



7404



Pete Wilson  
Governor

**Cal/EPA**

December 10, 1996

Los Angeles  
Regional Water  
Quality Control  
Board

Mr. D.D. Ching  
Unocal Petroleum Products & Chemicals Division  
Union Oil Company of California  
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Wilmington, CA 90748

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**UNOCAL LOS ANGELES REFINERY, WILMINGTON - WASTE DISCHARGE REQUIREMENTS (FILE NO. 85-8)**

Reference is made to our letters dated November 14, 1996, and November 27, 1996, transmitting Revised Tentative Waste Discharge Requirements for soil remediation by land treatment at the Unocal Los Angeles Refinery - Wilmington Plant.

Pursuant to Section 13263 of the California Code of Regulations, this Regional Board at a public meeting held on December 9, 1996, reviewed the tentative Order, considered all factors in the case, and adopted Order No. 96-100, which also rescinded Order No. 93-055 and Order No. 94-073, and a Revised Monitoring and Reporting Program No. CI 7404 (copy attached) relative to the discharge.

The "Monitoring and Reporting Program" requires you to implement the monitoring program and submit your first monitoring report under this program by April 30, 1997. Please reference all technical and monitoring reports to our Compliance File number CI 7404. We would appreciate it if you would not combine other reports, such as progress or technical, with your monitoring reports but would submit each type of report as a separate document. All monitoring reports should be sent to the Regional Board, ATTN: Technical Support Unit.

Please call Keith Elliott at (213) 266-7614 if you have any questions.

J.E. Ross, Unit Chief  
Site Cleanup Unit

- cc: John Youngerman, State Water Resources Control Board, Division of Water Quality
- Hamid Saebfar, Department of Toxic Substance Control, Region 3 - Glendale
- Marilee Hanson, Department of Toxic Substances Control, Office of Legal Counsel
- Department of Interior, U. S. Fish and Wildlife Service
- Department of Fish and Game, Region 5
- Tom Klinger, Los Angeles County, Fire Department - Health Hazardous Materials Division
- South Coast Air Quality Management District
- City of Los Angeles, Department of Environmental Affairs
- Meg George, Unocal Los Angeles Refinery Carson Plant

Enclosures



*Our mission is to preserve and enhance the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.*

State of California  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION

ORDER NO. 96-100

WASTE DISCHARGE REQUIREMENTS  
FOR  
UNION OIL COMPANY OF CALIFORNIA - LOS ANGELES REFINERY  
(CARSON PLANT, WILMINGTON PLANT, AND MARINE TERMINAL)

(FILE NO. 85-8)

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), finds:

1. The Union Oil Company of California dba Unocal (hereafter called the Discharger), a corporation under the laws of the State of California, operates the Unocal Los Angeles Refinery consisting of the Carson Plant, Wilmington Plant, and Marine Terminal. The Carson Plant is a 245 acre site located in an industrial area at 1520 East Sepulveda Boulevard, Carson, California. The Wilmington Plant, a 435 acre site is located at 1660 West Anaheim Street, Wilmington, California. In December 1991, the Plants were connected via pipeline and now the Carson Plant serves as the crude processing unit and the Wilmington Plant serves as the upgrade unit. Both plants effectively operate as one refinery. The 13.5 acre Marine Terminal is located at Pier 148-151 Worldport of Los Angeles, California (Figure 1). The Marine Terminal handles petroleum based commodities including but not limited to gasoline, diesel, fuel oil, slurry oil, lube oils, and methyl tertiary butyl ether (MTBE). Materials enter and exit the Marine Terminal by pipeline to the Los Angeles Refinery Wilmington Plant, ships, and trucks.
2. Two land treatment units (LTU-1 and LTU-2) were built at the Wilmington Plant in 1992 for bioremediation of non-hazardous petroleum hydrocarbon contaminated soils. These soils, originating on-site at the Carson and Wilmington Plants, were land treated in LTU-1 and LTU-2 in accordance with Order No. 90-148, General Waste Discharge Requirements, and Waste Discharge Requirements Order No. 94-073, adopted on July 18, 1994. In addition, 300 cubic yards of soil originating off-site were remediated in LTU-1, in accordance with Waste Discharge Requirements Order No. 93-055, adopted on September 27, 1993.
3. The Discharger has filed a report of waste discharge for Waste Discharge Requirements for land treatment and has requested the following modifications to Order No. 94-073:
  - a. Include the Los Angeles Refinery Marine Terminal, along with the Carson Plant and Wilmington Plant, in the definition of the Los Angeles Refinery site.
  - b. Provide cleanup levels comparable to the soil screening levels published in Table 4-1 of this Regional Board's Interim Site Assessment and Cleanup Guidebook, May 1996.

- c. Rescind Waste Discharge Requirements Order No. 93-055, for land treatment of off-site soils, and Order No. 94-073, for land treatment of on-site soils.
4. The Discharger proposed to bioremediate up to 1,000,000 cubic yards per year of non-hazardous petroleum hydrocarbon contaminated soils originating at the Marine Terminal, Wilmington Plant, and Carson Plant in the existing land treatment units (LTU-1 and LTU-2) at the Los Angeles Refinery Wilmington Plant, and discharge these soils in a soil pile for final use as fill at the Los Angeles Refinery Carson and Wilmington Plants.
  5. The Palos Verdes Fault is a major structural feature which cuts across the Los Angeles Refinery Wilmington Plant from the northwest corner to the southeast corner. However, this is an inactive fault that does not outcrop at the Wilmington Plant.
  6. The Los Angeles Refinery Wilmington Plant is underlain by at least two ground water aquifers: the shallow Gage aquifer and the deeper Silverado aquifer. Ground water monitoring data, summarized in the Dominguez Gap Barrier Project Hydrologic and Operations Report, November, 1989 through October, 1990 (Los Angeles Department of Public Works, 1991), indicate the Gage aquifer beneath the site has been impacted by subsurface salt water intrusion. Chloride concentrations in ground water samples collected beneath the site range from 10,000 mg/L to about 15,000 mg/L. The Silverado aquifer, 350 feet to 1000 feet below ground surface, provides ground water of the best quality and quantity.
  7. Order No. 85-17, adopted by this Regional Board on February 25, 1985, directed the Discharger to conduct subsurface investigations of its facility to detect, assess, and remediate any ground water pollution which may be present. Cleanup and Abatement Order No. 94 - 139, issued by this Regional Board's Executive Officer on December 22, 1994, directed additional on-site and off-site cleanup activities and established a Monitoring and Reporting Program for the Los Angeles Refinery Carson and Wilmington Plants.
  8. The Regional Board adopted a revised Water Quality Control Plan for the Los Angeles Region on June 13, 1994. This Water Quality Control Plan designates beneficial uses and establishes water quality objectives for all ground water within the Region.
  9. The Los Angeles Refinery overlies the Coastal Plain Hydrologic Area of Los Angeles County. Ground water in this hydrologic area is beneficially used for municipal and domestic supply, agricultural supply, and industrial service and process supply. The Waste Discharge Requirements contained in this Order, as they are met, will be in conformance with the goals of the Water Quality Control Plan.
  10. Title 23, California Code of Regulations, Division 3, Chapter 15 (Chapter 15) requires Regional Boards to specify, in Waste Discharge Requirements, the elements of land treatment programs by dischargers who treat or dispose of wastes in land treatment waste management units. The Waste Discharge Requirements contained in this Order, as they are met, will be in conformance with the goals of Chapter 15 regulations for land treatment units.

11. This project involves an action taken for the protection of the environment and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, commencing with Section 21100) in accordance with Title 14, California Code of Regulations, Chapter 3, Section 15321.

The Regional Board has notified the Discharger and interested agencies and persons of its intent to issue Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the tentative Waste Discharge Requirements.

IT IS HEREBY ORDERED that Union Oil Company of California (the Discharger), in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Requirements

1. Wastes discharged at the site for bioremediation by land treatment in the existing land treatment units (LTU-1 and LTU-2) at the Los Angeles Refinery Wilmington Plant shall be limited to non-hazardous petroleum-hydrocarbon-contaminated soil originating on-site at the Los Angeles Refinery Marine Terminal, Wilmington Plant, or Carson Plant.
2. To ensure the Discharger maintains good housekeeping practices and to protect surface waters, any soils discharged in accordance with these Waste Discharge Requirements that are petroleum hydrocarbon stained shall be overlain with a minimum of two (2) feet of soils with TPH concentrations less than 1,000 mg/kg.
3. All soils suitable for discharge onto the site, including those noted in Requirement A. 2, above, shall have contaminant concentrations less than the maximum discharge limits tabulated in Table 1, below.

TABLE 1

MAXIMUM DISCHARGE LIMITS

<u>Parameter</u>	<u>Limit</u> (mg/kg)
Total petroleum hydrocarbons - carbon ranges	
C <sub>4</sub> - C <sub>12</sub>	1,000
C <sub>13</sub> - C <sub>22</sub>	10,000
C <sub>23</sub> - C <sub>32</sub>	50,000
Aromatic volatile organic compounds	
Benzene	0.1
Toluene	15

TABLE 1 (Continued)

MAXIMUM DISCHARGE LIMITS

<u>Parameter</u>	<u>Limit</u> (mg/kg)
Ethylbenzene	70
Xylene	175
Methyl tertiary butyl ether (MTBE)	2
Polynuclear aromatic compounds (PNAs) in the Toxic Characteristic Leaching Potential (TCLP) extract ( $\mu\text{g/L}$ ).	Non-detect <sup>1</sup>

4. A copy of these Waste Discharge Requirements shall be maintained at the Discharger's on-site office, and be available at all times to operating personnel.
5. In accordance with the California Water Code, Section 13260, the Discharger shall file a report with this Regional Board of any material change or proposed change in the character or location of the discharge.
6. In the event of any change in name, ownership, or control of the facility, the Discharger shall notify this Board in writing and shall notify the succeeding owner or operator of the existence of this order by letter, a copy of which shall be forwarded to the Board.
7. The Discharger must notify this Board by telephone within 24 hours, followed by written notification within one week, in the event they are unable to comply with any of the conditions of this Order due to:
  - a. Breakdown of waste treatment equipment,
  - b. Accidents caused by human error or negligence,
  - c. Other causes such as acts of nature, or
  - d. Site construction or development operations.
8. The attached Monitoring and Reporting Program is made a requirement of this Order. In accordance with the California Water Code, Section 13267, the Discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer. The specifications are subject to periodic revisions as may be warranted.

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<sup>1</sup> Non-detect in the TCLP extract at the practical quantification limits of detection for each compound.

9. The Regional Board and other authorized representative shall be allowed:
  - a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
  - b. Access to copy any records that are kept under the conditions of this order;
  - c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this order; and
  - d. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the California Water Code.
10. The land treatment process, which includes nutrients and/or bacterial addition to soil, and soil aeration, shall be conducted in such a way that no contaminants are added to surface water or ground waters.
11. Adequate facilities shall be provided to divert away from the treatment area all storm water runoff.
12. The treatment area shall be bermed in such a way that storm water falling directly on the treatment area will be contained. Standing water within the contained treatment area shall be pumped down and removed to an on-site oil recovery process unit and discharged in accordance with the refinery's Industrial Waste Water Discharge permit or disposed of at a legal disposal site. For the purpose of this requirement, a legal point of disposal is defined as one for which Waste Discharge Requirements have been established by a California Regional Water Quality Control Board and which is in full compliance therewith.
13. At least 180 days prior to closure of the waste management units the Discharger shall submit operation plans for precipitation and drainage controls, any required cover, closure and post-closure maintenance and ground water monitoring plans acceptable to the Executive Officer as set forth in Title 23, California Code of Regulations, Division 3, Chapter 15, Article 5, Sections 2580, 2584, and 2597.
14. Treated soils may be reused on-site at the Los Angeles Refinery - Wilmington Plant, Carson Plant, or at another specific location with proper written approval by the Executive Officer.
15. Any non-hazardous contaminated material disposed at the Marine Terminal or off-site shall be at a location specifically approved by the Executive Officer and in accordance with Waste Discharge Requirements that have been established by a California Regional Water Quality Control Board.

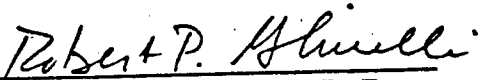
Prohibitions

1. No off-site soils shall be imported for treatment at this site.
2. Wastes discharged or reclaimed shall not contain any substance in concentrations toxic to human, animal, plant, or aquatic life.
3. Neither the disposal nor any handling of waste shall cause pollution at the site or nuisance odor at the facility boundary.

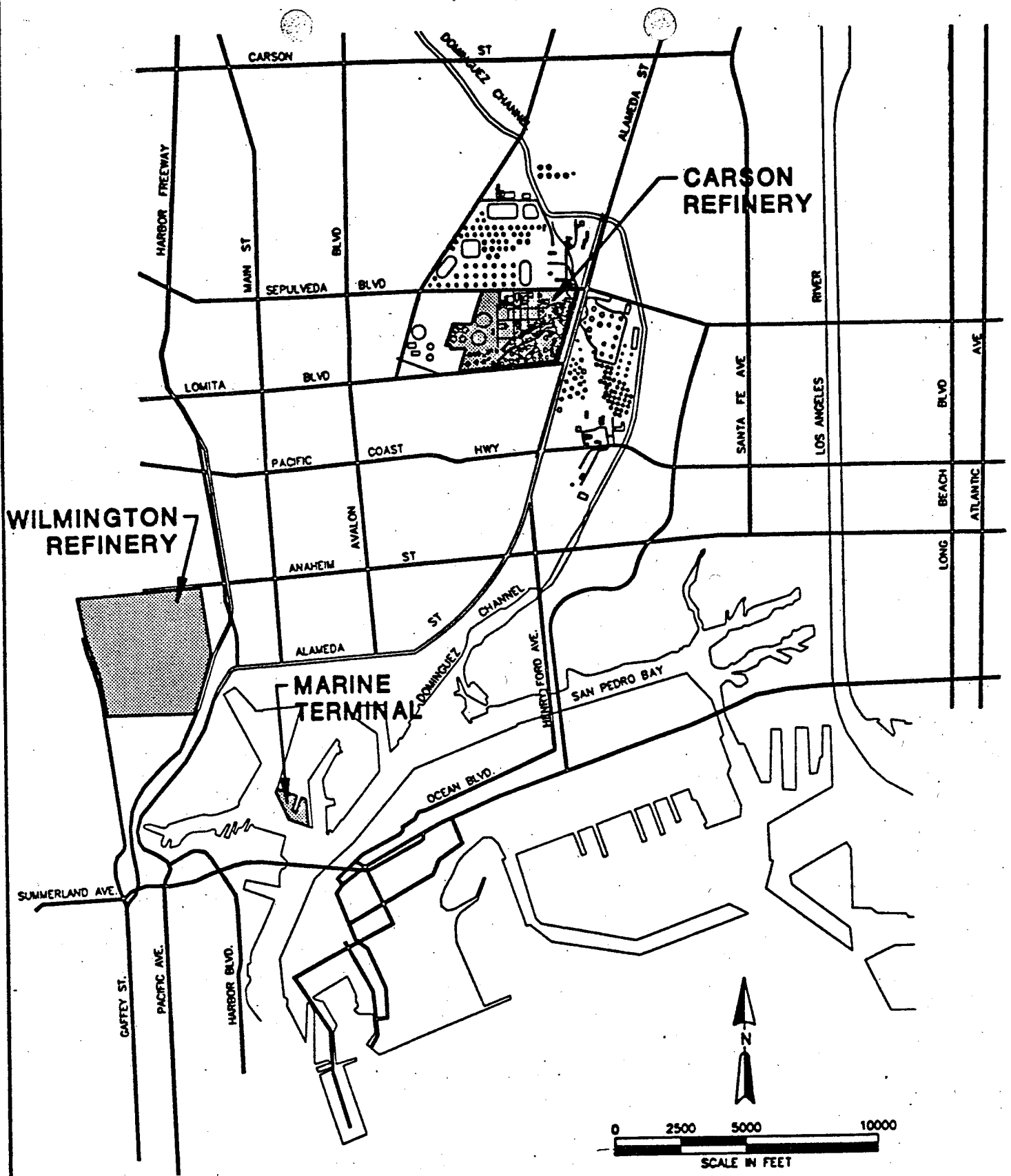
C. Provisions

1. This Order includes "Standard Provisions Applicable to Waste Discharge Requirements". If there is any conflict between provisions stated herein and the "Standard Provisions Applicable to Waste Discharge Requirements", these provisions stated herein will prevail.
2. In accordance with the California Water Code, Section 13263, these Waste Discharge Requirements are subject to periodic review and revision by this Regional Board.
3. These Waste Discharge Requirements do not exempt the Discharger from compliance with any other laws, regulations, or ordinances which may be applicable, they do not legalize any waste treatment and disposal facility and they leave unaffected any further restraints on any facility which may be contained in other statues or required by other agencies.
4. Order No. 94-073, adopted on July 18, 1994, and Order No. 93-055, adopted on September 27, 1993, are hereby rescinded.

I, Robert P. Ghirelli, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on December 9, 1996.

  
ROBERT P. GHIRELLI, D. Env.  
Executive Officer

/KLE



REF	DESC.	DATE	BY	DATE	APPRO	DATE	CAD FILE
0	EF.	10/31/96	DRAFT	10/31/96			22035123
NO	DRWN	DATE	REVISION	CHG	DATE	APPRO	DATE

UNOCAL LOS ANGELES REFINERY  
 WILMINGTON PLANT,  
 CARSON PLANT  
 & MARINE TERMINAL

**RE/TEC**  
Engineering & Construction Services  
 10000 Wilshire Blvd, Suite 2000, Los Angeles, CA 90024  
 (213) 746-1000  
**FIGURE 1** 10



STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI. 7404  
FOR  
UNION OIL COMPANY OF CALIFORNIA - LOS ANGELES REFINERY  
(CARSON PLANT, WILMINGTON PLANT, AND MARINE TERMINAL)

ORDER NO. 96-100  
(FILE NO. 85-8)

I. GENERAL REPORTING REQUIREMENTS

The Union Oil Company of California - Los Angeles Refinery (Discharger) shall implement this Monitoring and Reporting Program on the date of issuance of the Waste Discharge Requirements of Order No. 96-100. The first quarterly monitoring and progress report under this program is due by April 30, 1997, for the previous three months. Quarterly progress reports shall be submitted by the date in the following schedule, until submission of the final soils treatment report:

REPORTING SCHEDULE

<u>Reporting Period</u>	<u>Report Due</u>
January - March	April 30
April - June	July 30
July - September	October 30
October - December	January 30

II. GROUND WATER MONITORING

Ground water monitoring may be conducted as part of the site wide ground water gauging, sampling and reporting program conducted in compliance with the requirements of Cleanup and Abatement Order No. 94-139. Specifically for Order No. 96-100, ground water samples shall be collected from monitoring wells W-5, W-17, W-18, MW-34, and MW-37 and analyzed for the following parameters:

TABLE 1

GROUND WATER MONITORING

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Water elevation	(0.01 feet) from Datum	Semi-Annually
Total dissolved solids	mg/L	Semi-Annually
Turbidity	NTU	Semi-Annually

TABLE 1 (Continued)

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
pH	pH units	Semi-Annually
Total petroleum hydrocarbons (TPH) <sup>1</sup>	µg/L	Semi-Annually
Volatile organic compounds <sup>2</sup>	µg/L	Semi-Annually

III. LAND TREATMENT FACILITY SOIL MONITORING

A soil sampling grid shall be established for the land treatment units (LTUs) and the sampling locations shall be located where representative soil samples can be obtained. Soil samples shall be collected and analyzed for the following parameters:

TABLE 2

SOIL MONITORING

<u>Parameter</u>	<u>Unit</u>	<u>Frequency</u>
Bacteria plate count	Colonies/gm	Quarterly
Soil moisture content	%	Quarterly
TPH <sup>3</sup>	mg/kg	Quarterly
Priority pollutants		
Volatile organic compounds <sup>4</sup>	µg/kg	As defined <sup>5</sup>
Polynuclear aromatic compounds (PNAs) <sup>6</sup>	mg/kg and µg/L <sup>7</sup>	As defined <sup>5</sup>

1 EPA Modified Method 8015 - Hydrocarbon Screen

2 EPA Method 601/602 or method 624

3 Modified EPA Method 8015 - C<sub>4</sub>-C<sub>32</sub> hydrocarbon scan

4 EPA Methods 8010/8020 or Method 8260 extended to include methyl tertiary butyl ether (MTBE).

5 Initially, prior to placement in the land treatment unit, and final verification sampling just prior to removal from the land treatment unit. One soil sample per 250 cubic yards shall be collected for analyses per event or as determined by the Executive Officer for an individual contaminant source. If the initial sample results are below the EPA Method detection limits for all the individual constituent within a test method, then that test method does not have to be analyzed for verification sampling.

6 EPA Method 8310

<u>Parameter</u>	<u>Unit</u>	<u>Frequency</u>
CAM metals	mg/kg	Initially <sup>8</sup>

IV. GENERAL PROVISIONS FOR SAMPLING AND ANALYSIS

- A. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services, or approved by the Executive Officer. No changes shall be made in sampling points without prior approval of the Executive Officer.
- B. All verification sampling require 72 hours written and verbal notice to the Board in order for staff to participate in the sampling.

V. SPECIFIC REPORTING REQUIREMENTS

- A. The following technical reports shall be filed with the Regional Board:
1. A "Petroleum Hydrocarbon Contamination Removal Report", shall be submitted within 30 days of removal of contaminated soil from the Los Angeles Refinery site for treatment at these treatment units. This report shall describe the facility name, location, and location at the facility where the contaminated soil originated (including a site map), verify that either all contaminated soils have been removed for land treatment or document that all free-phase or petroleum hydrocarbon saturated soils have been removed, and include all supporting soil verification data. In addition, the report shall state the volume of contaminated soils placed into each treatment cell.
  2. By January 30th of each year, beginning in 1998, the Discharger shall submit an annual report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the Discharger shall discuss the compliance record and the corrective actions taken or planned which may be needed to bring the discharge into full compliance with the waste discharge requirements.

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<sup>7</sup> Results of TCLP extractions are reported in  $\mu\text{g/L}$ .

<sup>8</sup> Initially, prior to placement in the land treatment unit, one sample per 250 cubic yards shall be collected for analyses per event, or as determined by the Executive Officer for an individual contaminant source.

3. A "Final Closure Report" shall be submitted within 120 days of completing all treatment in the LTUs. This report shall include analyses of soil samples underlying the treatment cells documenting that any contaminants that may have been released during its life have been remediated.
- B. All technical reports submitted shall contain the following minimum information:
1. Quantity of waste material treated during the reporting period.
  2. Analytical results from land treatment zone soil sampling and soil monitoring in the excavated areas, including all data collected during the reporting period verifying that cleanup levels set by the Executive Officer have been met, if a lift was removed.
  3. Final disposition of any soils removed from the treatment cells during the reporting period.
  4. A statement certifying that storm water runoff was prevented from entering the land treatment area, other than rainfall directly on the LTUs, and that no waste material was carried away from the land treatment area by rainfall runoff.
  5. When no contaminated soils enter, are contained within, or removed from either treatment cell during the entire quarter, then a simple letter so stating may be submitted by Unocal along with the required certification statements described in Item V. B-4, above, and in Item V. F, below. This letter does not require the signature of a registered or certified professional discussed in Item V. C., below.
- C. All technical reports prepared for submittal to the Regional Board shall be signed by either a California registered Civil Engineer, a registered geologist, or certified engineering geologist.
- D. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed, together with a timetable, to bring the discharge back into full compliance with the requirements at the earliest time.
- E. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the data, the constituents, and the concentrations are readily discernible. The data shall be summarized to determine compliance with waste discharge requirements and, where applicable, shall include receiving ground water observations.

F. Monitoring reports submitted to the Regional Board shall be signed by:

1. In the case of a corporation, the principal executive officer, at least of 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;
2. In case of a partnership, a general partner;
3. In case of a sole proprietorship, the proprietor;
4. In the case of a municipal, state or public facility, either a principal executive officer, ranking elected official, or other duly authorized employee.

Each report shall contain the following completed declaration:

" I declare under penalty of perjury that the foregoing is true and correct.

Executed on the day of \_\_\_ at \_\_\_

\_\_\_\_\_ (Signature)

\_\_\_\_\_ (Title)"

Ordered by

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.  
Executive Officer

Date: December 9, 1996

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