

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

WASTE DISCHARGE REQUIREMENTS ORDER NO. R4-2003-0158
FOR
GOLDEN WEST REFINING COMPANY
SOUTH TANK FARM AREA
(SANTA FE SPRINGS, CALIFORNIA)

(FILE NO. 85-13)

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

1. Golden West Refining Company (hereafter "Discharger") owned a former oil refinery located at 13539 East Foster Road in the City of Santa Fe Springs, County of Los Angeles, California. The refinery was built in the 1930's by Wilshire Oil Company and was owned and operated by Wilshire Oil Company until 1960, when the facility was sold to Gulf Oil Corporation. The Discharger purchased the refinery from Gulf Oil Corporation in August 1983. The refinery was comprised of four principal areas: 1) the Process Unit Area (PUA); 2) the West Tank Farm; 3) the Marketing Area; and 4) the South Tank Farm (STF) (Figures 1 and 2). Crude oil was refined in the PUA into various fuels such as fuel oil, diesel, gasoline and propane. The West Tank Farm and South Tank Farm have been used for storage of petroleum products. Prior to the Discharger's ownership, various types of materials containing petroleum hydrocarbons and heavy metals were placed in two areas of the refinery designated as Area A, located in the West Tank Farm Zone D₁, and Area B, located in the South Tank Farm. Loading and inventory of finished products took place in the Marketing Area. Crude oil processing operations were suspended in February 1992, and fuel transport operations were suspended in August 1997.
2. The STF is located east of Carmenita Avenue and south of East Foster Road and occupies approximately 41 acres. The STF site was formerly used for product blending and storage use. The STF has undergone decommissioning, cleaning and removal of above ground storage tanks (ASTs) since early 2000. The STF has contained numerous underground storage tanks (USTs) and sumps, a former fuel service station, several pits and transfer pumps, and one storm water retention basin. Soil remediation will include removal and transportation of shallow impacted soils to an off-site, permitted disposal/recycling facility, and in-situ soil remediation of deeper impacted soils. The Golden Springs Development Company (GSDC) has obtained title to the STF from the Discharger during July 2001 for development of the STF into retail commercial, office/retail commercial, and research and development light industrial uses ("Intended Uses"). GSDC is currently negotiating to lease significant portions of the STF to a third party. The lease is conditioned upon the issuance of a Prospective Purchaser Agreement (PPA) by the Regional Board. A map depicting the STF is attached hereto as Figure 3.
3. Approximately 38,897 cubic yards of impacted soils are estimated to exist in the STF area within 7.5 feet below ground surface (an estimated 10 feet below future grade), including the

- remediation of lead-impacted soil in the Area B previously identified in the southwest part of the STF. Discharger will submit an "Unanimous Written Consent to Action Without a Meeting of the Board of Directors of Golden West Refining Company, a California Corporation" (Written Consent) showing it has allocated \$2,937,858 and \$2,873,000 for remediation of soil and groundwater contamination at STF, respectively.
4. In February 1985, the Regional Board issued Cleanup and Abatement Order (CAO) No. 85-17, which required the Discharger to conduct subsurface investigations and site assessments to detect and characterize groundwater contamination beneath the facility. In April 1991, CAO No. 91-079, issued administratively by the Executive Officer, required that the Discharger implement soil and groundwater investigations to determine the extent of contaminant migration, and remediate site-derived soil and groundwater contamination. CAO No. 91-079 was amended to reflect the compliance progress achieved by the Discharger, update the Cleanup and Investigation Activity Schedule, and continue Regional Board oversight of the remaining cleanup activities.
 5. On July 31, 1992, the Discharger filed a petition for reorganization under Chapter 11 of the U.S. Bankruptcy Code in the United States Bankruptcy Court. Cleanup and Abatement Order No. 93-082 was issued administratively by the Executive Officer on December 21, 1993, and superseded Order No. 91-079. This Order requires the Discharger to cleanup any on and/or off-site groundwater contamination originating from the site. It also requires the Discharger to implement a source elimination program to detect leakage from ASTs, USTs, and under ground pipelines, identify free product in the vadose zone, if any, and remediate any free product in a timely manner. These activities are being carried out in accordance with a ten-year time schedule and with annual planned expenditures specified as contained in the Discharger's Plan of Reorganization (Plan). The Plan was approved by the U.S. Bankruptcy Court on February 16, 1995, and became effective on February 28, 1995. Reorganized, the Discharger emerged from bankruptcy, and is performing its obligations under CAO No. 93-082. The Plan addressed groundwater contamination, continued free phase liquid hydrocarbon recovery, and a source elimination program.
 6. From approximately 1986 to present, numerous field investigations, including soil gas surveys, borings, geoprobes, and installation of groundwater monitoring wells have been performed at the STF. In 1986, O.H. Materials Corp. (OHM) conducted a subsurface investigation and geophysical surveys to characterize the geology in an area of lead-impacted soil in the southwest part of the STF. From 1988 to 1999, all sumps and USTs were removed, and soil samples were collected from the excavations. In 2001/2002, Levin Fricke, Inc. conducted a trench excavation and soil investigation during the alignment of the storm drain structure along the southern and western boundaries of the site. As part of the former USTs closures on April 3, 2003, CAPE Environmental (CAPE) performed an investigation that consisted of 12 sampling locations using direct push technology to maximum depths of 17 feet below ground surface beneath the removed sump locations. The soil testing results indicated that elevated concentrations of total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) remain in the subsurface.

7. On March 12, 2003, Regional Board approved the Preliminary Remedial Environmental Assessment Report and Remedial Action Plan for the STF, dated March 2, 2003. In June 2003, CAPE advanced nine direct push soil borings in the northeast portion of the site, beneath and adjacent to former AST 13408, as part of a supplemental site assessment. In August and September 2003, Earth Tech continued with supplemental site assessment activities that included a soil gas survey and 123 soil borings at the STF. On September 30, 2003, Earth Tech submitted a report titled Supplemental Site Investigation and Remedial Action Workplan (RAP) on soil impacts at the site based on previous and recent investigations. The results of this investigation and proposed RAP will be reviewed and evaluated by Regional Board staff and a determination will be made on the need for any supplemental soil and/or groundwater assessment at the STF and the adequacy of the RAP.
8. In July 1999, England Geosystems, Inc. (England) conducted a pilot test at the site, consisting of light non-aqueous phase liquid (LNAPL) recovery and soil vapor extraction (SVE). The Final Groundwater Remedial Design Report by England, dated May 18, 2001, and approved by the Regional Board on October 25, 2001, presented designs for vapor extraction and maximized LNAPL recovery by using upgraded automatic skimmer pumps. In May 2002, TRC developed a groundwater model to characterize and predict the fate and transport of free-phase petroleum hydrocarbons and dissolved phase constituents originating from the site from previous refinery operations as required by the CAO No. 93-082.
9. A Health Risk Assessment (HRA) was conducted at the request of the Santa Fe Springs Fire Department (SFSFD) and the Regional Board for the PUA, completed in 2002, and approved by the Office of Environmental Health Hazard Assessment (OEHHA) in July 2002. The human health risk assessment was prepared to evaluate current and future risks and to provide that the constituent concentrations listed in the Waste Discharge Requirements (WDRs) are also protective of human health. The PUA's human health risk has also been accepted by the SFSFD as applicable to the STF, assuming that the findings of investigations in the STF indicate similar contaminants and land use provisions for the SFT. The September 2003 RAP indicates that similar contaminants exist at the STF and land use provisions for STF are also same as the PUA.
10. Currently, all stormwater runoff from the STF flows to the southeastern corner of the facility into a retention basin (outfall 001) and passes through oil traps, trash screens, and straw filters prior to discharge to North Fork Coyote Creek. North Fork Coyote Creek is tributary, via Coyote Creek, to San Gabriel River, above the estuary, water of the United States. The stormwater is released to Coyote Creek in accordance with Order No. 00-051 (NPDES Permit No. CA0055115), adopted by the Regional Board on April 13, 2000. All other industrial process wastes and domestic wastes from this facility are discharged to the sanitary sewer system. Discharger also receives the groundwater from the City of Santa Fe Springs, Carmenita Road Underpass that is currently processed with its industrial wastes and is discharged to the sanitary sewer. The water flow is to be routed through a separate water treatment system currently under permit and design review by the Los Angeles County Sanitation Districts.

11. The refinery is underlain by several water-bearing zones. The uppermost water-bearing zone is referred to as the "semi-perched zone". The semi-perched zone is discontinuous across the site. The unit is located between 20 to 45 feet below ground surface. The underlying semi-perched zone is the Artesia Aquifer, which is a continuous water-bearing unit. The Artesia Aquifer located approximately 80 feet below ground surface. Free product has been identified in the semi-perched zone and in the Artesia Aquifer underlying the refinery. The third deeper water-bearing zone is the Silverado Aquifer. The Silverado Aquifer is utilized as a municipal source of drinking water and is located approximately 850 to 1,050 feet below ground surface. Sampling results from the deeper (Silverado) Aquifer did not indicate presence of any contamination. There are no drinking water supply wells within one mile of the site.
12. The Discharger commenced recovery of free product and dissolved phase petroleum hydrocarbons from the semi-perched zone in August 1983 and from the Artesia Aquifer in October 1985. Approximately, 61,550 barrels of free product have been recovered from the semi-perched zone and the Artesia Aquifer.
13. Halogenated organic compounds (cis-1,2-dichloroethylene, trichloroethylene, vinyl chloride, 1,2-dibromoethane, and 1,2-dichloroethane) have been detected in on-site Artesia Aquifer monitoring wells in the PUA in the vicinity of a former off-site landfill. In June 2003, the Discharger prepared, under the Regional Board's directive, a technical report on the evaluation of Artesia Aquifer impact by potential on-site contaminants and particularly fuel oxygenates. The report provides documentation that the presence of oxygenates in the groundwater under the former refinery is localized under the West Tank Farm, Marketing Area and partially under the STF.
14. 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, including the Central Basin, Coastal Plain Subunit, where the site is located. Existing beneficial uses for groundwater in this area include municipal and domestic supply, agricultural supply, and industrial process and service supply.
15. On June 29, 1981, the City of Santa Fe Springs adopted Resolution No. 4614 entitled the "Final Environmental Impact Report (EIR) on the Redevelopment Plan for Amendment No. 1 to the Consolidated Redevelopment Project", in accordance with the California Environmental Quality Act (CEQA)(Public Resources Code, Section 21000, et. seq.). In addition, the City of Santa Fe Springs' "General Plan Update, Final Environmental Impact Report" (EIR) dated September 7, 1994, addresses spills and soil and groundwater contamination issues at this site including soil and groundwater cleanup. Consequently, the Community Development Commission relied upon the two adopted EIRs when approving the GSDC development project. No substantial adverse impact to the environment from the Golden West Refining Company project, have been identified in the EIR. In addition, the City of Santa Fe Springs City filed a Notice of Determination on July 28, 1998, with the Office of Planning and Research in Sacramento, California in accordance with the CEQA. No substantial adverse impact to the environment was

identified in the EIR as a result of the 133 acres project, which is located on the southwest corner of Carmenita Road and Imperial Highway.

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 written views and recommendations.

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

IT IS HEREBY ORDERED, pursuant to California Water Code Section 13263 that Golden West Refining Company shall comply with the following:

A. REQUIREMENTS

1. Wastes discharged at the site for ex-situ bioremediation, such as land treatment or vapor extraction, and in-situ bioremediation, such as bio-venting or vapor extraction processes, shall be limited to petroleum hydrocarbons, and/or VOCs contaminated soil only and shall be conducted in accordance with a remedial work plan approved by the Executive Officer. Any land treatment process involving the introduction of nutrients and/or bacteria to soil, and soil aeration, shall be conducted in a manner such that no contaminants are released into surface water or groundwater.
2. No off-site soils shall be transported to the facility for treatment.
3. Soil closure shall not be granted unless site soils located within the zone are clean and any residual contaminants remaining in place are determined to be protective of groundwater quality and human health, as determined by the Executive Officer.
4. No soils excavated from the 41-acre STF shall be reused as backfill unless the soils meet all of the limits specified below.

<u>Parameter</u>	<u>Limits¹</u> <u>(mg/kg)</u>
Total Petroleum Hydrocarbons – Ranges:	
C ₄ - C ₁₂	1,000
C ₁₃ - C ₂₂	10,000
C ₂₃ - C ₃₂	50,000

¹ The Limits specified in Requirement 4 may be modified by the Regional Board's Executive Officer, based on site specific background concentrations, leachability factors, fate and transport assessment or health risk analyses. The site development will substantially cap the site 97%-98% with building slabs, roads, paved parking, or sidewalks. The health- based limits are based on the Health Risk Assessment values approved by OEHHA in July 2002.

Aromatic Volatile Organic Compounds:	
Benzene	1.5
Toluene	15
Ethylbenzene	70
Xylenes (Total)	175
Methyl Tertiary Butyl Ether (MTBE)	0.13
Semi-Volatile Organic Compounds:	
Naphthalene	50
2-Methylnaphthalene	50
Bis (2-ethylhexyl) phthalate	0.06
Polynuclear Aromatic Hydrocarbons (PAHs):	
Benzo(a)anthracene	2
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	29
Benzo(a)pyrene	0.29
Chrysene	200
Metals:	
Arsenic	12
Chromium (Total)	40
Chromium (Hexavalent)	40
Lead	500
Tetraethyl Lead	0.088
Mercury	4
Nickel	100
Selenium	5
PCB	1

Soils meeting these limits can be used to backfill up to two feet below ground surface. Soils concentrations exceeding these levels shall be legally disposed offsite.

5. The Discharger shall provide the Regional Board with a written technical closure report upon the completion of remediation activities at each development zone. Individual development zones may be closed independent of remediation activities undertaken or not undertaken at other development zones that are subject to the Waste Discharge Requirements. The Executive Officer shall review the closure report(s), and upon acceptance of the findings of the report(s) and satisfactory fulfillment of this Waste Discharge Requirements, provide the Discharger with a "No Further Action" letter for individual development zones.

6. Any excavated non-hazardous material disposed off-site shall be at a location specifically approved by the Executive Officer and in accordance with requirements that have been established by a California Regional Water Quality Control Board.
7. Any excavated hazardous waste shall be transported off-site to a legal point of disposal or recycling. For the purposes of this requirement, a legal point of disposal or recycling is one for which the requirements have been established by a California Regional Water Quality Control Board or the Department of Toxic Substances Control.
8. Neither the disposal/recycling nor any handling of waste on-site shall cause a condition for pollution at the site or unreasonable nuisance odor at the facility boundary.
9. Adequate facilities shall be provided to divert storm water run-off away from the treatment and excavation areas. Containment berms shall be constructed so as to surround the excavations and treatment units/cells to control run-on and run-off of storm water and/or water(s) used in the treatment process. During rainy weather, any impounded water shall be sampled and analyzed before discharge in accordance with the facility's NPDES permit.
10. The treatment area shall be bermed so that storm water falling directly onto the treatment area will be contained. Standing water within the contained treatment area shall be pumped out and removed to treatment facilities on-site, or disposed of at a legal disposal site as defined above.

B. 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 shall prevail.
2. A copy of these requirements shall be maintained at an on-site office and be available at all times to operating personnel.
3. In the event of any change in name, ownership, or control of these facilities, the Discharger shall notify this Regional Board in writing and shall notify any succeeding owner or operator of the existence of this order by letter; a copy of which shall be forwarded to this Board.
4. The Discharger shall notify Regional Board staff by telephone within 24 hours, followed by written notification within one week, in the event it is unable to comply with any of the conditions of this Order due to:

- a. Breakdown of waste treatment equipment,
 - b. Accident caused by human error or negligence,
 - c. Other causes such as acts of nature, or
 - d. Site construction or development operations.
5. At least 90 days prior to any closure of the waste management units, the Discharger shall submit operation plans for: precipitation and drainage controls; any required cover; and a closure and post-closure maintenance plan (if necessary) acceptable to the Executive Officer as set forth in Title 27, California Code of Regulations.
 6. In accordance with Section 13260 of the California Water Code, the Discharger shall file a report with this Regional Board of any material change or proposed change in the character, location or volume of its discharge.
 7. In accordance with Section 13267 of the California Water Code, 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 shall be subject to periodic revisions as may be warranted. All technical reports submitted to the Regional Board shall be signed by either/or a registered Civil Engineer, registered geologist, or certified engineering geologist.
 8. The Regional Board and/or its authorized representative(s) 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.
 9. In accordance with Section 13263 of the Water Code, these waste discharge requirements are subject to periodic review and revision by this Regional Board.
 10. These requirements do not exempt the Discharger from compliance with any other laws, regulations, or ordinances which may be applicable. They do not legalize these waste treatment and disposal facilities and they leave unaffected any further restraints on those

facilities that may be contained in other statutes or required by other agencies. These requirements do not limit, waive, or otherwise lessen the Discharger's responsibility for contamination on, at, or under the site, including the groundwater there under.

I, Dennis A. Dickerson, 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 4, 2003.

Original Signed By

Dennis A. Dickerson
Executive Officer