarterly groundwater monitoring for monitoring wells associated with the Peyton Slough Remediation Project (the latter is a requirement of the Facility's Site Cleanup Requirements). All three hydrostratigraphic units are measured during the groundwater monitoring events.

The ubiquitous nature of the mining waste at the site requires the Detection Monitoring Program be based on a containment approach to ensure contaminants do not migrate off site. During the both semi-annual events, samples will be collected from 26 groundwater monitoring wells and analyzed for zinc and copper. Every five years, all constituents of concern (COCs) will be analyzed in the 26 groundwater wells (see attachment).

Groundwater monitoring associated with the Peyton Slough Remediation Project occurs quarterly pursuant to the Self-Monitoring Program established for the Facility's Site Cleanup Requirements. Samples are collected from eleven monitoring wells located immediately west of the old Peyton Slough alignment for the purpose of detecting discharges from the cinder/slag bodies or other potential sources of groundwater contamination from the Facility. Nine monitoring well clusters located immediately west of the new alignment of Peyton Slough are also monitored. The wells are screened in the shallowest water table (at approximately 4-feet bgs) and the deeper unit within the alluvial sequence (at approximately 15-feet bgs). These nine well clusters (18 wells) are monitored to gauge the success of the remediation project and to detect potential groundwater contamination near the new alignment.

21. Surface Water and Slough Sediments

Post remediation monitoring of Peyton Slough consists of collection of four water column and four sediment samples quarterly. Surface water samples are analyzed for dissolved copper and zinc concentrations, and pH is measured. Sediment samples are analyzed for total copper and zinc concentrations, and the pore water pH is measured. Results and an interpretation of surface water, sediment, and groundwater analyses are reported in a quarterly submittal to the Water Board per Order No. R2-2002-0115 (see Finding 20).

Storm water runoff from the Facility is collected in sumps, and the water is treated at the PEP plant prior to discharge if necessary, pursuant to the Facilities NPDES Order No. 2004-0042.

22. Facility Observations

The thickness of the settled solids is monitored quarterly in all surface impoundments except for the Settling Pond which is monitored daily. Surface impoundment liners are inspected approximately once every five years, except for the Settling Pond which is inspected approximately annually. Water level in sumps S-24, S-25, S-28 and S-29 are measured daily. The LCRS is inspected monthly. Provision 12 of this Order requires the

Discharger to update the Operations and Monitoring plant to inspect waste management units more frequently.

BASIN PLAN AND BENEFICIAL USES

23. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Board), U.S. EPA, and the Office of Administrative Law where required.
24. The existing beneficial uses of Peyton Slough as a tributary to Carquinez Strait are:
- a. Fish spawning;
 - b. Wildlife habitat;
 - c. Water contact recreation;
 - d. Non-contact water recreation;
 - e. Industrial service supply;
 - f. Ocean, commercial, and sport fishing;
 - g. Estuarine habitat;
 - h. Fish migration;
 - i. Preservation of rare and endangered species; and
 - j. Navigation.
25. The existing and potential beneficial uses of the groundwater:
- a. Municipal and domestic supply;
 - b. Industrial process and service supply;
 - c. Fresh water replenishment to surface waters; and
 - d. Agricultural supply.

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Due to the high total dissolved solids in the groundwater underlying the site, the groundwater is not considered a source of drinking water as specified under the Sources of Drinking Water Policy 88-63.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

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

NOTIFICATIONS AND MEETING

27. The Water Board has notified the Discharger and interested agencies and persons of its intent to update these Waste Discharge Requirements, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
28. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED pursuant to the authority in Section 13263 of the California Water Code (CWC), Title 27, Division 2, Subdivision 1 of the California Code of Regulations (27CCR), and Chapter 15, Division 3, Title 23 of the California Code of Regulations (Chapter 15) that the Dischargers, their agents, successors, and assigns shall meet the applicable provisions contained in 27CCR, Chapter 15, and Division 7 CWC, and shall comply with the following:

A. PROHIBITIONS

1. The discharge of "hazardous waste" at this Facility is prohibited. For the purposes of this Order, the term "hazardous waste" is as defined in Section 20164 of Title 27.
2. The discharge of leachate or wastewater (including from mining wastes, surface impoundments, process waters, and runoff from the plant operations areas) which: 1) have the potential to cause corrosion or decay, or otherwise reduce or impair the integrity of the containment structures; 2) if mixed or commingled with other wastes in the unit, could produce a violent reaction including heat, pressure, fire, explosion, or the production of toxic by-products; 3) require a higher level of containment than provided by the unit; 4) are "restricted hazardous wastes", or 5) impair the integrity of the containment structures, are prohibited per Section 20200(2)(b) of Title 27.
3. The discharge of pollutants from the mining wastes or surface impoundments onto land, into groundwater or surface water is prohibited.
4. The discharge of wastewater from washing truck engine compartments and pipe flushing maintenance operations to a surface impoundment is prohibited if wastewater from the

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operations exceeds hazardous waste criteria. The washing of truck cabs and the exterior of trucks are permitted, provided the wastewater is directed to the Class II surface impoundment via an oil/water separator or similar oil removal process.

5. There shall be no discharges to a surface impoundment, and any residual liquids and sludge shall be removed expeditiously if it is determined the surface impoundment is leaking or there is a failure which causes a threat to water quality.
6. Neither the treatment, discharge, nor the storage of waste shall create a condition of pollution, contamination or nuisance as defined in Section 13050 of the CWC.
7. Wastes shall not be disposed in any position where they migrate from the disposal site to adjacent geologic materials, waters of the State or of the United States during disposal operations, closure, and during the post-closure maintenance period, per Section 20310(a) of Title 27.
8. Activities associated with subsurface investigation and cleanup that will cause significant adverse migration of pollutants are prohibited.
9. The Discharger, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the Facility as the result of operation of a surface impoundment or mining wastes:

- a. Surface Water

- i. Floating, suspended, or deposited macroscopic particulate matter or foam;
- ii. Bottom deposits or aquatic growth;
- iii. Adversely altered temperature, turbidity, or apparent color beyond natural background levels;
- iv. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
- v. Toxic or other deleterious substances 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

- i. The groundwater shall not be degraded as a result of the waste disposal operations;

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- ii. Migration of pollutants through subsurface transport to waters of the State is prohibited; or
- iii. Untreated leachate shall not be discharged to waters of the State or the United States.

c. Wastewater

- i. Wastewater collected within the surface impoundments shall not be discharged to waters of the State except in accordance with the Facility's NPDES Permit.

B. SPECIFICATIONS

Surface Impoundment and Mining Waste Containment Specifications

1. Title 27, Section 20310, requires that Class II surface impoundments be designed and constructed to prevent migration of wastewater from the impoundment to adjacent geologic materials, groundwater, or surface water during operations, closure, and the post-closure maintenance periods.
2. Title 27, Section 22490, requires that Class B mining wastes be contained to prevent migration of leachate to adjacent geologic materials, groundwater, or surface water during operations, closure, and the post-closure maintenance periods.
3. Surface impoundments must be designed to isolate wastewater from Waters of the State pursuant to Title 27, Section 20250(b). This is accomplished by a low permeability liner.
4. The containment system and LCRS must be designed to isolate leachate from the Water of the State pursuant to Title 27, Section 22490.
5. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.
6. Surface impoundments will be operated such that scouring by wave action at the water line will not degrade the surface impoundment lining.
7. The Discharger shall operate the LCRS such that a minimal amount of leachate remains within the system. The LCRS shall be designed and operated to function without clogging (Section 20340 of Title 27), shall be inspected monthly, and any accumulated fluid shall be removed. Extracted wastewater from the mining waste sumps and surface impoundments shall be transported to the PEP plant for treatment if needed.
8. The existing containment, drainage, and monitoring systems at the Facility shall be maintained as long as the wastes and leachate pose a threat to water quality. The Discharger shall continue the water quality monitoring program, pursuant to Section 20410 of Title 27, as long as the threat of a release from surface impoundments exists.

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9. The Discharger is required to maintain asphalt in the Facility to ensure that they remain impervious.
10. The Discharger shall remediate soil and water contamination, which actually or threatens to degrade water quality or adversely affect the beneficial uses of the waters of the State.
11. The pipeline discharge to the surface impoundments shall be equipped with devices, or fail-safe operating procedures, to prevent overfilling.
12. The Storm Water Accumulation Pond shall be operated to accommodate the precipitation of a 24-hour storm with a 100-year return frequency. It shall have sufficient freeboard to accommodate seasonal precipitation and precipitation conditions specified, but in no case less than **two feet (vertical)** of freeboard, and shall be operated to prevent overtopping as a result of wind conditions likely to accompany such precipitation conditions.
13. Surface impoundments shall be protected from any washout or erosion of wastes from inundation, and shall have in no case less than **two feet (vertical)** of freeboard, and shall be operated to prevent overtopping as a result of wind conditions.
14. Section 20370 of Title 27 requires the Discharger ensure that all engineered structures (including, but not limited to, containment structures) of any part of the surface impoundments and mining waste containment structures shall have a foundation capable of: 1) providing support for the structures; 2) withstanding hydraulic pressure gradients; and 3) preventing failure due to settlement, compression, or uplift and all effects of ground motions including the maximum credible earthquake event. The surface impoundments were constructed in 1971 before this regulatory requirement was established, and may not meet this requirement. The surface impoundments have not been significantly impacted by earthquakes since their construction and groundwater monitoring results do not indicate the surface impoundments have adversely impacted groundwater. Therefore the current surface impoundments will not require a retrofit to achieve this requirement; however any new surface impoundments must meet current Title 27 requirements in this regard.
15. The materials used for containment structures shall have appropriate chemical and physical properties to ensure the containment of wastes at all times. Liner permeabilities shall be determined relative to the liquids contained in the respective impoundments and shall be determined by appropriate test methods in accordance with accepted civil engineering practice.
16. Surface impoundments and mining waste containment structures shall be designed, constructed, and operated to withstand ground accelerations associated with the maximum credible earthquake without damage to the foundation, the containment structures, or other structures which control wastewater, surface drainage, or erosion.
17. Surface impoundments shall be operated such that scouring at points of discharge and by wave action at the water line will not degrade the lining.

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18. Surface impoundment and mining waste containment structures shall be maintained to preclude failure as a result of potential rapid geologic changes.
19. Containment, drainage, and monitoring systems at the Facility shall be maintained as long as the wastes pose a threat to water quality. The Discharger shall continue the water quality-monitoring program, pursuant to Sections 20410 and 22500 of Title 27, as long as a threat of a release from surface impoundments and mining wastes exists.
20. The Discharger shall operate surface impoundments and mining wastes so as to isolate wastewater from waters of the State and to prevent a statistically significant monitoring parameter concentration from existing in the waters passing through points of compliance, as defined in Section 20405 and 20420 in Title 27. The Discharger shall operate surface impoundments and mining waste containment systems so as to not exceed the concentration limits of the Self-Monitoring Program.
21. The Discharger shall operate surface impoundments and mining waste containment systems according to a detailed operating and contingency plan, which will include at a minimum, procedures for routine inspection of surface impoundments and LCRS, discharge into an impoundment, discharge out of an impoundment and LCRS, contingency measures if wastewater or leachate is detected or problems with the containment structures are found, investigations of the impact of released from the surface impoundment, and notifications of agencies.
22. During the active life of the surface impoundments, the settled solids shall be removed from surface impoundments periodically, but at least once every five years except for the Settling Pond which shall be dredged annually. An inspection shall be made of the liner system when solids are removed to assure there is no damage prior to refilling the impoundment. Provision 12 of this Order requires the Discharger to update the Facility's Operations and Maintenance Plan, including planned removal of settled solids from surface impoundments.

General Specifications

23. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California professional geologist, or certified engineering geologist.
24. 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.
25. The Water Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the active life and post-closure maintenance period.

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26. The Discharger shall implement any Self Monitoring Program issued by the Executive Officer. The purpose of the Self Monitoring Program is to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from surface impoundments, mining waste, or any unreasonable impairment of beneficial uses associated with the Facility's past or present activities.
27. Leachate collection and removal systems shall be designed and operated to function without clogging through the scheduled maintenance/closure of the waste management unit and during the post-closure maintenance period. The systems shall be tested at least **monthly** to demonstrate proper operation. The results of the test shall be compared with earlier tests made under comparable conditions. These results shall be submitted to the Board in the Facility's Self-Monitoring Report (see Provision 10).
28. The Discharger shall install any additional groundwater and leachate monitoring devices required to fulfill the terms of any future Self-Monitoring Program issued by the Executive Officer.
29. The Water Board shall be notified immediately of any waste containment system failures occurring at the site. Any failure, which potentially compromises the integrity of containments structures, shall be promptly corrected after approval of the method and schedule by the Executive Officer.
30. The Discharger shall notify the Water Board **at least 180 days** prior to beginning any intermediate or final closure activities. This notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.
31. Closure of all waste management units shall be in compliance with the requirements of Section 21400, Title 27.
32. If the Water Board determines that any surface impoundment or waste containment facility is polluting or threatening to pollute State waters, the Water Board may require the Discharger to immediately cease the discharge.
33. 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.
34. All borings for monitoring wells shall be continuously cored, and the cores shall be archived for no less than 90 days. 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 Water Board upon completion of the wells.

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35. All samples shall be analyzed by State-certified laboratories, or laboratories accepted by the Water Board, using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Water Board review. This provision does not apply to analyses that can only be reasonably performed onsite (e.g. pH).
36. If it is determined, based on groundwater monitoring information in accordance with Section 20385 of Title 27, that water quality impairment outside of any surface impoundment or waste disposal area is not improving or continues to degrade, the Discharger may be required to submit additional site specific groundwater corrective action proposals.
37. At any time, the Discharger may file a written request (including appropriate supporting documents) with the Executive Officer, proposing appropriate modifications to the Self Monitoring Program.

C. PROVISIONS

Compliance

1. The Discharger shall comply immediately, or as prescribed by the time schedule below, with all Prohibitions, Specifications, and Provisions of this Order. All required submittals must be acceptable to the Executive Officer. Violations may result in enforcement actions, including Water Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these Waste Discharge Requirements by the Water Board [CWC Sections 13261, 13267, 13263, 13265, 13268, 13300, 13301, 13304, 13340, and 13350].
2. All technical and monitoring reports required by this Order are requested pursuant to Section 13267 of the CWC. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to Section 13268 of the CWC.

Reporting Requirements

3. Technical reports/plans, submitted by the Discharger, in compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be submitted to the Water Board on the schedule specified herein. These reports/plans shall consist of a letter report that includes the following:
 - a. Identification of any obstacles that 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

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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 self-monitoring reports, an evaluation of the current groundwater monitoring system and a proposal for modifications as appropriate.
4. All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:
 - a. For a corporation – by a principle executive officer or the level of vice-president or an appropriate delegate.
 - b. For a partnership or sole proprietorship – by a general partner or the proprietor, respectively.
 - c. For a municipality, state, federal, or other public agency – by either a principle executive officer or ranking elected official.
5. All reports submitted pursuant to this Order must be submitted as electronic files in the PDF format. The Board has implemented a document database which is intended to reduce the need for printed report storage space and streamline the public review process. Documents in the database may be viewed, and print copies made, by the public, during file reviews conducted at the Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures and tables.

All electronic files, whether in PDF or spreadsheet format must be submitted via the Boards file transfer protocol (FTP) site, email (only if the file size is under 1MB), or on CD. Email notification should be provided to Board staff whenever a file is uploaded to the FTP site.

6. The State Board recently adopted regulations requiring electronic report and data submittal to the State's GeoTracker database (Title 23, Division 3, Chapter 30, Articles 1 and 2, Sections 3890-3895 of the CCR). The text of the regulations can be found at: http://www.waterboards.ca.gov/ust/cleanup/electronic_reporting/docs/final_electronic_regs_dec04.pdf

The Discharger is responsible for submitting the following via internet;

- a. All chemical analytical results for soil, water, and vapor samples;
- b. The latitude and longitude of any permanent sampling point for which data is reported, accurate to within 1 meter and referenced to a minimum two reference points from the California Spatial Reference System, if available;

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- c. The surveyed elevation relative to a geodetic datum of any permanent sampling point;
 - d. The elevation of groundwater in any permanent monitoring well relative to the surveyed elevations;
 - e. A site map or maps showing the location of all sampling points;
 - f. The depth of the screened interval and the length of screened interval for any permanent monitoring well;
 - g. PDF copies of boring logs; and
 - h. PDF copies of all reports, workplan and other documents (the document, in its entirety [signature pages, text, figures, tables, etc.] must be saved to a single PDF file) including the signed transmittal letter and professional certification by a California Licensed Civil Engineer or a Registered Geologist.
7. Upon request, monitoring results shall also be provided electronically in Microsoft Excel® to allow for ease of review of site data, and to facilitate data computations and/or plotting that Water Board staff may undertake during the review process. Data tables submitted in electronic spreadsheet format will not be included in the case of file review and should therefore be submitted on CD and included with the hard copy of the report. Electronic tables shall include the following information;
- a. Well designations;
 - b. Well location coordinates (latitude and longitude);
 - c. Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, screen interval elevation, and a characterization of geology of subsurface the well is located in);
 - d. Groundwater depths and elevations (water levels);
 - e. Current analytical results by constituent of concern (including detection limits for each constituent);
 - f. Historical analytical results (including the past five years unless otherwise requested); and
 - g. Measurement dates.

Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order related to surface impoundments and mining waste, submitted by the Discharger, shall also be provided to the **Contra Costa County Health Department**.

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8. Evaluation of the Leachate Collection and Recovery System: The Discharger shall submit an evaluation of the effectiveness of the LCRS, and an assessment of any necessary improvements to ensure that it is creating enough drawdown to capture leachate and eliminate leachate migration from the North and South Cinder/Slag Body's past the points of compliance. The Discharger shall submit a report acceptable to the Executive Officer detailing the findings of this evaluation and propose necessary changes to the Operations and Maintenance Plan and/or Self Monitoring Program. The report shall include but not necessarily be limited to:
 - a. As-Built construction design of each LCRS.
 - b. An evaluation of system performance, demonstrating that all leachate collection and recovery systems are containing and extracting polluted groundwater.

REPORT DUE DATE: April 30, 2009

Self Monitoring Program

9. Self Monitoring Program: The Discharger shall comply with the Self-Monitoring Program attached to this Order (Parts A and B) and as may be amended by the Executive Officer. The approved Self Monitoring Program constitutes a Detection Monitoring Program pursuant to Title 27, Section 20420, intended to identify water quality impacts from surface impoundments and mining waste. The attached Self Monitoring Program may be amended as necessary at the discretion of the Executive Officer.
10. Self-Monitoring Program Reporting: The Discharger shall submit semi-annual monitoring reports no later than **May 30th** and **November 30th** of each year in accordance with the attached updated Self-Monitoring Program (Attachment A). As part of the **November 30th** report, the Discharger shall submit an annual monitoring report. The annual report to the Water Board shall cover the previous calendar year as described in Part A of the updated Self-Monitoring Program.

The Discharger shall inspect the LCRS monthly which shall be documented in the annual monitoring reports, demonstrating that the LCRS is functioning properly. Annual reports shall also include the volume of leachate removed from the LCRS and a description of repairs.

The Discharger shall annually inspect all surface impoundments. The annual monitoring reports shall document the inspections, demonstrate the liners and containment structures are functioning properly, detail the amount of solids removed from the surface impoundments, and describe any repairs.

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REPORT DUE DATES: 1st SEMI-ANNUAL REPORT
– May 30th of each year

-2nd SEMI- ANNUAL REPORT & ANNUAL REPORT
– November 30th of each year

11. Develop Concentration Limits: The Discharger shall propose concentration limits to be used at points of compliance (POCs) as part of the Detection Monitoring Program (see G.3 of attachment). Concentration Limits will be developed using historic data of each POC monitoring well, and must be approved by the Executive Officer. Wells with insufficient data to develop a Performance Based Concentration Limit (PBCL) will be monitored quarterly (reported in the semi-annual self-monitoring reports (see Provision 10) for five years, or until sufficient data has been collected to develop a reliable value.

REPORT DUE DATE: 60 days after approval of this Order

12. Operation and Maintenance Plan: The Discharger shall submit an operation and maintenance plan, acceptable to the Executive Officer, including, but not necessarily limited, to the following:
- a. The scheduled periodic removal of surface impoundment sludge and the inspection of the liner/containment system;
 - b. The monthly measurement and recording of leachate levels and volumes removed from the leachate collection and removal system;
 - c. A contingency plan in the event of a leak or spill from a surface impoundment or mining waste;
 - d. A contingency plan for violations of the Title 27 freeboard requirement; and
 - e. A contingency plan for primary liner failure.

PLAN DUE DATE: November 15th, 2008

13. Settling Pond Liner: The Discharger shall install an additional 40-mil Hypalon or similar liner in the Settling Pond within **180 days** of approval of this Order. The new liner must be added directly to the deteriorating liner currently in place.
14. Closure Plan: The Discharger shall submit a Closure and Post-Closure Maintenance plan acceptable to the Executive Officer, as outlined in Title 27, section 21090-21200. This notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.

PLAN DUE DATE: 180 Days prior to closure

15. Financial Assurance Instrument: The Discharger shall maintain a Financial Assurance Instrument acceptable to the Executive Officer, pursuant to Section 22207 (a) of Title 27. The Closure Fund must provide sufficient funds to clean close the Class II surface impoundments and for the post-closure monitoring and maintenance of the site. For the purposes of planning the amount of the fund, the Discharger shall assume a post-closure period of at least 30 years. However, the post-closure maintenance period shall extend as long as the wastes pose a threat to water quality. The Discharger shall submit a report every five years that either validates the Instrument's ongoing validity or proposes and substantiates any needed changes (e.g., a documented increase in the monitoring system's ability to provide reliable early detection of a release can cause a decrease in the Instrument's financial coverage). In addition, the Financial Assurance instrument shall be updated annually based on inflation, and a brief report of these details shall be submitted.

The Discharger shall also submit a corrective action cost estimate for known or reasonably foreseeable releases pursuant to Title 27, Chapter 6, Article 4, Section 22220, and must demonstrate financial assurances for the cost of initiation and completing corrective action for all known or reasonably foreseeable releases.

REPORT DUE DATE: October 15th, 2008, and every five years thereafter and an update yearly.

16. Post Earthquake Inspection and Corrective Action Plan: The Discharger shall submit a detailed Post Earthquake Inspection and Corrective Action Plan acceptable to the Executive Officer, to be implemented in the event of any earthquake generating shaking of Richter Magnitude 6.5 or greater or within 30 miles of the Facility. The report shall describe the containment features, and groundwater monitoring facilities potentially impacted by the static and seismic deformations of the surface impoundments and waste containment systems. The plan shall provide for reporting results of the post earthquake inspection to the Water Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to any waste containment structures (surface impoundment, extraction system, etc.), the corrective action plan shall be implemented and the Water Board shall be notified of any damage.

PLAN DUE DATE: September 15th, 2008

17. Change in Discharge: In the event of a material change in the character, location or volume of a discharge, the Discharger shall file with the Water Board a new Report of Waste Discharge [CWC Section 13260]. A material change includes, but is not limited to the following:
- a. Addition of a major industrial waste discharge to discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste;

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- b. Significant change in disposal method, (e.g., change from a land disposal to a direct discharge to water), or change in the method of treatment which would significantly alter the characteristics of the waste;
- c. Significant change in the disposal area, (e.g., moving the discharge to another drainage area), to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems;
- d. Increase in flow beyond that specified in the Waste Discharge Requirements; and/or
- e. Increase in area or depth to be used for solid or liquid waste disposal beyond that specified in the Waste Discharge Requirements [CCR Title 23 Section 2210].

REPORT DUE DATE: 120 days prior to any material change

- 18. Document Availability: The Discharger shall maintain a copy of this Order at the Facility so as to be available at all times to project personnel [CWC Section 13263].
- 19. Maintenance of Devices: The Discharger shall maintain all devices or designated features installed in accordance with the Order such that they continue to operate as intended without interruption except as a result of failures that could not have been reasonably foreseen or prevented by the Discharger.
- 20. Change in Ownership: In the event of any change in control or ownership of the Facility presently 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 forwarded to the Water Board upon final change in ownership. To assume operation of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of this Order **within 30 days** of the change of ownership. The request must contain the requesting entity's full legal name, mailing address, electronic address, and telephone number of the persons responsible for contact with the Water Board. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC [CWC Section 13263 and 13267].
- 21. Order Revision: This Order is subject to Water Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Water Board's Basin Plan; or changes in the discharge characteristics. The Water Board will review this Order periodically and may revise the requirements when necessary [CCR Section 13263].
- 22. Submittal Revision: Where the Discharger becomes aware that they failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Water Board, it shall promptly submit and/or correct such facts or information [CWC Sections 13260 and 13267].

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23. Owner and/or Operator Responsibilities: The Water 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 for water applied to this property during subsequent use of the land for other purposes.
24. Vested Rights: This Order does not convey property rights of any sort or any exclusive privileges. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under Federal, State, or Local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations, nor do they create a vested right for the Discharger to continue the waste discharge [CWC Sections 13263 (g)].
25. Severability: Provisions of these Waste Discharge Requirements are severable. If any provisions of these requirements are found to be invalid, the remainder of these requirements shall not be affected [CWC 9213].
26. Operation and Maintenance: The Discharger shall, at all times, properly operate and maintain the facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of this Order [CWC Section 13263(f)].
27. Monitoring Devices: All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year in accordance to manufacture recommendation, or more frequently, to ensure continued accuracy of the devices. Annually, the Discharger shall submit to the Executive Officer a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required. Unless otherwise permitted by the Water Board Executive Officer, all analyses shall be conducted at a laboratory certified for such analysis by the State Department of Health Services. The Water Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" [40 CFR Part 136] promulgated by the U.S. Environmental Protection Agency [CCR Title 23, Section 2230].
28. Treatment: In an enforcement action, it shall not be a defense for the Discharger that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with the Order. Upon reduction, loss, or failure of the treatment facility, the Discharger shall, to the extent necessary to maintain compliance with the Order, control

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production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost [CWC Section 13263(f)].

29. Reporting of Hazardous Substance Release: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it probably will be discharge in or on any waters of the State, the Discharger shall:

- a. Report such discharge to the following:
 - i. The Water Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8 a.m. – 5 p.m.); and to
 - ii. The Office of Emergency Services (800)852-7550.
- b. A written report shall be filed with the Water Board within five working days. The report shall describe:
 - i. The nature of the waste or pollutant;
 - ii. The estimated quantity involved;
 - iii. The duration of the incident;
 - iv. The cause of the release;
 - v. The estimated size of the affected area, and nature of the effect;
 - vi. The corrective actions taken or planned, and a schedule of those measures; and
 - vii. The persons/agencies notified.

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

30. Reporting Releases: Except for a discharge which is in compliance with these Waste Discharge Requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the state toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Water Board as soon as:

- a. That person has knowledge of the discharge;

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- b. Notification is possible; and
- c. Notification can be provided without substantially impeding cleanup or other emergency measures.

This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the CWC unless the discharger is in violation of a prohibition in the applicable Water Quality Control Plan [CWC Section 13271(a)].

31. Reporting Petroleum Releases: Except for a discharge which is in compliance with these Waste Discharge Requirements, any person who, without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the state toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Water Board as soon as:

- a. That person has knowledge of the discharge;
- b. Notification is possible; and
- c. Notification can be provided without substantially impeding cleanup or other emergency measures.

This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the CWC unless the discharger is in violation of a prohibition in the applicable Water Quality Control Plan [CWC Section 13271(a)].

32. Release Reporting Requirements: In the case of a release defined by Provisions 29 and 30, the following must be provided to the Water Board within five days of knowledge of the release;

- a. Site map illustrating location and approximate size of impacted area;
- b. Photographs of the impacted area before and after remediation; and
- c. A report detailing the remediation method chosen and its efficacy, and illustrating that the release contingency plan was effective, or else proposing modifications to the contingency plan to increase its effectiveness.

33. Entry and Inspection: In accordance with CWC Section 13267 (c), the Discharger shall, at any time, permit the Water Board or its authorized representative, upon presentation of credentials:

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- a. Immediate entry upon the premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
 - b. Access to copy, at reasonable times, any records required to be kept under the terms and conditions of this Order;
 - c. Inspection at reasonable times, of any treatment facilities, equipment, monitoring equipment, practices, operations, or monitoring method required by this Order or by any other California State agency; and
 - d. Sampling or monitoring at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the CWC, any substance or parameters at any location [CWC Section 13267].
34. Discharges to Navigable Waters: Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Water Board [CCR Title 2 Section 22357].
35. Endangerment of Health or the Environment: The Discharger shall report any noncompliance that may endanger human health or the environment. Any such information shall be provided orally to the Executive Officer, or authorized representative, **within 24 hours** from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Discharger becomes aware of the circumstances. The written submission shall contain:
- a. A description of the noncompliance, and its cause;
 - b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected;
 - c. The anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours [CWC Sections 13263 and 13267]. The following occurrences must be reported to the Executive Officer within 24 hours:

- a. Any bypass from any portion of the treatment facility;
- b. Any discharge of industrial products, or treated or untreated wastewater; and

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- c. Any treatment plant upset which causes the discharge limitation(s) of this Order to be exceeded [CWC Sections 13263 and 13267].
36. General Prohibition: Neither the treatment nor discharge of waste shall create a pollution, contamination, or nuisance, as defined by Section 13050 of the CWC [Health and Safety Code Section 5411, CWC Section 13263].
37. Maintenance of Records: The Discharger shall retain records of all monitoring information including all calibration and maintenance records, all chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete application of this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding the discharge or when requested by the Water Board Executive Officer. Records of monitoring information shall include:
- a. The date, exact place, and time of sampling measurements;
 - b. The individuals who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individuals who performed the analyses;
 - e. The analytical techniques or method used; and
 - f. The results of the analyses.
38. If additional groundwater contamination or potential contamination is detected, the Discharger shall immediately notify the Water Board and the Local Enforcement Agency (LEA). The Discharger shall immediately initiate corrective action to stop and contain the migration of pollutants from the surface impoundment or mining waste.
39. The Discharger shall notify the Water Board of any previously unknown soil or groundwater contamination discovered during any subsurface investigations conducted at the Facility, which may potentially have an adverse impact on ground or surface waters.
40. The Discharger shall remove and relocate any wastes that are discharged at this site in violation of these requirements.
41. The Discharger shall immediately notify the Water Board of any flooding, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures. Any such failure shall be promptly corrected after approval of the method and schedule by the Executive Officer.

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42. Water Board Order No. 97-121 is hereby rescinded.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

Bruce H. Wolfe
Executive Officer

Attachments: Figure 1 - Site Location Map
Figure 2 - Site Map
Figure 3. Waste Stream Schematic
Figure 4. Waste Stream through Surface Impoundments
Self-Monitoring Program

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

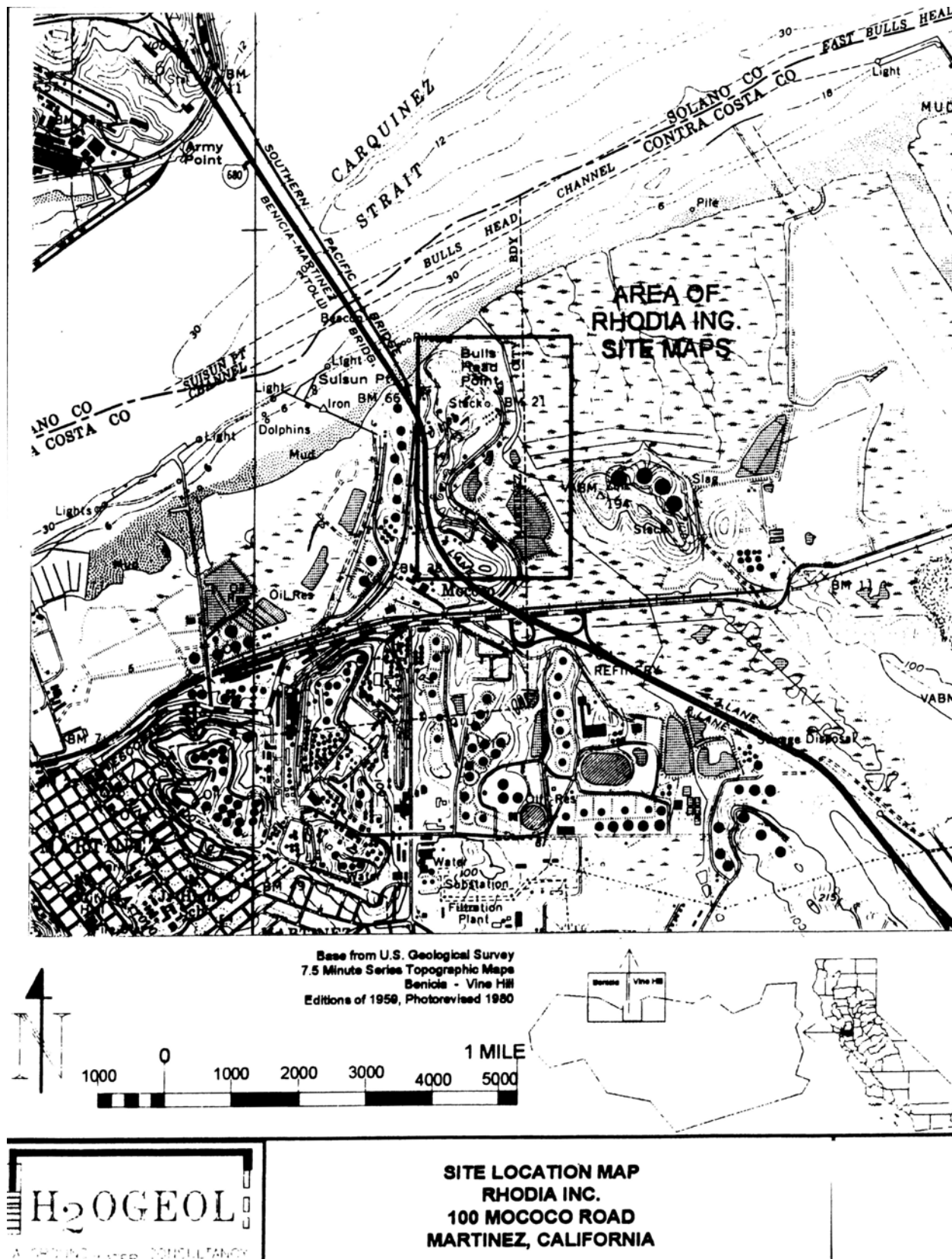


Figure 1. Site Location Map

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

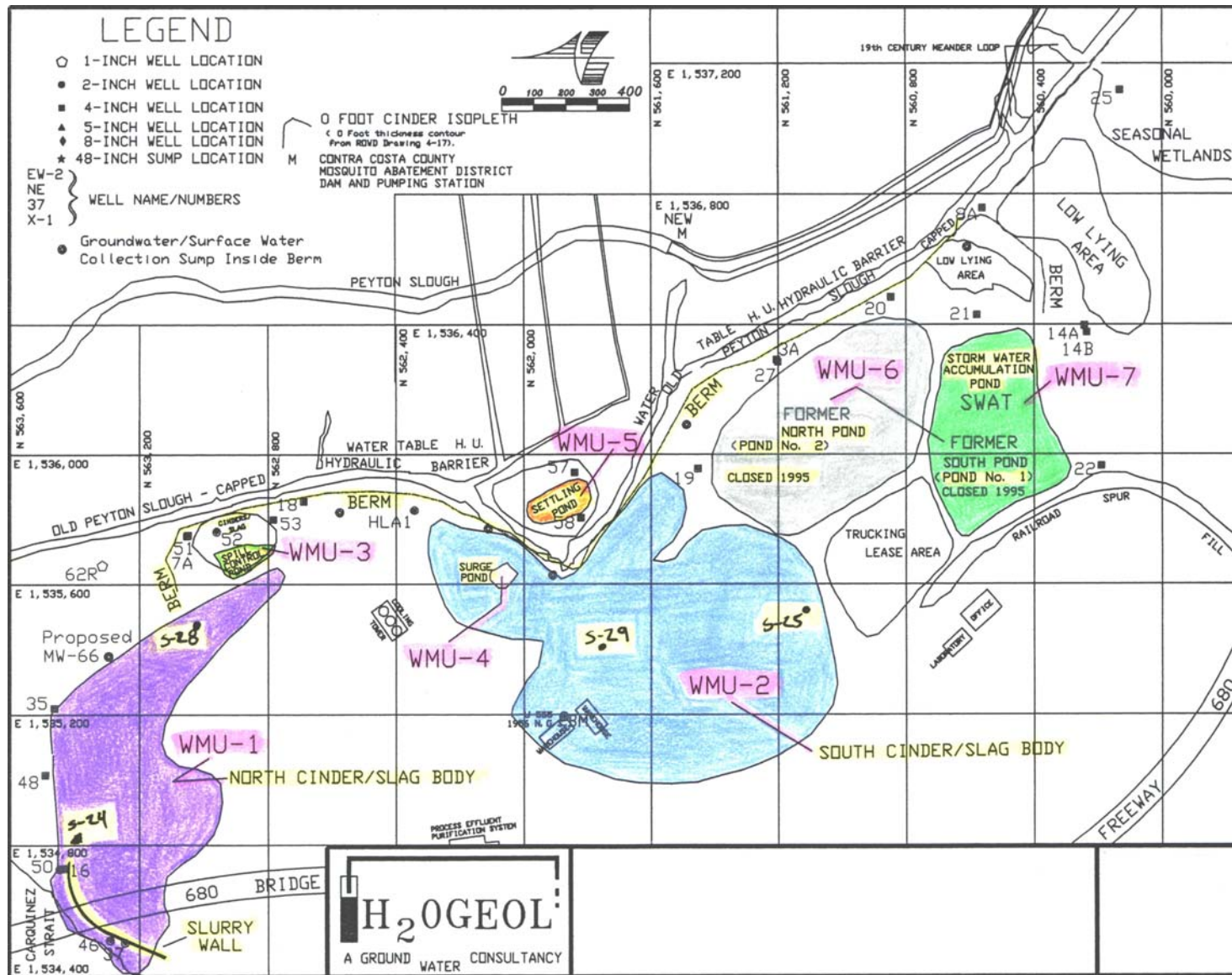


Figure 2. Site Map (Former and current waste management units are in color. The slurry wall and containment berm are highlighted in yellow)

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

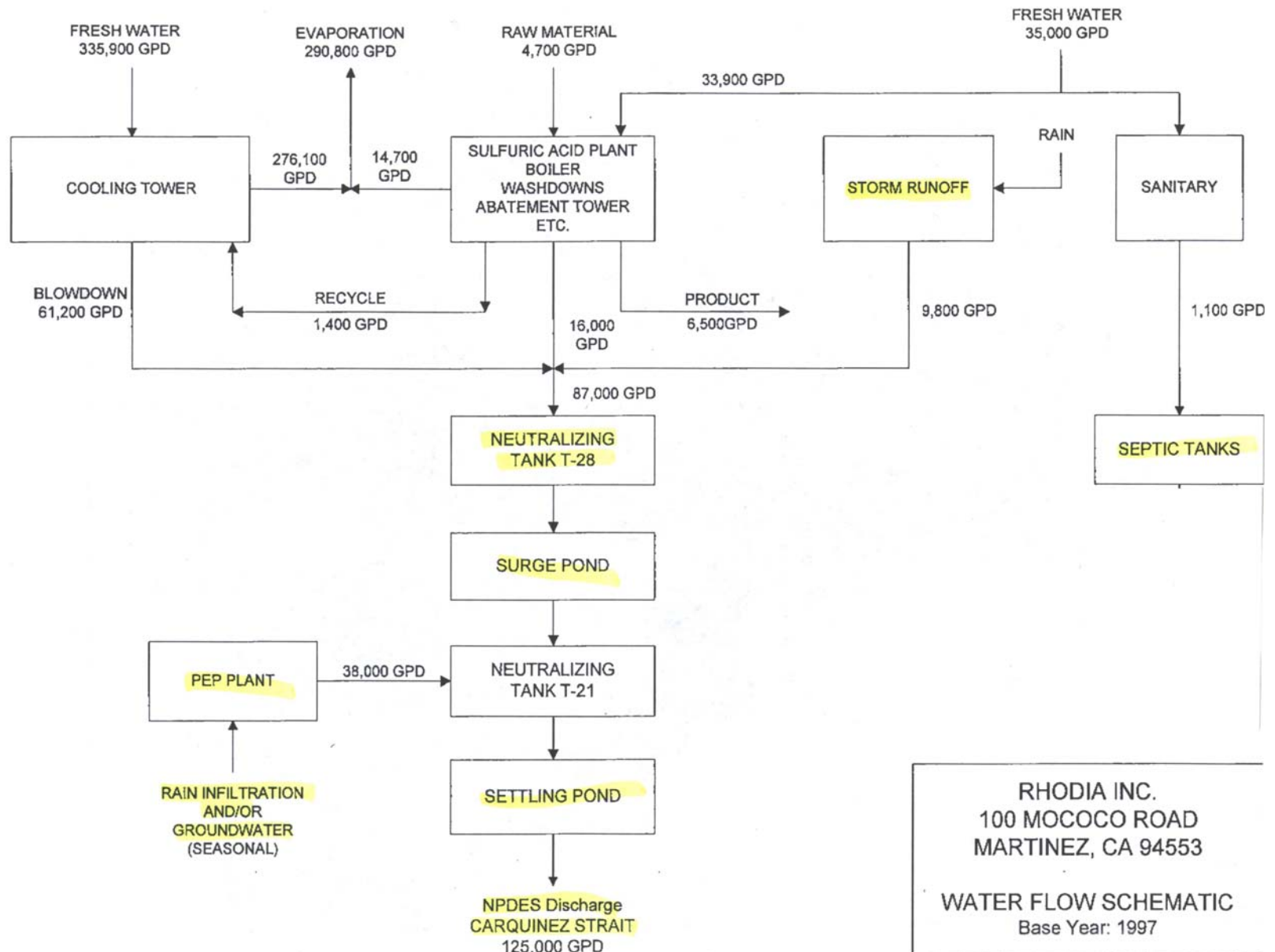
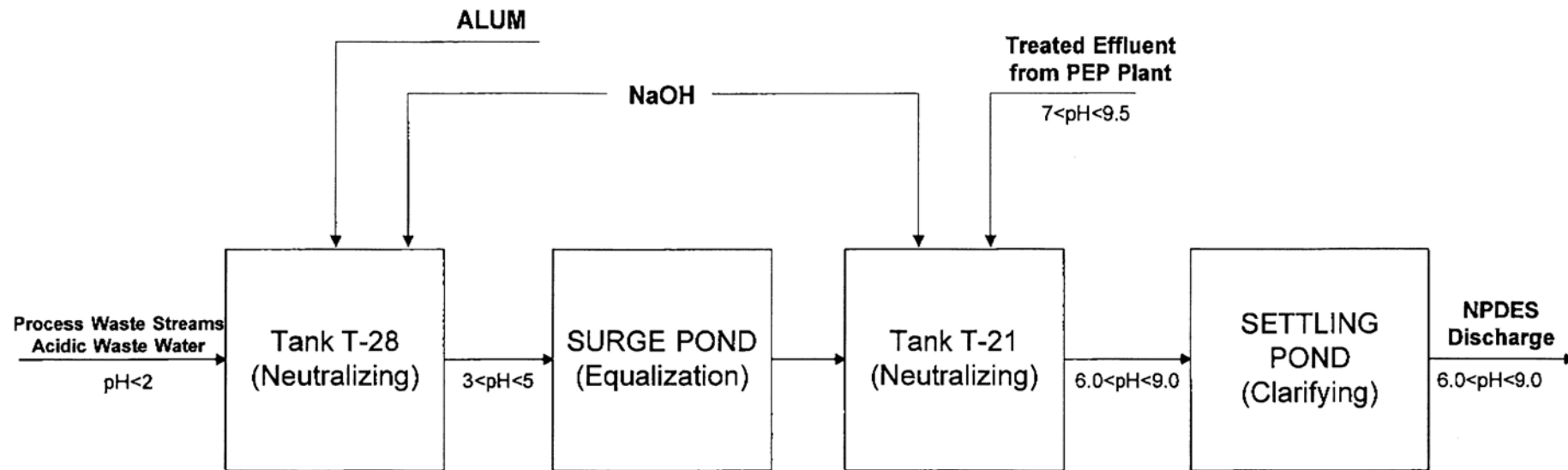


Figure 3. Waste Stream Schematic

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant



Rhodia Inc. Martinez Plant
Waste Water Treatment Plant
Block Flow Diagram
Drawing 3

Figure 4. Waste Stream through Surface Impoundments

ATTACHMENT A
SELF-MONITORING PROGRAM

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

**RHODIA INC.
MARTINEZ PLANT
100 MOCOCO ROAD
MARTINEZ, CA
CONTRA COSTA COUNTY**

ORDER NO. R2-2008-

CONSISTS OF

PART A

AND

PART B

PART A

A. AUTHORITY AND PURPOSE

Reporting responsibilities of waste discharges are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and the Water Board's Resolution No. 73-16. This Self-Monitoring Program is issued in accordance with Title 27 of the California Code of Regulations.

The principal purposes of a Self-Monitoring Program are to:

1. Document compliance with waste discharge requirements and prohibitions established by the Water Board;
2. Facilitate self-policing by the waste dischargers in the prevention and abatement of pollution arising from waste discharge;
3. Develop or assist in the development of standards of performance and toxicity standards;
4. Assist the dischargers in complying with requirements of Title 27.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard 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. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and all reports of such work submitted to the Board shall be signed by a duly authorized representative of the laboratory.

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

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water that actually or potentially receives surface or groundwater that pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas and the surface runoff from the site are considered receiving waters.

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

3. Standard observations refer to:
 - a. Receiving Waters
 - 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
 - 2) Discoloration and turbidity: description of color, source, and size of affected area;
 - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
 - 4) Evidence of beneficial use: presence of water associated wildlife;
 - 5) Flow rate; and
 - 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
 - b. Perimeter of surface impoundments.
 - 1) Evidence of uncontrolled liquid leaving the surface impoundments or Facility, estimated size of affected area and flow rate. (Show affected area on map);
 - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source; and
 - 4) Evidence of erosion.
 - c. The surface impoundments.
 - 1) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
 - 2) Evidence of algal or other unusual growth, precipitation of sludge minerals, quantity, nature and chemical composition;
 - 2) Evidence of erosion, slope or ground movement;
 - 3) Adequacy of access road; and
 - 5) Standard Analysis and measurements (monitoring parameters) are listed on Table A-1 (attached).

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The Discharger is required to perform sampling, analyses, and observations in the groundwater and leachate per Section 20415 and per the general requirements specified in Section 20415(e) of Title 27.

E. RECORDS TO BE MAINTAINED

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

1. Identity of sample and sample station number;
2. Date and time of sampling;
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Calculation of results; and
6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. **Self-Monitoring Reports**

Written monitoring reports shall be filed by **May 30 and November 30** of each year. As part of the November 30 report, an annual report shall be filed each year. The reports shall be comprised of the following:

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of **any requirement violations** found during the last report period, and actions taken or planned for correcting the violations. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last reporting period, this shall be stated in the letter of transmittal.

Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

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

- 1) A graphic description of the direction of groundwater flow under/around surface impoundments and mining waste, based upon the past and present water level elevations and pertinent visual observations;
- 2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water;
- 3) Type of pump used for sampling, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations; and
- 4) A written discussion of the groundwater analyses indicating any change in the quality or characteristics of the groundwater or indications of leaks.

c. A comprehensive discussion of the compliance record and status, as well as any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the Waste Discharge Requirements and 27CCR.

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

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

- e. Laboratory statements with the results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and all reports of such work submitted to the Board shall be signed by a duly authorized representative of the laboratory.
 - 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.
 - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that are outside laboratory control limits; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
- f. An evaluation of the effectiveness of the leachate/groundwater collection, monitoring, control, and removal facilities, which includes a summary of fluid volumes removed, and a discussion of the disposal/treatment methods utilized.
- g. A summary and certification of completion of all standard observations for the surface impoundments, the perimeter of the surface impoundments, and the mining waste.
- h. The Annual Monitoring Report shall be submitted to the Board covering the previous year, and shall be filed by November 30 of each year. The Report shall include, but is not limited to, the following:
 - i. A graphical presentation for each monitoring point, submit in graphical format the laboratory analytical data for all samples taken. Each such graph shall plot the concentration of one or more constituents over time for a given monitoring point, at a scale appropriate to show trends or variations in water quality. On the basis of any aberrations noted in the plotted data, the Executive Officer may direct the Discharger to carry out a preliminary investigation, the results of which will determine whether or not a release is indicated;
 - ii. A tabular summary of all the monitoring data obtained during the previous year;

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

- iii. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements;
 - iv. A map showing the area, if any, in which filling has been completed during the previous calendar year;
 - v. A written summary of the groundwater analyses indicating any change in the quality of the groundwater; and
 - vi. An evaluation of the effectiveness of the leachate monitoring/control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate control volumes removed from the units, and a discussion of the leachate disposal methods utilized.
- i. Tabular and graphical summaries of the monitoring data obtained during the previous year; the annual report should be accompanied by a compact disc, MS-EXCEL format, tabulating the year's data.

2. **Contingency Reporting**

- a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within **five days** thereafter. This report shall contain the following information:
- 1) A map showing the location(s) of discharge if any;
 - 2) Approximate flow rate;
 - 3) The number of samples of the discharge collected for chemical analysis, or defensible reason samples could not be collected;
 - 4) The nature of effects; i.e. all pertinent observations and analyses; and
 - 5) The corrective measures underway, proposed, or as specified in the Waste Discharge Requirements.
- b. A report shall be made in writing to the Board within **seven days** of determining that a statistically significant difference occurred between a downgradient sample and a Water Quality Protection Standard (WQPS) (see Part A, Section G). Notification shall indicate which WQPS(s) has/have been exceeded. The Discharger shall immediately resample at the compliance point where the difference has been found and re-analyze.

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

- c. A report shall be made by telephone of any requirement violation(s) immediately after it is discovered. A written report shall also be filed within seven days that includes a discussion of the requirement violation(s), and actions taken or planned for correcting the violation(s).
- d. If resampling and analysis confirms the earlier finding of a significant difference between monitoring results and WQPS(s) the discharger must submit to the Water Board, an amended Report of Waste Discharge as specified in Title 27, Section 20420(k)(5) for establishment of an Evaluation Monitoring Program, meeting the requirements of Title 27, Section 20425.
- e. Within **180 days** of determining a statistically significant evidence of a release, submit to the Water Board an engineering feasibility study for a Corrective Action Program necessary to meet the requirements of Title 27, Section 20430. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. Well Logs

A boring log and a monitoring well construction log shall be submitted for each new sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 45 days after well installation.

G. WATER QUALITY PROTECTION STANDARDS

- 1. Constituents of Concern: The Constituents of Concern (CoC) for groundwater are those listed in Table A-1 of this Self-Monitoring Program. CoCs are the exhaustive list of chemicals expected to be present in potential discharge. Groundwater and surface water shall be analyzed for CoCs at least one time **every five years**.
- 2. Monitoring Parameters: The Monitoring Parameters and a sampling schedule for groundwater and surface water are listed in Table A-1 of this Self-Monitoring Program. Monitoring Parameters are a subset of CoCs that shall be analyzed and reported in every Self-Monitoring Report, serving to indicate if a release has occurred.
- 3. Performance Based Concentration Limits: Groundwater concentrations of CoCs and monitoring parameters will be compared to performance based concentration limits (PBCLs) to identify migration of contaminants past the points of compliance. If three exceedances occur out of six consecutive events, the Discharger is required to investigate the source of the increase and potential impact. PBCLs will be the running mean plus three standard deviations at each

point of compliance. The historical data used to develop PBCLs will vary depending upon its quality. Wells within insufficient data to develop PBCLs will be monitored quarterly (reported semi-annually in the Self-Monitoring Report) until enough data is gathered.

4. Monitoring Points: Monitoring Points for the surface impoundments and mining waste are identified in Figure A-1 of this Self-Monitoring Program.
5. Point of Compliance: To contain contaminants, the Discharger has proposed Points of Compliance wells (PoC wells) which would be downgradient if not for the LCRS systems, that act as points on a line past which contaminants in exceedance of PBCLs must not migrate. The PoCs for the Facility is the vertical surface that extends from the outside edge of the lateral containment structures through the two uppermost aquifers underlying the unit. These are outlined in Figure A-1.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. GROUNDWATER MONITORING:

Semi-Annual Report: Due May 30 of each year
Annual Report: Due November 30 of each year

Groundwater from the water table and intermediate hydrostratigraphic units shall be sampled and analyzed as detailed in Table A-1. Monitoring well locations are shown in Figure A-1. Groundwater analyses shall include the following field measurements: pH, temperature, specific conductance, water level, volume purged, number of casings volumes purged, and whether the well went dry during sampling (including measures taken to ensure accuracy of analyses given this condition). Groundwater monitoring wells installed in the future will be sampled and analyzed as detailed in Table A-1 and on a quarterly basis until a statistically significant dataset is established.

B. FACILITIES MONITORING - Observe quarterly, report semi-annually

Semi-Annual Report: Due May 30 of each year
Annual Report: Due November 30 of each year

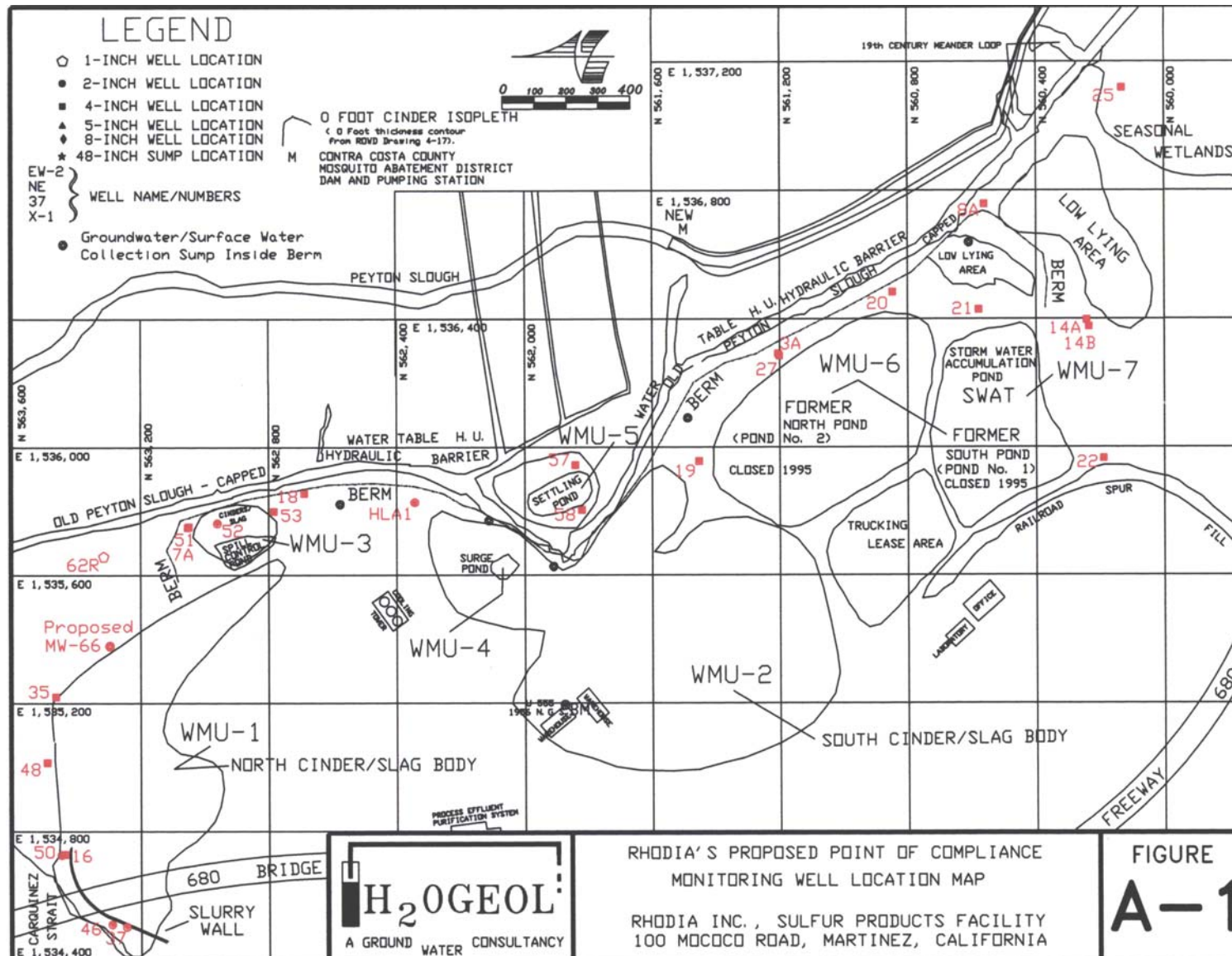
The Discharger shall inspect all facilities to ensure proper and safe operation and report semi-annually. The facilities to be monitored shall include, but not be limited to:

1. Waste Containment systems;
2. Waste treatment systems;
3. Surface water retention basins;
4. Leak detection systems (where applicable); and
5. Leachate/groundwater management facilities and secondary containment where applicable.

Attachment: Figure A-1 – Monitoring Well Location Map
 Table A-1 – Monitoring Wells, Monitoring Parameters, and Monitoring Schedule

Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

Figure A-1. Monitoring well location map.



Tentative Waste Discharge Requirements for Rhodia Inc. Martinez Plant

Table A-1 – Monitoring Wells, Monitoring Parameters, and Monitoring Schedule

Points of Compliance Monitoring Wells	Monitored Parameters
Water Table Hydrostratigraphic Unit MW-3A MW-8A MW-14A MW-16 MW-18 MW-19 MW-20 MW-21 MW-22 MW-25 MW-37 MW-46 MW-48 MW-51 MW-57 MW-58 MW-62R MW-66 (new) HLA-1 Intermediate Hydrostratigraphic Unit MW-14B MW-7A MW-27 MW-35 MW-50 MW-52 MW-53	Constituents of Concern (monitored at least once every 5-years) zinc copper iron nickel cadmium lead arsenic barium Monitoring Parameters (monitored semi-annually) zinc copper