CAD 042245 001 . 6D

Ms. Alisa Greene H-4-4
Chief, Corrective Action Section
EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105

April 17, 1992

Re: Response to EPA Corrective Action RCRA 09-91-0005

Dear Ms. Alisa Greene,

You will find enclosed a revision of the Current Conditions Report for Omega's Whittier facility incorporated the requested corrections.

The work has been completed by Omega and copy has been sent to Mesa. However Omega does not have the financial capability to pay for Mesa's work at the present time. Omega has paid all the funds required by Mesa for the Current Conditions Report agreement with them. Mesa has provided an agreement to work on the RFI Workplan which Omega can not financial adhere to. The time frame of payment to them is beyond Omega's current financial condition. As funds can be generated in excess of requirements currently mandated by the Chapter 11, we will give every effort to have Mesa review the documents.

I can not provide you an exact date when the efforts of Mesa can be paid from ongoing business. As part of a Consent Agreement with Cal-EPA we are no longer accepting hazardous waste from off site facilities. Our business has been reduced to 1/10th of the monthly business. We are trying to generate additional business with the reclamation of CFC and related refrigerants. However, management's time is totally occupied with producing extensive reports for every agency know to mankind. So very little effort can be directed in producing revenue to pay for the Mesa's work.

We submitted the RFI workplan in good faith within the time frame requested. We used the Southern California Chemical workplan as a model. Given the short time frame in which Omega is required to provide to EPA various documents we used SCC workplan. More work is being done to fine tune the document to the specific condition of Omega. We will continue to work on the Draft workplan to submit a revised draft.

Omega is providing its best efforts under very difficult and financially restrained conditions. We feel that everything is being done to be in compliance. We will continue to provide you information and data within the financial conditions that Omega is operating under.

Omega has included you on the Operating and Interim reports required by the Bankruptcy.

Yours,

Dennis R. O'Meara

Enclosure

Omega Recovery Services
12504 East Whittier Boulevard / Whittier, California 90602 / (213) 698-0991 / FAX (213) 696-1908

CURRENT CONDITIONS REPORT
OMEGA CHEMICAL CORP.
12504 E. WHITTIER BLVD.
WHITTIER , CA
EPA I.D. NO. CAD042245001

Prepared for

US EPA Region IX

April 17, 1992
Revision 1

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1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

This Current Conditions Report is submitted to the U.S. Environmental Protection Agency (EPA) in response to the Administrative Consent Order No. RCRA-09-91-0005 with Omega Chemical Corp. The report provides information pertinent to the Omega Hazardous Waste Treatment Facility located at 12504 E. Whittier Blvd. , Whittier, California. .

1.2 BACKGROUND

The Omega site lies within the boundaries of the City of Whittier. The entire treatment site (the site) consists of approximately 1.0 acre which is permitted on interim status permit to receive various types of Hazardous waste for treatment.

The site was has been recycling and treating various forms of industrial and commercial types of chemicals since the mid 1960's and was permitted under RCRA as an interim status facility in 1980. It received and processed both non-hazardous and hazardous materials as classified by RCRA and California state codes. During the early years of its operation, the major type of processing was halogenated industrial solvents and refrigerants.

Prior to August, 1976 the facility operated as Bachelor Chemical Processing. Bachelor Chemical was operated as a sole proprietary ship by Jim Bachelor. After that date it was acquired by Omega Chemical Corp. Omega made several improvements to the facility to enhance the facility in regards to safety and environmental conditions. Omega purchased the property at the site in 1987 from the Rippy Estate. Omega continued to make improvements to the physical structure of the site which included concreteing the entire site. Omega continued to operate the facility as Treatment, Storage Facility under the RCRA and California Codes.

In 1991 Omega entered into separate Consent Agreements with the EPA and Department of Health Services (DHS). The consent agreement with EPA required investigation of the site for possible contamination.

The EPA issued an Administrative Order on Consent pursuant to Section 3008(h) of RCRA for the Omega site in 1991. This Current Conditions Report is submitted in response to the order.

1.3 REPORT ORGANIZATION

This Current Conditions Report follows the general format outlined by the EPA in Attachment 2 to the Administrative Order on Consent, U.S. EPA Docket No. RCRA-09-91-0005. The facility background, nature and extent of contamination, and interim measures are described in Sections A, B and C, respectively. Section I.0 is included as an introduction to identify the purpose of this report and to provide a summary of previous investigations and studies pertaining to site.

1.4 SITE INVESTIGATIONS

Several investigations have been conducted at the site by various independent contractors to determine environmental concerns at the site. Following is a summary of the purpose and scope of the various investigations to date at the site.

"Investigation of Subsurface Soil Contamination at Tank Farm, Omega Chemical Corporation." LeRoy Crandall and Associates, June 26, 1985. This report presents an investigation of the subsurface soils beneath the tank farm at the Omega site.

"Soil Analysis after Removal of Underground Tank"; Leighton and Associates, August 1987. This report conducted soil sampling beneath one removed underground storage tank at the subject site. The purpose was to collect and analyze soil samples from beneath the underground tank.

"Report on Soil Vapor Survey at Whittier Facility." ERT, February, 1988. This report is the results of a soil vapor survey at the Omega site.

"Site Assessment Investigations at Omega Site," ENSR Consulting & Engineering , October, 1988. The purpose of this investigation was to collect groundwater and subsurface soil samples for laboratory analysis from which to determine any levels of contamination.

"Preliminary Assessment at Omega Chemical Site" Ecology and Environment, Inc. May , 1989. The purpose of this investigation was to provide to EPA an independent preliminary assessment of the Omega Chemical Site.

1.5 LIMITATIONS

The Current Conditions Report provides information for the site and on the facility background, the nature and extent of contamination, and the interim measures which have been taken to protect human health and the environment.

Our findings are limited by the authorized and available time for preparation and the available site-specific data. The data has been limited to reports prepared by others and information gathered through investigations on various public and private data. No warranties are implied or expressed in this report. Any discussion or conclusions presented herein are subject to revision in the light of new information which may be developed in the future.

2.0 FACILITY DESCRIPTION

The legal description of the property is Lots 3, and 4 of Tract 13486, City of Whittier, Los Angeles County, California. This property is owned and controlled by Omega Chemical Corp. It is located at 12504 E.Whittier Blvd., Whittier, California 90602, 200 feet in width and 220 feet in depth. There are no buried utilities on the site. There are several above ground tanks. There are no underground tanks at the site. All area not occupied with buildings is cemented. All access to the site is controlled by gates on the Whittier Boulevard boundary. Fences surround the entire site with no gate access except at the Whittier Street location.

There are two buildings located on the site. A warehouse building which is 50 feet by 165 feet. An administrative building 80 by 30 feet. The facility is located in an area which is zoned heavy industrial M-1 by the City of Whittier.

There are attached various figures which depict the property.

Figure 1 is a site location and topographic map of the facility.

Figure 2. is a zoning map of the location from the City of Whittier.

Figure 3 page of Tract 13486 showing the lots 3 and 4.

Figure 4 facility layout and surrounding area.

Figure 5 Aerial photo of the existing facility.

Figure 6 Aerial photo of the surrounding industrial area.

Figure 7a Depicting major waste tanks and treatment units original location on the facility.

Figure 7b Depicting major waste tanks and treatment units current location on the facility.

Figure 7c is a picture of the 5 waste tanks in their original location.

3.0 FACILITY HISTORY

3.1 History -

The Facility is located in Whittier, California (population 77,671, 1990 Census) and within one (1) mile of the City of Santa Fe Springs, California (population 16,400, 1990 Census). Omega owns and operates the Facility, which consists of 40,000 square feet of land. At the Facility, Omega recycles spent organic chemicals (primarily chlorinated hydrocarbons and chlorinated fluorocarbons) to purity specifications appropriate for reuse. In addition, Omega reduces the quantity and toxicity of some wastes that cannot effectively be recycled. Omega uses a variety of chemical, thermal and physical treatment processes to recycle and reduce wastes.

Omega has operated at the Facility since 1976 when it bought out Bachelor Chemical Processing, a company that operated a business similar to Omega's at this location for approximately five (5) years. Omega leased the original Facility property until 1987 when it purchased it from Fred R. Rippy. Rippy had purchased the property in 1963. A business that converted vans to ambulances operated at the Facility between 1966 and 1971. Prior to 1963, Sierra Bullets, Inc. was located at the Facility. Although the nature of its operations is unknown, Sierra Bullets allegedly stored kerosene in the underground tank that was removed from the Facility in 1987.

Omega has agreed as part of agreement with the Cal-EPA to voluntarily not to further accept off site hazardous waste for treatment. This Interim Status Permit is continued subject to sale to another operating entity. Although Omega continues to process the waste currently stored on its facility. These hazardous wastes are being processed to products or segregated and classified for shipment to licensed off site hazardous and non hazardous waste treatment facilities.

Omega currently reclaims Chlorofluorocarbon (CFC) and other types of refrigerants as well as related non hazardous recycling operations. These CFC and Hydrofluorochlorocarbon refrigerants are not currently considered hazardous waste by the EPA. The CFC's were exempt from the hazardous waste classification by EPA in February , 1991.

3.2 Regulatory History

The Facility originally consisted of 20,000 square feet of land . On January 25, 1989, Omega filed a Notice of Intent to Apply for a Specified Hazardous Waste Project with the California Department of Health Services ("DHS"). This project was designed to double the size of the Facility by expanding Omega's operations onto contiguous property of approximately equal size to the southeast of the original parcel of land. DHS authorized the project only for operations related to Omega's status as a generator; no treatment, storage, or disposal units regulated under RCRA were authorized for the new portion of the Facility. The Facility is currently occupying this expanded area.

Omega has filed at least 5 various Part B applications to the DHS since 1981. These applications were submitted to show changes and plans for modifications to the treatment facility.

The most recent submittal on October 29, 1990, Omega filed Part B of the RCRA application for the Facility (the "Part B"). In the Part B, Omega proposed to expand the Facility further south and west , which would approximately double the size of the Facility from 40,000 to 80,000 square feet. (operation Plan, Part B of RCRA Permit Application for Omega Recovery Services, October 29, 1990.)

3. 3 Facility-Generated Wastes

The overwhelming majority of facility-generated wastes are, and will continue to be, the byproducts of solvent recycling activities. These waste streams include dilute aqueous waste of low BTU value, still bottom residuals, and non-recyclable organic (primarily halogenated solvent) wastes. Presently, these wastes are manifested off-site for use as supplemental fuels or for destructive incineration; other options, including on-site treatment, may be used in the future. Other sources of facility-generated wastes include laboratory wastes that are accumulated in a 55-gallon drum and contaminated water or waste captured in secondary containment areas. The types and quantities of facility-generated wastes that were manifested off-site in 1989 are summarized on Table 1. Additional types and composition of wastes are listed in Figure 8 Hazardous Wastes Compositions

TABLE 1
TYPICAL TYPES OF WASTES GENERATED BY OMEGA

Generator: Omega Recovery Services Date: September 15, 1989
Address: 12504 E. Whittier Blvd
Whittier, CA 90602

Contact/Phone EPA Waste Code(s): D001, F001,F002,F003, & F005

EPA ID No. CAD042245001

Source: Industrial Solvent Recycling

Qualification Analysis for Lebec.

Organics	
Acetone	1.9%
Isopropyl Alcohol	5.1%
Methylene Chloride	1.5%
Methyl Ethyl Ketone	3.5%
Tetrahydrofuran	0.3%
1,1,1 Trichloroethane	2.5%
Trichloroethylene	0.7%
Methyl Isobutyl Ketone	1.7%
Toluene	7.2%
Butyl Acetate	2.7%
Glycol Ether PM Acetate	0.6%
Ethyl Benzene	2.7%
Xylene	16.0%
Cyclohexanone	0.3%
C9-C10 Alkyl Benzenes	5.2%
Tributyl Phosphate	4.7%
C6-C16 Aliphatics	43.4%
Benzene	<0.1%

Heat Content	10,700	Btu's /lb
Viscosity	25	cp
Solids	9	% volume
Sulfur	0.2	% Wt.
Nitrogen	<0.1	% wt.
Halogens	4.4	% wt. as Cl
Aqueous Extraction	7	pH
Water (separated phase)	2	% volume
Ash	2.04	%wt.
Specific Gravity	0.90	gr/ml
PCBs	<50	PPM

Metals

Pb	<100	ppm	Ba	<100	ppm
Zn	400	ppm	Ti	200	ppm
Cr	<100	ppm	Fe	200	ppm
Se	<200	ppm	Cd	<100	ppm
V	<100	ppm	As	<200	ppm

A most recent year 1989 listing of wastes manifested to off-site facilities is shown in Table 2.

The largest amount of waste type has remained industrial type solvents that Omega recycled for reuse as solvent or fuel.

TABLE 2
Hazardous Wastes Manifested Off-Site from the OMEGA Facility in Calendar Year 1989

DHS Code	Waste Description	Quantity
134	Aqueous solutions with total organic residues less than 10%	19,300 gal
211	Halogenated solvents	1,600 gal
251	Still bottoms with halogenated organics	47,245 gal
252	Other still bottom wastes	665,000 gal
352	Other organic solids	120 tons

3.4 Waste Management Units -

The configuration and kinds of solid waste management units have changed during the time Omega has operated at the Facility. Current Facility diagrams (Figures 4 and 7), and lists of units described in the Original Part A, the Revised Part A, and the Part B help to document the changes in types and locations of waste management units at the Facility.

The Original Part A lists the following hazardous waste management process units although their exact location is not shown:

Table 3 List of Major Waste Management Units located at the Facility.
25,000 gallon storage tank (Consisting of 5 5,000 gallon tanks) Identified as T1 to T5
300 gallons per hour thin film chemical separators (Fat Jack) Identified as P-1
50 gallons per hour distillation column 50 ft. tall (Paul) Identified as P-2
50 gallons per hour distillation column 35 ft. tall (Kirk) Idenitified as P-3
40 gallons per hour distillation column 40 ft. tall (Craig) Idenified as P-4
40 gallons per hour distillation column 25 ft. tall (Elvis) Identified as P-5
30 gallons per hour steam distillation units (Steve) Identified as P-6
30 gallons per hour distillation column 5 ft. tall (Jake) Identified as P-7

The original locations of these units is shown on Figure 7a. The current locations of these units is shown on Figure 7b.

The waste storage units T-1 to T-5 were moved to their current location.

The Treatment Units Elvis - P-5 and Steve - P-6 were dismantled. They are no longer in use.

The currently submitted Part B states that the existing units at the Facility for storage, recycling, treatment and transport of wastes include:

3100 drum capacity drum storage areas
31 waste storage/treatment tanks
3 distillation units
3 thin film evaporation units
1 reactor
I liquid-liquid separator unit.

Figures 7 a shows the original location of the 5 - 5,000 gallon tanks and Figure 7b. shows their current location on the site.

3. 5 Waste Management Practices -

Wastes that the Omega accepts at the Facility are usually organic solvents and chemicals, and aqueous wastes with organic waste constituents. These wastes arrive at the Facility in containers and bulk truckloads and are unloaded to container storage areas or storage tanks. Omega also generates its own containerized wastes from intermediate steps of treatment processing. Omega pumps bulk materials to a holding tanks and then schedules the wastes for treatment in one of several treatment units or transfers the wastes to offsite facilities for further treatment or disposal.

From storage, Omega transports containerized wastes to treatment areas with fork-lifts. Empty drums are reconditioned or crushed and disposed of off-site as non-hazardous or hazardous waste depending on character and conditions of the drums/containers as to whether they are hazardous or non-hazardous..

Some containers hold both liquid and solid wastes such as paint solvent and oil sludges. Omega decants liquid into a treatment tank or other containers for further processing, and consolidates the remaining solids with compatible solids in other containers. Omega sends the wastes in containers and bulk tank trucks to off-site treatment facilities .

3.6 Spill and Discharge History

Figure 7a shows the original location of units at the Facility in 1987. Investigations for contamination (described in paragraph below) occurred at the same time the Facility was so configured. Prior to 1987 , storage areas were paved with asphalt that was not impervious to all possible hazardous waste migration. Ground beneath the tank storage area (as shown in Figure 7a) in the southwest corner of the Facility (as configured in 1987) was noted as having a deteriorating asphalt base during an April 1985 DHS inspection for Interim Status Document Compliance. A subsequent investigation in the southwest area attributed contamination to accidental spillage of chemicals stored in the tank farm. (LeRoy Crandall and Associates, Investigation of Subsurface Soil Contamination at Tank Farm, Omega Chemical Corporation, Whittier, California, June 26, 1985.)

In a report on soil and ground water contamination dated 1988, Omega's contractor found ground water contamination to be related to soil contamination. Hazardous wastes found in soils and ground water are the same as those hazardous wastes listed in Omega's Original Part A and Revised Part A. Soil contaminated with hazardous waste was found beneath two drum storage areas. The ground water monitoring well which detected significant contamination is located

downgradient of drum storage areas that existed in 1987. (ENSR Report on Site Assessment Investigations at the Omega Recovery Facility, October 1988.)

4.0 - ENVIRONMENTAL SETTING

4.1 Location and Land Use

The site is approximately 2.7 miles east of U.S. Federal Highway 605 on Whittier Boulevard within the city boundaries of Whittier, Los Angele County, California. The location is shown in Figure 1.The site consists of approximately 1.0 acre. Omega Chemical Corp is the owner and operator of the facility.

Property Boundaries

The Site is owned by Omega Chemical Corp. and has been operated by that corporation since August , 1976. Property boundaries and owners of adjacent property are identified in Figure 3 and 4 The site and adjacent property are all zoned for heavy industrial use by the City of Whittier.

4.2 Local Ecology

The site is located in a highly urbanized area consisting of industrial land uses. There are no environmentally sensitive receptors, such as endangered species, critical habitats, or wetlands, within one mile of the site. (Ecology and Environment report)

4.3 Topography and Surface Drainage

The site topography is shown on Figure 1 . Also shown on Figure 1 are surface drainage patterns, elevation contours, and natural ground slopes . The site is situated on a gradual slope with a total gradient slope of less than 1/2 of one per cent on the property feet from the Whittier boundary to the boundary on the west of the property.

There are no waterways, wetlands, or floodplains on the site or within the general area..

4.4 Climate

The climate of the Whittier Area which is part of the San Gabriel Valley is categorized as semi-arid with an average annual rainfall of between 13 to 20 inches. Precipitation occurs mainly during the winter and spring months. The National Oceanic and Atmospheric Association (NOAA) climatological station nearest to the facility is located in Whittier.. This station has compiled many decades of of meteorological records.
The annual wind conditions are shown on Figure 9 a Windrose Map of Whittier. The average annual precipitation at the station is 15.43 inches, and ranges from a low of 4.86 inches to a high of 36.73 inches. A 24-hour/25-year storm event of 5.61 inches (0.47 feet) has been estimated from station records (see Figure 10). The average monthly temperatures in the San Gabriel Valley range from 41°F to 89°F (see Figure 10).

The combination of climate and alluvium supports only sparse yucca-sumac types of vegetation near the facility.

4.5 Surface Water Hydrology

The facility is not located in any floodplain. The closest body of surface water is the San Gabriel River which is 2.5 miles west of the site. All surface water on the site controlled through a containment system.

To contain any rainwater which would fall on the site, provision was made for all rain which falls on operating and storage areas to be collected by the diked areas from where it would be pumped to tank storage areas. These tanks are stainless steel tanks located in the east yard. They are designated as T-A to T-F in Figure 7b. All of the tanks in these areas are elevated on legs or on structures above the surface so that they can continually be monitored for possible leakage and were designed so that they will be restrained against flotation forces if they are empty.

There is a concrete sump where the rainwater is pumped to these tanks in the eastern yard. It is designated as S-1 in the Figure 7b . This sump is approximately 1 1/2 feet square and 9 inches deep. This is to provide a low point pumping location. It is usually dry except when it rains. When it rains the water is pumped from this collection point to the various tanks T-A to T-F. The

Rainwater which falls on the roofs of the processing buildings and warehouse office are allowed to go directly to the storm drain system . All other water, except that falling on planted areas and retained there, will be captured and impounded. The maximum amount of rainfall in 24 hours recorded in this area of Los Angeles County during the 41 year period of record, 1940 to 1981. Extrapolation to a 100 year period suggests a design rainfall of 6.4" in a 24 hour period.

Because of the large dilution of potential materials spilled on the surface by rainfall, the use of conventional materials can be considered for the rainfall containment and disposal systems.

Dikes are in place around the entire facility. This is to contain all rain run off and any spills. In addition, there is another dike around the major storage tanks.

4.6 Geology

The Omega facility is located within the greater San Gabriel Valley, which is physiographically defined to the north by the San Gabriel Mountains, to the north by the Puente-Repetto Hills Complex.

Physiographically, the property is situated on the alluvial plain of the Puente Hills, which are located approximately 1.4-miles to the northeast. The Puente Hills have been uplifted along the northwest trending Whittier fault zone. These hills. are composed predominantly of the marine Miocene Puente Formation, consisting of sandstones and siltstone. The site is situated on Pleistocene nonmarine alluvial gravels, sands and silt/clay originating from runoff of the Puente Hills.

The geology beneath the facility consists of thick series sandstone, siltstone, and conglomerate beds west of Hacienda Boulevard is named tentatively as middle Puente. It represents a facies change of the eastern section with coarsening to the west The distinction in the lithology of the two eastern units disappears in the west as the amount of coarset material increases. A fault of

unknown displacement as shown on the Figure 11 accentuates the difference between the series east and the series west of Hacenda.

The top of the western section is the base of a medium grained brown sandstone approximately 50 feet thick marking a change in lithology to the thinly bedded upper Puente sandstone and siltstones of the overlying beds.

There is the Whittier Fault which is located over 3000 feet from the Omega facility and the site is not located within an Alquist-Priolo Special Studies Zone (see Figure 12). The dominant structural feature of the San Gabriel Valley area is the frontal fault zone termed the Sierra Madre Fault Zone, along which the San Gabriel mountains have been uplifted. Further study shows that there are no faults within 200 feet of the Omega facility.

Figure 11 shows that the closest fault to the site is the Whittier Fault which is over 2 miles from the facility.

4.7 Hydrogeology

A information for the depth to Ground water was obtained from California Department of Water Resources, Los Angeles Division. A search of the records provided the following data. A well location map for the Whittier Quadrangle showed that there is only one active well that lists data that is within one mile radius of the site. (See Figure 13). The data from the well data is shown in Table 4. The original raw data is shown inf Figure 13 a and b. This well is not currently being used for water use. The original intent of the well was for petroleum studies in the 1930's. The last available data from the California Department of Water Resources is shown as June 1987 and prior to that is June 1984.

The depth to ground water is shown in Figure 14 which is taken from the "Ground Water Geology of the Coastal Plain of Los Angeles County Appendix A". This was published in June 1961 by Department of Water Resources as Bullentin #104. It is now out of print. It shows the various depths to different aquifiers under the Omega site. The depth to the Jefferson Aquifier is approximately 300 feet. The depth to the Lynwood Aquifier is over 400 feet.

Figure 15 Location of Aquifers

Figure 16 Groundwater Contours

TABLE 4 WATER DATA FROM WELL NUMBER 2S/11W 29E5

Specification	June 1987	June 1984
Dissolved Hardness	329 mg/l	429 mg/l
Dissolved Calcium	97.7 mg/l	122 mg/l
Dissolved Magnesium	19.7 mg/l	29.7 mg/l
Dissolved Sodium	74.8 mg/l	57.0 mg/l
Dissolved Potassium	4.4 mg/l	3.9 mg/l
Total Alkalinity as Calcium Carbonate	179 mg/l	172 mg/l
pH	7.7	7.8
Sulfate	164 mg/l	217 mg/l
Chlorine	75.0 mg/l	91.0 mg/l
Nitrate	N/A	19.9 mg/l
Fluorine	0.3 mg/l	0.3 mg/l
Boron	0.23 mg/l	.18 mg/l
Dissolved Solids	570 mg/l	690 mg/l
Conductance	950 mohms	1050 mohms
Dissolved Silica	1101 mg/l	1101 mg/l

The Omega site is located in the Whittier area of the Central Basin hydrologic area. The upper Pleistocene Lakewood formation crops out in the area of the site. It consists of.continental deposits of late Pleistocene age and includes the Artesia and Gage aquifers and possibly portions of the Bellflower aquiclude. To the west of the site, within one to two miles, the sand and gravel.Gospur aquifer extends to a depth of about 145 feet. The San Pedro formation, composed of interbedded layers of sand, gravel, and clay of marine origin, underlies the entire Whittier area and includes the Lynwood, Silverado, and Sunnyside aquifers.

The Bellflower aquiclude is a misnomer. Although it consists of clay and sandy clay, it may be either absent in areas or so thin and discontinuous that groundwater and contaminants can be transmitted through it at an appreciable rate . Permeability data for this area is scarce but based on data for the some forimations in other areas of the Central Basin, the permeability rates are probably greater than 10^{-7}centimeters per second .

The net seasonal precipitation of the Whlttier area to approximately 0 Inches per year . Recharge of the Central Basin occurs primarily as a result of the spreading and injection of storm water runoff, imported water and reclaimed water, rather than the infiltration of precipitation

The depth to groundwater at the site was estimated to be 56 feet below land surface, based on data from Los Angeles ; County Flood Control District wells. A hydrograph of well 3S/11W-6P2 shows a water-level high of 77 feet below land surface, with a seasonal variation of about eight feet. The test drilling on the site reached water at approximately 76 feet. There is no water analysis at this well site the closest recent water analysis is at well 3S 11W 06N01S

Eighteen wells, belonging to eight Municipal vater supply companies, are located within a three-mile radius of the site. The City of Santa Fe Springs has three wells between one and two miles from the site 2S/IIW-3OR3, 2S/12W-25Q5, and 3S/IIW-6D3. All of the weils feed into the main distribution system that serves a resident population of around 100,000 and a workforce population of around 100,000. The wells draw water from the Lynwood, Silverado, and Sunnyside aquifers.

There has been no observed release of hazardous wastes to groundwater that is hydraulicly connected to an acquifier from this site. Based on the above hydrogeologic information, there is no barrier to prevent contaminants in the soil from migrating to the drinking water aquifers, buth that may be a slow process. Some contamination has already entered the soil beneath an old underground storage tank and under the tank farm as a result of the decomposition of part of the old asphalt base. A new concrete base may prevent additional soil contamination and may make the potential for an observed release of contaminants to groundwater low.

4.8 Groundwater Monitoring System

There is at present no formal groundwater monitoring system. As part of the workplan, monitoring wells will be placed on the site.

5.0 Existing Degree and Extent of Contamination

5.1 Previous Investigations

Documentation of Releases

Results of soil and ground water sampling show that there have been releases of hazardous wastes into the environment at or from the Facility.

Sampling Results from Soil

Underground storage tank - Omega removed one 500 gallon underground storage tank from the Facility in August 1987. The tank was manufactured in 1956 but allegedly not used after Fred R. Rippy purchased the Facility in 1963. The bottommost part of the tank was approximately 8 feet below ground surface (11bgs"). The tank was heavily corroded around the top and contained residual liquid and sludge in the bottom. The liquid in the tank contained several volatile and aromatic organic compounds. The tank on removal was intact and displayed no leaks. On removing the tank the from the ground, the earth surrounding the tank showed no visible evidence of leaks or contamination. When the tractor was lifting the tank from the ground it crushed the tank causing it to rupture and spill on the surrounding dirt. This dirt was removed and disposed of

properly. The soil was tested after the tank was removed. It included the area where the spill from the removal from the tank occurred. After review of the data by the local agency (a copy of that letter is attached as Figure 16 D , Omega was allowed to fill in and close the hole. Trichloroethane ("TCA") was detected in the sludge of the tank. Analysis of soil samples taken near the location of the tank revealed the following volatile organic compounds:

Table 5
Concentrations of Compounds Found During Removal of Underground Storage Tank

Compound	Sample E-1 10 feet below land surface (mg/kg)	Sample E-2 12 feet below land surface (mg/kg)
Total Petroleum Hydrocarbon	11	300
Benzene	ND	ND
Toluene	ND	0.4
Ethyl Benzene	ND	0.3
Total Xylenes	ND	0.4
1,1,1-Trichloroethane	ND	4.0
Tetrachloroethylene (PCE)	0.24	2.7
Methylene Chloride	ND	1.3
1,1-Dichloroethane	ND	0.12
Acetone	0.05	13.8

(ND - none detected with limits of detection ranging between 5 nd 50 ug/kg as specified for each chemical in the report.)

Figure 17 shows the locations of E-1 and E-2, directly below the former location of the excavated tank. Except for total petroleum hydrocarbons, the compounds found during removal of the underground storage tank are all hazardous waste constituents as listed in Appendix VIII of 40 C.F.R. Part 261. (Leighton & Associates Closure Report, September 23, 1987.)

Soil borings - In March 1988, Respondent's contractor, ENSR, drilled soil borings at locations B-1, B-2, and B-3 (shown on Figure 18). B-1 is located between the above ground tank farm in the southwest corner of the Facility, and a drum storage area (as the Facility was configured in 1987). B-2 is located about 25 feet north of B-1 in a drum storage area. B-3 is located about 35 feet east of B-2 in another drum storage area. Samples were collected every 5 feet bgs and were selected for analysis based on photoionization detector results and visual/olfactory evidence of contamination. Analysis of the samples detected several compounds including the following chlorinated hydrocarbons: methylene chloride, 1,1,1-trichloroethane, trichloroethylene, and tetrachloroethylene. Each of these compounds is listed as a hazardous constituent in Appendix VIII of 40 C.F.R. Part 261, as well as being listed by Omega in the Original Part A and/or Revised Part A. In most cases, concentrations of contaminants increased with depth. (ENSR, Report on Site Assessment Investigations at the Omega Recovery Facility, October 1988.)

DHS Notice of Violation - On April 5, 1985,_ DHS issued a Notice of Violation and Directive to Comply to Omega.

In response to the April 5, 1985 Notice of Violation, Omega contracted with LeRoy Crandall and Associates to conduct an investigation of the Facility. Analyses of soil samples taken during this investigation showed maximum contamination at the depth of one foot (at Boring No. 5, southeast of the aboveground tankfarm just within the property boundary) as follows:

Table 6 Soil Analysis results from LeRoy Crandall

Methylene chloride	4.49 mg/kg
1,1,1-trichloroethane	848.00 mg/kg
trichloroethylene	358.00 mg/kg
tetrachloroethylene	2064.00 mg/kg
1,2-dichloroethane	25.00 mg/kg

Each of these chemicals is listed as a hazardous constituent in Appendix VIII of 40 C.F.R. Part 261. Contamination of the soils was caused by accidental spillage of chemicals in the tank farm and ponding of rainwater in the tank farm. (LeRoy Crandall and Associates, Investigation of Subsurface Soil Contamination at Tank Farm, Omega Chemical Corporation, Whittier, California, June 26, 1985.)

Soil Vapor Survey Results

In January 1988, Omega's contractor, ERT (a division of ENSR), conducted a soil vapor survey at the Facility to screen near-surface soils for hydrocarbons. ERT sampled 18 points and analyzed these samples for hydrocarbons in the vapors extracted from soils. Analyses of the samples detected significant levels of hydrocarbon vapors in the soil under most of the Facility, with the levels becoming progressively higher toward the southwest part of the Facility. (Figure 19 shows the location of the sampling points.) Two sampling points, S-15 and S-16, produced "very substantial relative" readings. (ENSR Soil Vapor Survey Report, February 1988.) It is unlikely that the leaking underground tank caused the high readings at S-15 and S-16 suggesting another as yet unspecified source. The source of hydrocarbon vapors can be hazardous waste constituents listed in Omega's Original Part A and/or Revised Part A. For example, waste solvents and some pesticides are chlorinated hydrocarbons and could produce vapors such as those which were detected.

Ground Water Sampling Results

In June 1988, Omega's contractor, ENSR, drilled a ground water monitoring well (see Figure 19), BMW-1, located near the westernmost corner of the 20,000 square foot section that constituted the original portion of the Facility. The location of the well is hydraulically downgradient of hazardous waste drum storage areas that were in existence in 1987 and hydraulically upgradient of the excavated underground tank and aboveground tank farm. Samples of ground water from BMW-1, analyzed for purgeable organics using EPA Method 624, showed the following contamination:

Table 7 Groundwater Sampling Results

Date Samples Taken	6/14/88		6/16/88		6/21/88
Compound					
Methylene Chloride	650	ug/l	260	ug/l	280 ug/l
Trichlorofluoromethane	1,540	ug/l	1,718	ug/l	ND
1,1-Dichloroethylene	1,080	ug/l	836	ug/l	510 ug/l

1,1,1-Trichloroethane	2,080	ug/l	2,150	ug/l	2,200	ug/l
Trichloroethylene	258	ug/l	160	ug/l	120	ug/l
Tetrachloroethylene	1,030	ug/l	667	ug/l	510	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane	5,240	ug/l	ND		ND	
trans- 1,2-Dichloroethylene	ND		9	ug/l	ND	
Chloroform	ND		24	ug/l	ND	
Acetone	ND		ND		160	ug/l

(All other compounds were Non-Detect (ND))

Each of these compounds is listed as a hazardous constituent in Appendix VIII of 40 C.F.R. Part 261. They are also listed in Omega's Original Part A and Revised Part A.

The well was cemented in after the results were obtained to reduce the possibility of direct contamination to the soil through the well.

Ground water contaminant concentrations exceed the most recently established health-based criteria for the following: methylene chloride, 1,1-dichloroethylene, trichloroethylene and tetrachloroethylene (as published in Appendix A in the proposed Subpart S Corrective Action Rule, 55 Fed. Reg. 30798 (July 27, 1990)). The subsurface investigation and analytical results from the soil and ground water samples suggest that the soil and ground water contamination are directly related. (ENSR, Report on Site Assessment Investigations at the Omega Recovery Facility, October 1988.)

The report from Mesa2 is included in Appendix A which describes their investigations.

6.0 Potential Migration Pathways

Hazardous wastes and/or hazardous constituents identified above may further migrate from the Facility into the envirorment in the following pathways: air; soil to ground water; ground water to drinking water; and direct contact. Direct contact is limited pathway because the Facility is fenced around the entire site.. The gates to the Facility are locked during operations during the day and night. There are a variety of organic chemicals stored in drums and tanks are stored on site. Nearby sensitive receptors are at the following locations: Kaiser Permanente Medical Facility recently located near the Omega facility. The parking lot for the site is adjacent to the facility. The actual medical facility is located 300 feet west of Omega. This facility only operates as a day clinic. Skateland, a commercial skating rink adjacent to the Facility; Intercommunity Hospital within 0.5 miles west of the Facility; three elementary schools and two high schools within one mile of the Facility; and several additional elementary schools, public parks and Whittier College between one and two miles from the Facility.

6.1 Physical Properties of Contaminants

The identified contaminants are organic chemicals. The major physical properties of the contaminants are listed Table 8a

A summary of the various action levels of the tested contaminants is listed in Table 8

6.2 Conceptual Model of Contaminant Migration

Most of the chemical contaminats have very poor solubility with water and have high vapor pressures. Since Omega has a history of high usuage of chlorinated and fluoroinated hydrocarbons which have very low or insoluble in water, the leaching characteristics into water would be very low. The majority of the solvents handled at Omega were of the halogenated category which all had high vapor pressures. The lowest vapor pressure of these would be tetrachloroethylene.

These halogenated hydrocarbons have a high density relative to water consequently they would sink to the bottom of any water formation. With the poor water solubility, the contaminants would have a slow migration through the soil by water adsorption. With a high vapor pressure, they have a resistance to move down but rather upward.

The chemical transformation into other products via reaction in the soil is minimal. All of the listed contaminats are very stable and resistance to reaction except at high temperatures exceeding 800 o F and high pressures of 25 atm.

7.0 Potential Impacts cf Existing Contamination

7.1 Groundwater Releases

There has been no observed release of hazardous wastes to groundwater that is hydraulically connected to an acquifier from this site. Based on the above hydrogeologic information, there is no barrier to prevent contaminants in the soil from migrating to the drinking water aquifers, but that may be a slow process. Some contamination has already entered the soil beneath an old underground storage tank and under the tank farm as a result of the decomposition of part of the old asphalt base. A new concrete base may prevent additional soil contamination and may make the potential for additional releases of contaminants to groundwater low.

7.2 Surface Water Releases

The only potential use for surface water from this site before it enters the Pacific Ocean is as recharge for the groondwater . The slope of the Omega facility dips to the rear ot the site at less than one half of one percent . The sides and rear of the Omega facility are surrounded by a one to two foot block wall that prevents surface runoff of contaminants from the site . Should there be a breach in this containment, surface water from the site would enter a storm drain that flows into the Sorensen Avenue Drain. This draln proceeds to the North Fork of Coyote Creek. Surface water withini three miles of the site is not used for any purpose.

7.3 Sensitive Ecosystems/Habitats

The site is an urbanized industrial site with no identifiable environmental sensitive receptors or endangered species.

8. INTERIM CORRECTIVE MEASURES AND STABILIZATION ASSESSMENT

INTERIM MEASURES WORKPLAN

PURPOSE

The purpose of Interim Measures is to prevent imminent threats from being realized while a long-term comprehensive response is being developed. Interim measures may encompass a broad range of possible actions including control of the source of a release, control of the contaminanted medium or other exposure controls.

SCOPE

Interim Measures consists of two tasks
Task I: Interim Measures Workplan
Task II: Implementation of Interim Measures

Prelimnary Activities

In order to be in compliance with the Consent order, the Interim Measures workplan has been proposed so that while the RCRA Facility Investigation (RFI) Workplan is prepared and accepted by the EPA any possible contamination or releases are controlled and reduced to minimal levels.

- o Task 1 -Interim Measures Workplan
- o Task 2 -Implementation of Interim Measures

Objectives of the Interim measures

a. Security at the facility by constructing a higher fence and assuring no open, unguarded gates.

b. Source control by immediately inspecting all potential sources of contamination such as leaking drums and inadequately stacked drums. Any leaking drums with hazardous waste should be repacked and processed or moved to an appropriate Class 1 facility.

How the measure will mitigate a potential

By increasing the height of the fence to the legal limit, it will reduce the possibility of unauthorized access to the facility. All gates will be locked when not attended.

With inspection of the facility for leaking or inadequately stacked drum, it will reduce the probability of any waste material leaking onto the site and possible ground contamination.

Design, construction,, operation , and maintenance requirements

The facility has a fence surrounding the entire property. Figure 22 shows the current fencing surrounding the facility.The fence on the west side of the property will be raised to the maximum allowed height as stated in the City of Whittier building codes of six feet with additional restrictive wires at the top to impede any unauthorized access to the property.

All gates to the facility are locked when not in use and unattended. An intruder alarm which is triggered by movement has been installed. This alarm is connected by phone to a 24 hour service as well as a local on site audio alarm. When activated, it will call selected company individuals and the local police department if warranted.

Source control at the facility will be maintained by following an Inspection Plan (Amendment A). This plan will require the daily inspection of the facility for any leaking or inadequately stacked drums. The Inspection Plan requires a daily report to be maintained of the results of this inspection. A sample of the Daily Inspection Plan is attached as Figure 23 These reports will be kept and made available to the laison of the EPA Region IX.

Schedules for design, construction and monitoring;

The adding to the current fencing of the facility will commence within 15 days of the approval of the Interim Measures Workplan by the EPA Region IX.

The alarm has been installed at the facility. A copy of the alarm installation is included as Figure 24

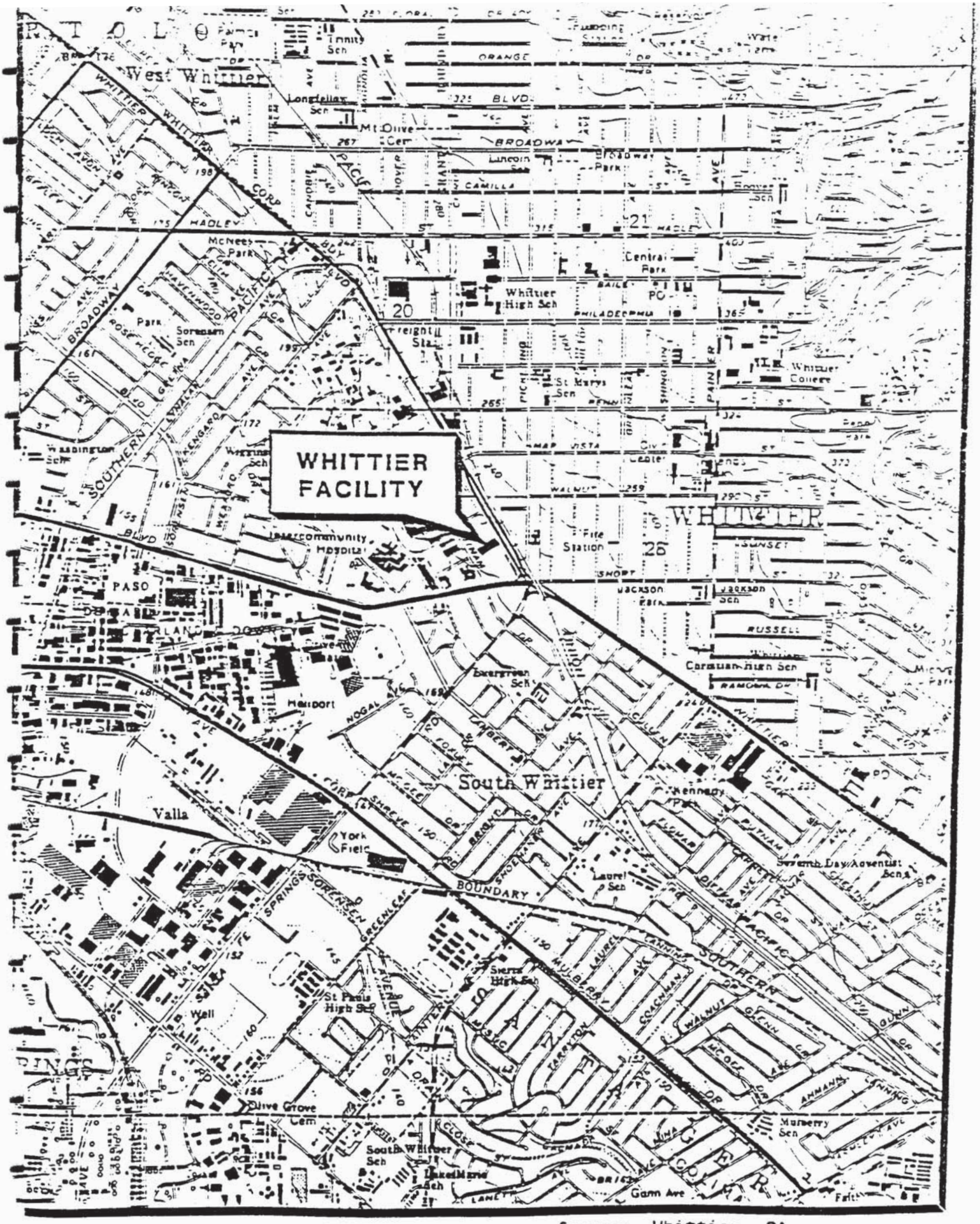
The Inspection Plan has already been implemented and records of the daily inspection are kept at the facility for review.

Schedule for progress reports

Monthly progress reports will be submitted to the contact individual at the EPA Region IX on the first of each month.

9.0 Data Needs

Additional data needs will be explored in the workplan.



Site Location and Topographic Map
Omega Chemical Company
Whittier, CA

Source: Whittier, CA
USGS 7.5 Minute Quadrangles
1 inch = 2000 feet

FIGURE 1

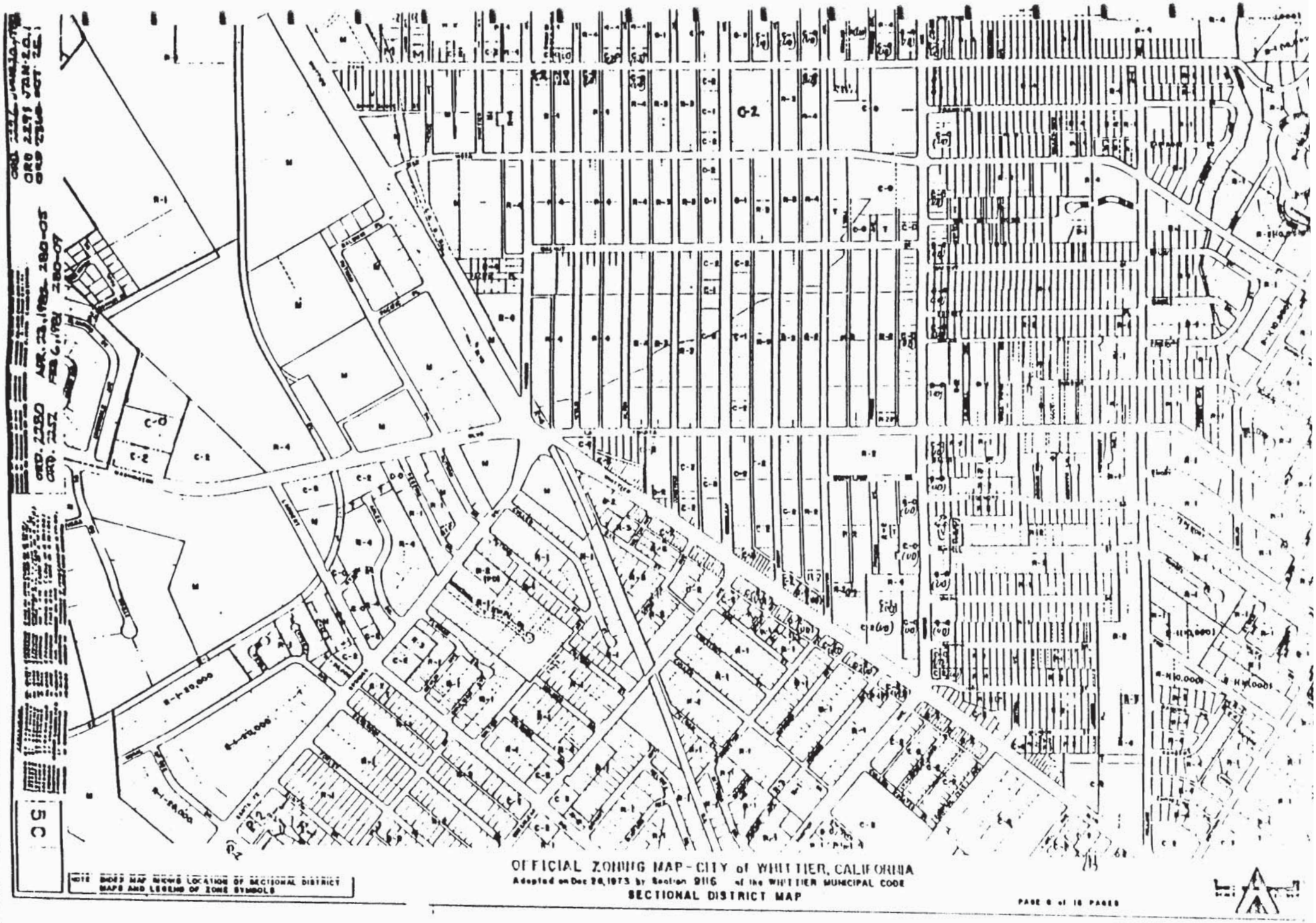
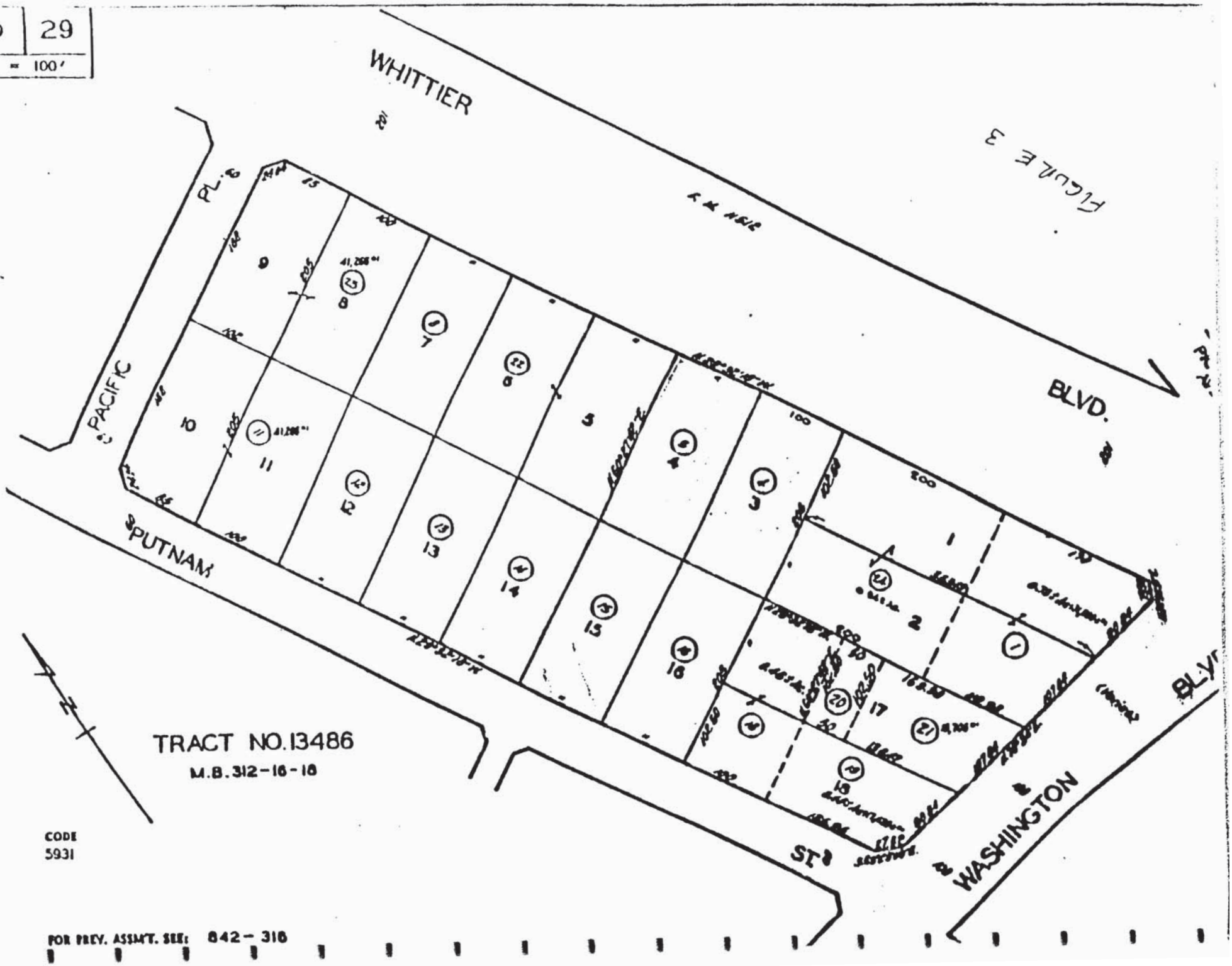

OFFICIAL ZONING MAP - CITY of WHITTIER, CALIFORNIA
Adopted on Dec 26, 1973 by Section 9116 of the WHITTIER MUNICIPAL CODE
SECTIONAL DISTRICT MAP
NOTE INDEX MAP SHOWS LOCATION OF SECTIONAL DISTRICT MAPS AND LEGEND OF ZONE SYMBOLS
PAGE 9 of 15 PAGES
ORD. 2280 APR. 23, 1980
ORD. 2271 FEB 6, 1980 280-07
ORD 2271 JAN 2.0.
ORD 2246 OCT 2.1.
C-2
R-1
R-4
M
C-1
C-3
R-2
R-3
5 C

FIGURE 2

MARK LARWOOD COMPANY

10	29
1" = 100'	



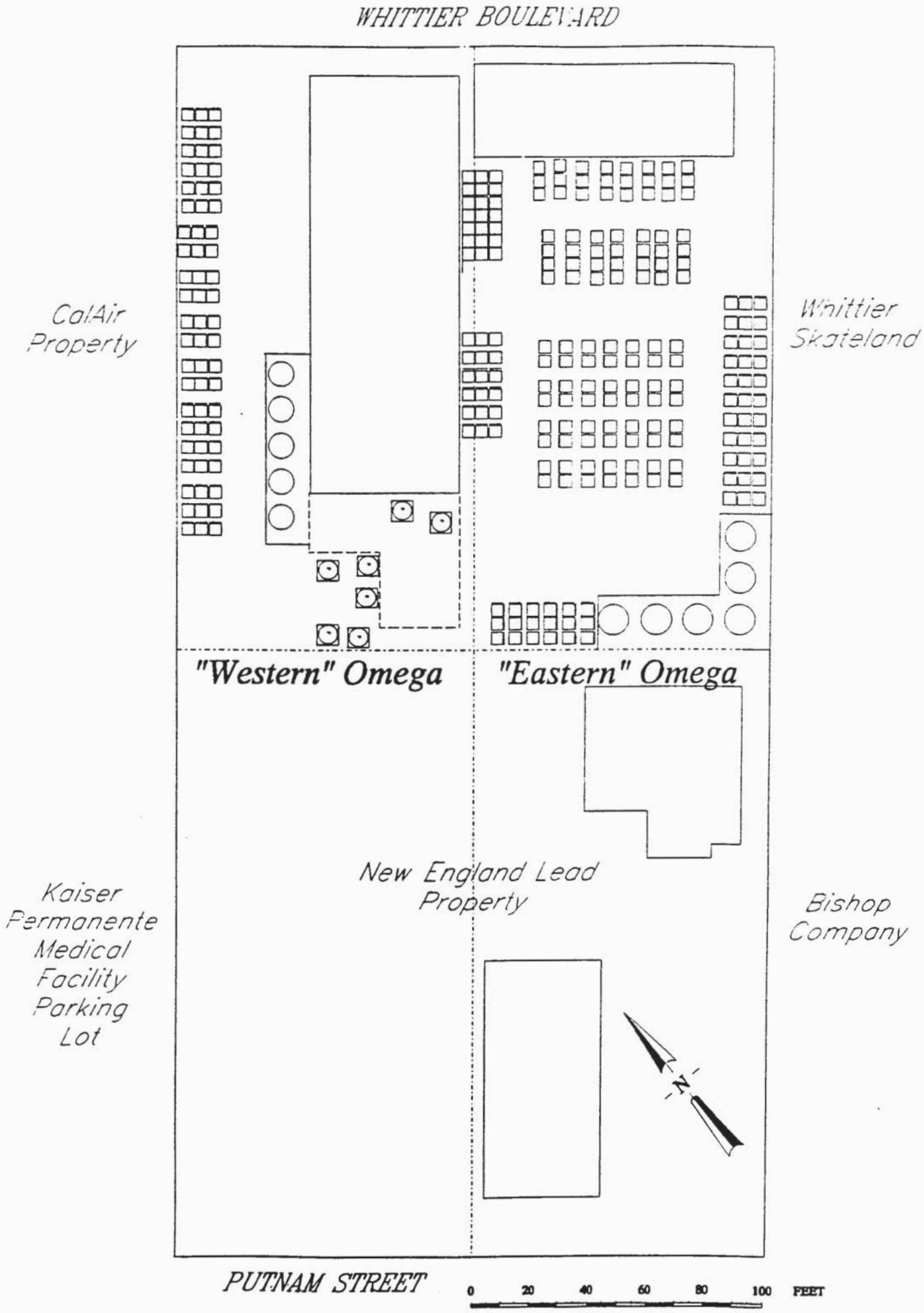

WHITTIER BOULEVARD
CalAir Property
Whittier Skateland
"Western" Omega
"Eastern" Omega
New England Lead Property
Kaiser Permanente Medical Facility Parking Lot
Bishop Company
N
PUTNAM STREET
0 20 40 60 80 100 FEET

FIGURE 4

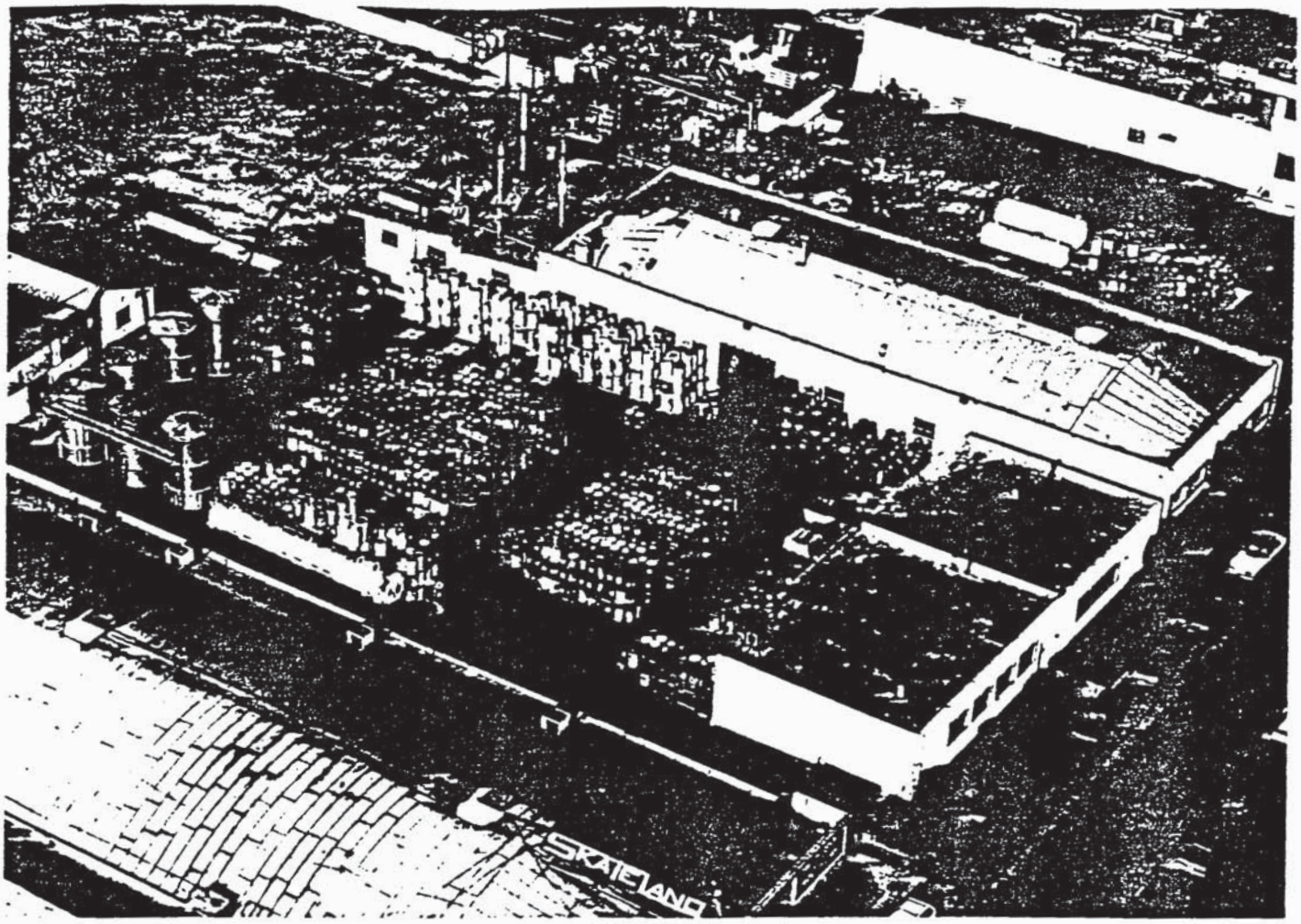
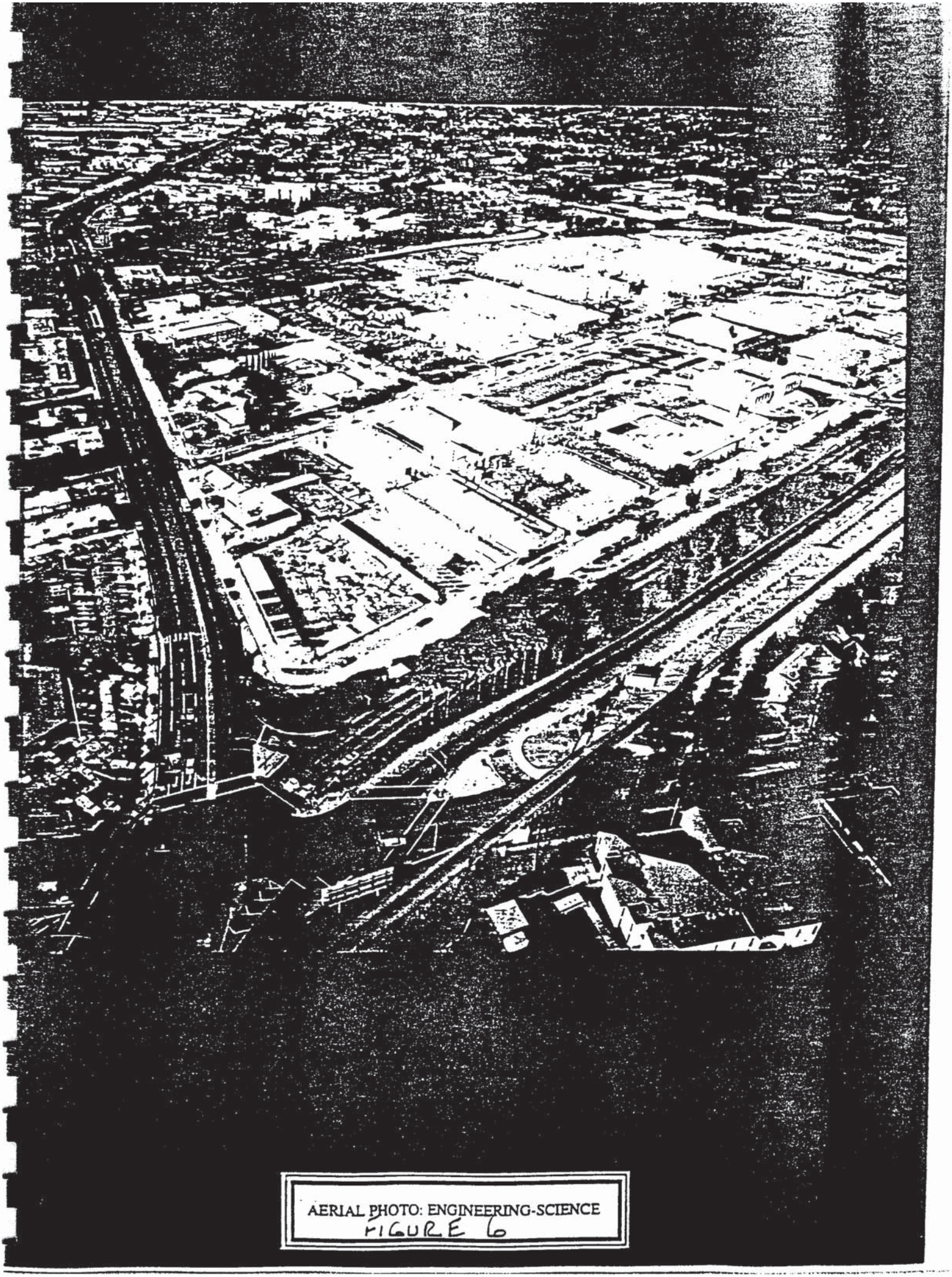


PHOTO: ENGINEERING-SCIENCE

EXISTING FACILITY

FIGURE 5



AERIAL PHOTO: ENGINEERING-SCIENCE
FIGURE 6

FIGURE II-11

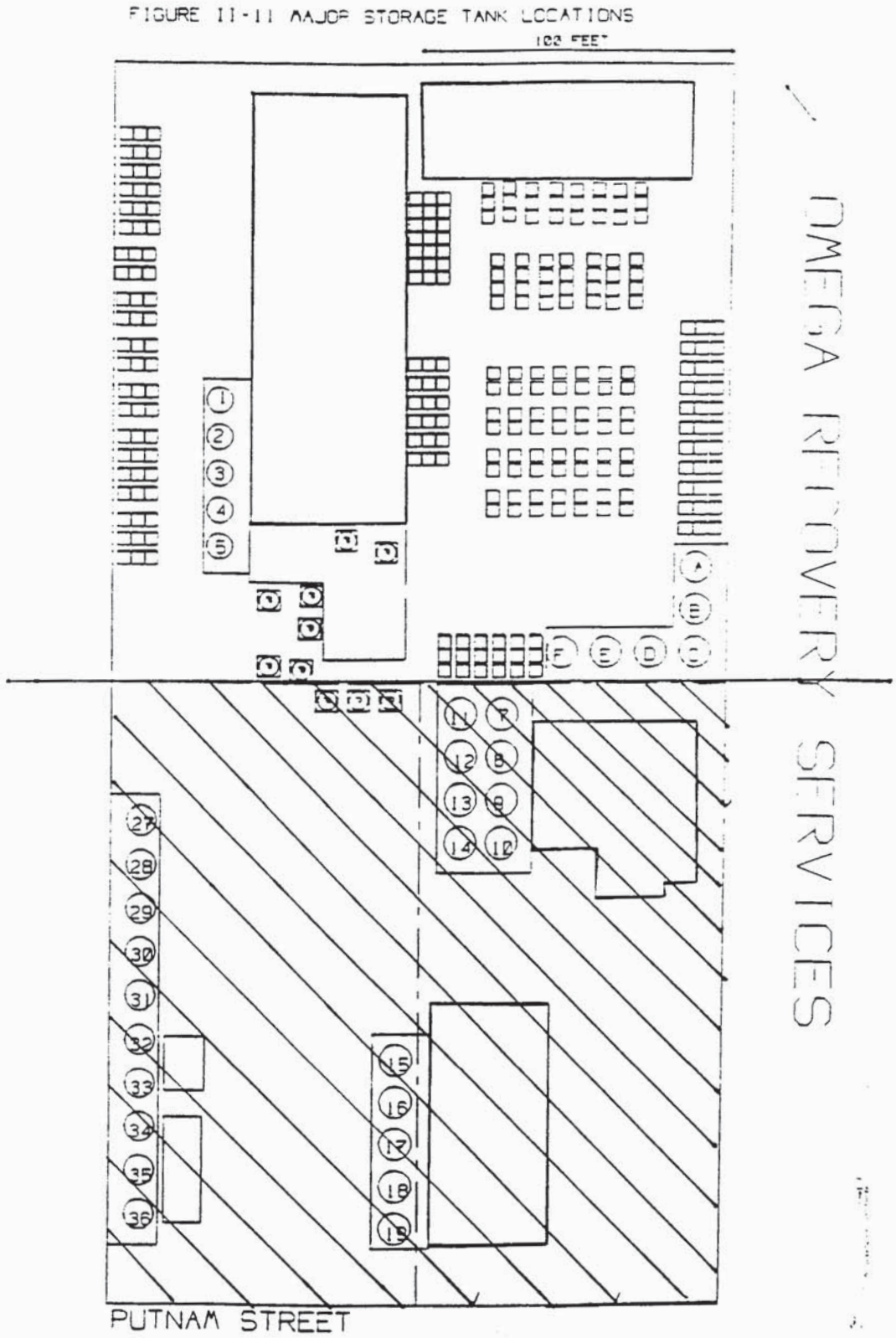


FIGURE 7

FIGURE 7A

OMEGA CHEMICAL CORP - OMEGA RECOVERY SERVICES
12504 E. WHITTIER BLVD. WHITTIER, CA 90602
CAD042245001

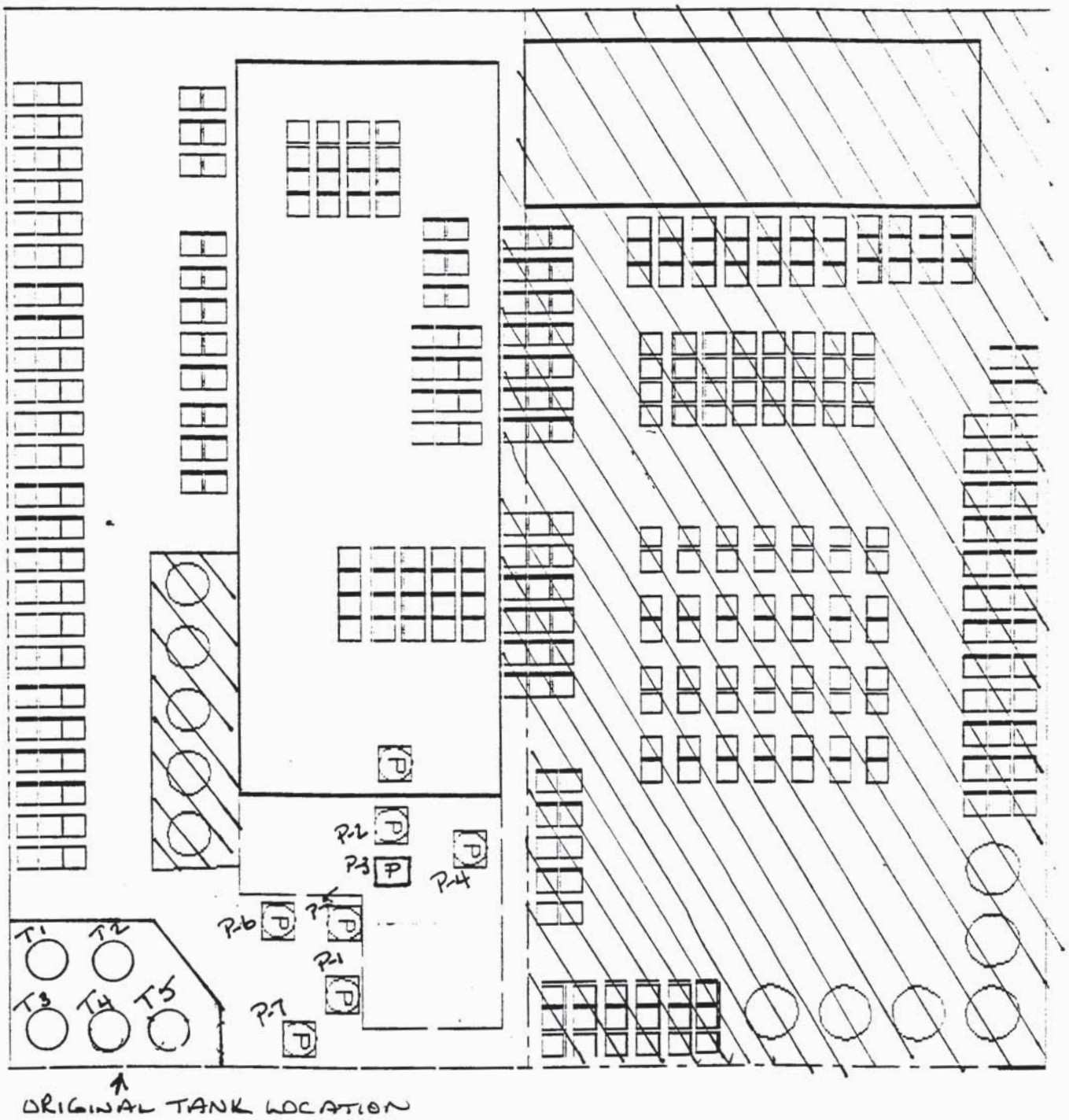


FIGURE 7B

OMEGA CHEMICAL CORP - OMEGA RECOVERY SERVICES
12504 E. WHITTIER BLVD, WHITTIER, CA 90602
CAD042245001

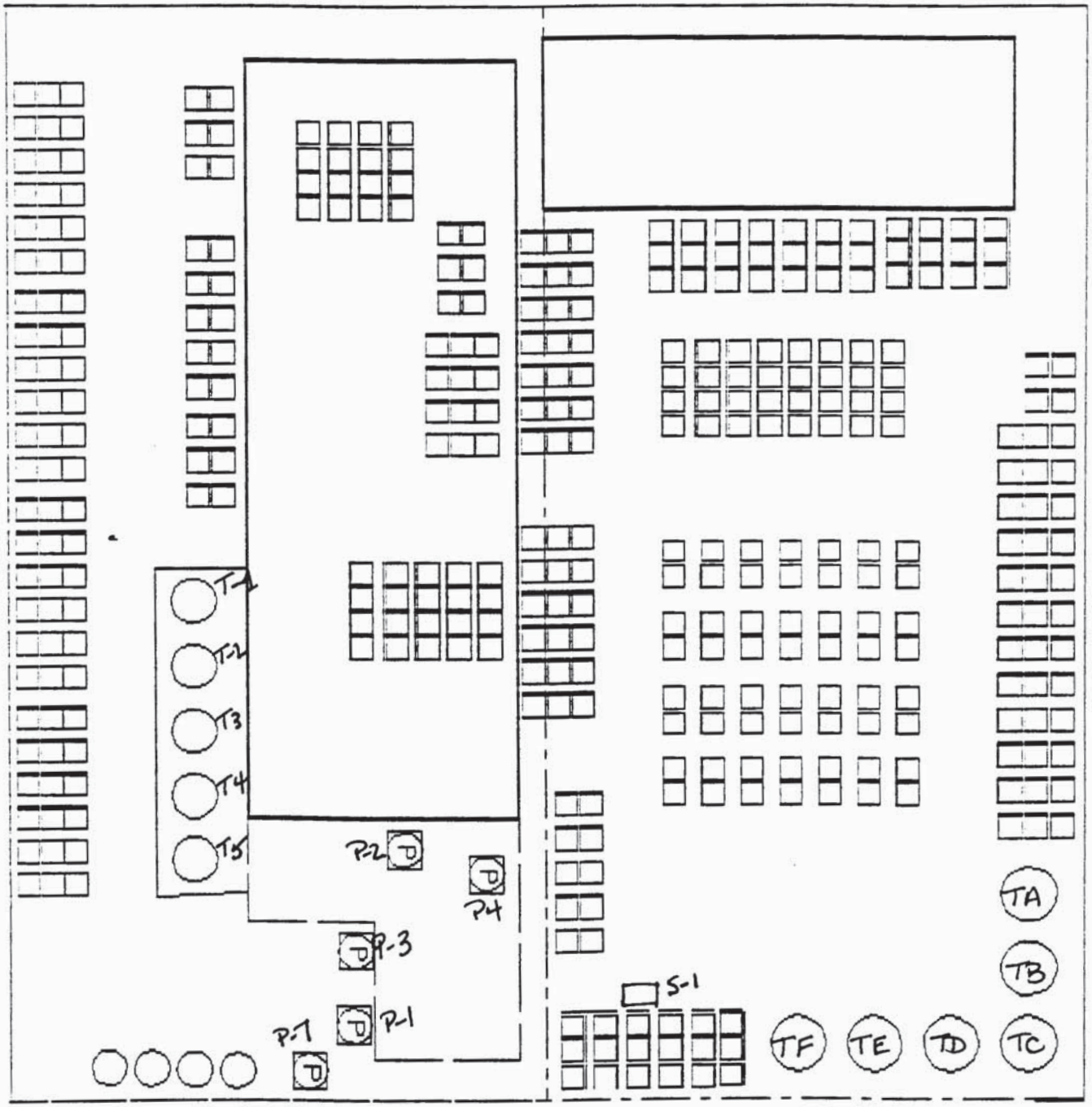


FIGURE 7C

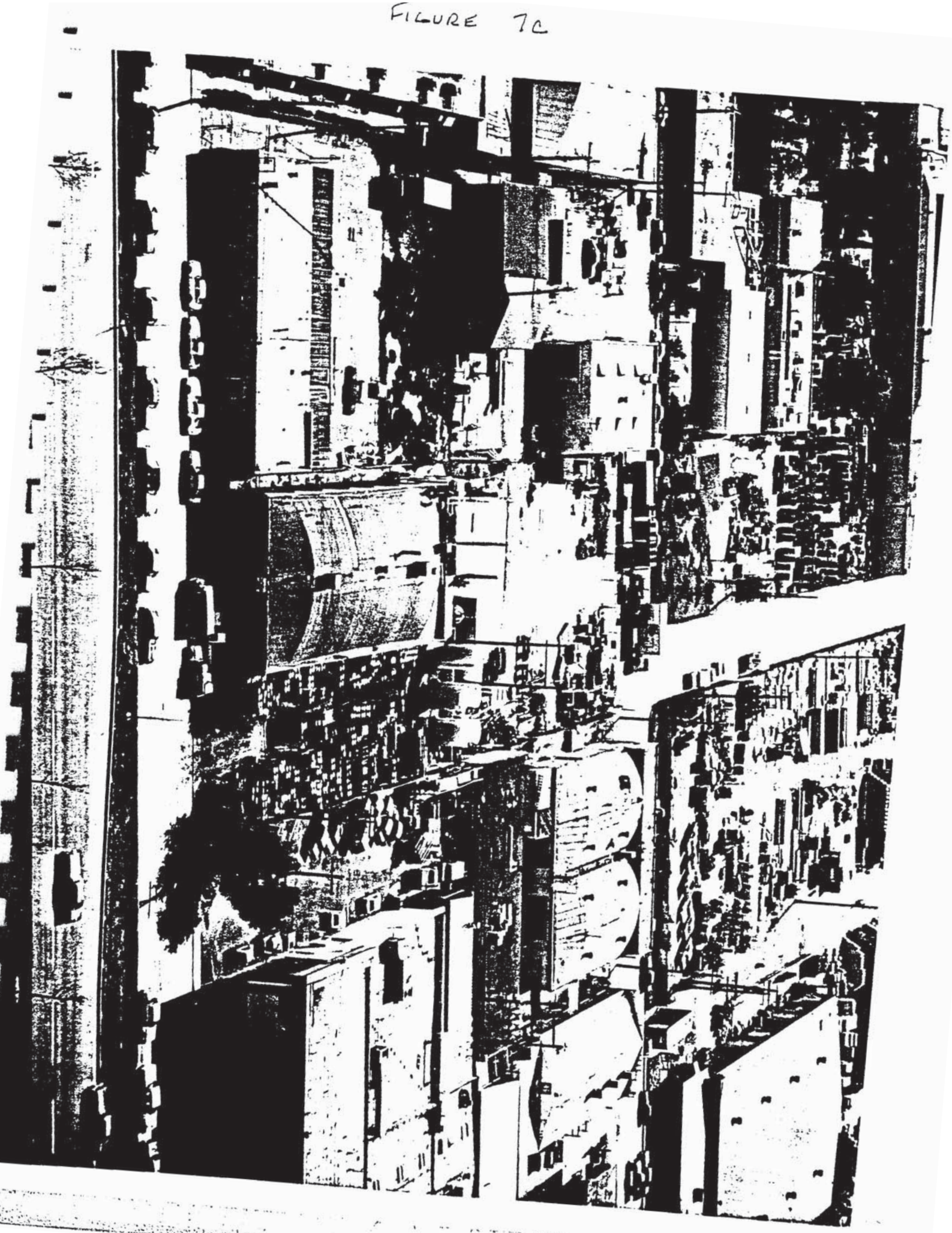


FIGURE 8

PATCHEM LABORATORIES

2205 First St. #108 • Simi Valley, CA 93065 • (805) 581-9006

Customer: Omega Recovery Services
12504 E. Whittier Blvd.
Whittier, CA 90602

Attention: Mr. Greg McKim

Sample Date: 10-1-90

Report Date: 10-23-90

Sample I.D.: 9010-4003

Subject: Colortech Graphic Inc. Sample - TCLP

Sample Location: 315 South Flower Street

Method: Sample was analyzed per EPA *Test Methods for Evaluating Solid Waste, Physical/Chemical Method* (SW-846).

Results:

PARAMETER	EPA METHOD	DETECTION LIMIT	ANALYSIS
Arsenic	7060	0.05 mg/L	< 0.05 mg/L
Barium	7080	0.1 mg/L	< 0.1 mg/L
Cadmium	7130	0.02 mg/L	< 0.02 mg/L
Chromium	7190	0.05 mg/L	0.17 mg/L
Lead	7420	0.02 mg/L	1.84 mg/L
Mercury	7471	0.05 mg/L	< 0.05 mg/L
Selenium	7740	0.1 mg/L	< 0.1 mg/L
Silver	7760	0.02 mg/L	< 0.02 mg/L

Comments: Sample was prepared per Method 3010 of SW-846 for metals analysis, after TCLP extraction.

Respectfully Submitted,

Pat Brueckner
Chemist

FIGURE 8A

PATCHEM LABORATORIES

2205 First St. #108 • Simi Valley, CA 93065 • (805) 581-9006

Customer: Omega Recovery Services
12504 E. Whittier Blvd.
Whittier, CA 90602

Attention: Mr. Greg McKim

Sample Date: 10-1-90 Sample I.D.: 9010-4003 (Page 2 of 3)

Subject: Colortech Graphic Inc. Sample (315 South Flower Street) - TCLP

Method: Sample was analyzed per EPA Method 8240/8270 of *Test Methods for Evaluating Solid Waste, Physical/Chemical Method* (SW-846).

Results:

PARAMETER	DETECTION LIMIT	ANALYSIS
Benzene	0.05 mg/L	< 0.05 mg/L
Carbon Tetrachloride	0.05 mg/L	< 0.05 mg/L
Chlordane	0.05 mg/L	< 0.05 mg/L
Chlorobenzene	0.05 mg/L	< 0.05 mg/L
Chloroform	0.05 mg/L	< 0.05 mg/L
o-Cresol	0.05 mg/L	< 0.05 mg/L
m-Cresol	0.05 mg/L	< 0.05 mg/L
p-Cresol	0.05 mg/L	< 0.05 mg/L
Cresol	0.05 mg/L	< 0.05 mg/L
2,4-D	0.05 mg/L	< 0.05 mg/L
1,4-Dichlorobenzene	0.05 mg/L	< 0.05 mg/L
1,2-Dichloroethane	0.05 mg/L	< 0.05 mg/L
1,1-Dichloroethylene	0.05 mg/L	< 0.05 mg/L
2,4-Dinitrotoluene	0.05 mg/L	< 0.05 mg/L
Endrin	0.05 mg/L	< 0.05 mg/L
Heptachlor	0.05 mg/L	< 0.05 mg/L
Hexachlorobenzene	0.05 mg/L	< 0.05 mg/L
Hexachlorobutadiene	0.05 mg/L	< 0.05 mg/L
Lindane	0.05 mg/L	< 0.05 mg/L
Methoxychlor	0.05 mg/L	< 0.05 mg/L
Methyl Ethyl Ketone	0.05 mg/L	7200 mg/L
Nitrobenzene	0.05 mg/L	< 0.05 mg/L
Pentachlorophenol	0.05 mg/L	< 0.05 mg/L
Pyridine	0.05 mg/L	< 0.05 mg/L
Tetrachloroethylene	0.05 mg/L	< 0.05 mg/L
Toxaphene	0.05 mg/L	< 0.05 mg/L
Trichloroethylene	0.05 mg/L	64.0 mg/L
2,4,5-Trichlorophenol	0.05 mg/L	< 0.05 mg/L
2,4,6-Trichlorophenol	0.05 mg/L	< 0.05 mg/L
2,4,5-TP Silvex	0.05 mg/L	< 0.05 mg/L
Vinyl Chloride	0.05 mg/L	< 0.05 mg/L

Respectfully Submitted,

Pat Brueckner
Chemist

FIGURE 8-5

PATCHEM LABORATORIES

2205 First St. #108 • Simi Valley, CA 93065 • (805) 581-9006

Customer: Omega Recovery Services
12504 E. Whittier Blvd.
Whittier, CA 90602

Attention: Mr. Greg McKim

Sample Date: 10-1-90

Report Date: 10-23-90

Sample I.D.: 9010-4003 (Page 3 of 3)

Subject: Colortech Graphic Inc. Sample - TCLP

Sample Location: 315 South Flower Street

Method: Sample was analyzed per EPA *Test Methods for Evaluating Solid Waste, Physical/Chemical Method* (SW-846).

Results:

PARAMETER	ANALYSIS
Color	Dark Grey
Physical State	Liquid
Specific Gravity	0.920 g/ml
pH	7.6 units
Flash Point	> 70 deg. C
% Water	41 %
BTU	8560 BTU/lb
Ash	9.6 %
Odor	Strong
Melting Point	N/A
Boiling Point	62 deg. C
Sulfur	0.2 %
Suspended Solids	85 mg/L
% Cyanide	0.005 %

Respectfully Submitted,

Pat Brueckner
Chemist

COMPOSITION OF OMEGA WASTE STREAM 16-Nov-87

CREATING A FUEL FOR OMEGA CHEMICALS COFIRING.

MINIMUM AVERAGE HEATING VALUE: - 8,000 BTU/LBM.

COMPONENT	HHV Btu/lbm.	HHV Btu/gal	SPEC GRAVI (H2O)	VOL. FRAC Xi	GALLONS PER 100,000 GALBI	Xi*(HHV)
METHYLENE CHLORIDE	2,291	25,251	1.320	0	0.00	0
ACETONE	13,295	67,922	0.732	0.05	5,000.00	4,336
METHYL-ETHYL KETONE	14,620	98,272	0.805	0.025	2,500.00	2,260
1,1,1 TRICHLOROETHANE	2,969	33,195	1.337	0	0.00	0
1-BUTANOL	15,644	107,134	0.810	0	0.00	0
HEXANE	20,675	113,940	0.660	0	0.00	0
TETRACHLOROETHENE	1,641	22,239	1.623	0	0.00	0
TOLUENE	18,441	133,985	0.870	0	0.00	0
OIL #2 AND #3	19,000	142,785	0.900	0	0.00	0
ETHANOL	12,770	84,131	0.789	0.25	25,000.00	21,033
ISOPROPANOL	14,260	93,590	0.786	0.027	2,700.00	2,527
ETHYL ACETATE	10,934	82,620	0.900	0.35	35,000.00	28,917
ISOBUTYL ACETATE	12,653	92,974	0.860	0.2	20,000.00	18,535
WATER	0	0	1.000	0.1	10,000.00	0
MINERAL SPIRITS	19,840	132,531	0.800	0	0.00	0
KEROSENE	19,840	132,531	0.800	0	0.00	0
AVERAGE HHV (BTU/GAL) -		77,728		1	100,000	77,728

AVERAGE HHV - 77,728 Btu/gal

FIGURE B-C

COMPOSITION OF OMEGA WASTE STREAM 18-Nov-87

CREATING A FUEL FOR OMEGA CHEMICALS COFIRING.

MINIMUM AVERAGE HEATING VALUE: = 8,000 BTU/LBM.

COMPONENT	HHV Btu/lbm.	HHV Btu/gal	SPEC GRAVI (RHO)	VOL. FRAC Ai	GALLONS PER 100,000 GALBI	Ai*(HHV)
METHYLENE CHLORIDE	2,231	25,251	1.320	0	0.00	0
ACETONE	13,295	87,922	0.732	0.1	10,000.00	8,792
METHYL-ETHYL KETONE	14,620	98,272	0.805	0	0.00	0
1,1,1 TRICHLOROETHANE	2,969	33.195	1.339	0	0.00	0
1-BUTANOL	15,844	107,134	0.810	0	0.00	0
HEXANE	20,675	113,940	0.660	0	0.00	0
TETRACHLOROETHENE	1,641	22,239	1.623	0	0.00	0
TOLUENE	18,441	133,965	0.870	0	0.00	0
OIL #2 AND #3	19,000	142,705	0.900	0	0.00	0
ETHANOL	12,770	84,131	0.789	0.25	25,000.00	21,033
ISOPROPANOL	14,260	93,590	0.786	0	0.00	0
ETHYL ACETATE	10,334	82,620	0.900	0.35	35,000.00	28,917
ISOBUTYL ACETATE	12,653	92,974	0.880	0.2	20,000.00	18,595
WATER	0	0	1.000	0.1	10,000.00	0
MINERAL SPIRITS	19,840	132,531	0.800	0	0.00	0
KEROSENE	19,840	132,531	0.800	0	0.00	0
AVERAGE HHV (BTU/GAL) =		77,337		1	100,000	77,337

AVERAGE HHV = 77,337 Btu/gal

FIGURE 8-D

CREATING A FUEL FOR ONEGA CHEMICALS COFIRING.

COMPONENT	HHV Btu/lbm.	HHV Btu/gal	SPEC. GRAVI (H2O)	VOL. FRAC. Ai	GALLONS PER 100,000 GALBI	Ai*(HHV)
METHYLENE CHLORIDE	2,291	25,251	1.320	0	0.00	0
ACETONE	13,295	67,922	0.795	0	0.00	0
METHYL-ETHYL KETONE	14,620	98,272	0.805	0	0.00	0
1,1,1 TRICHLOROETHANE	2,969	33,195	1.333	0	0.00	0
1-BUTANOL	15,644	107,134	0.810	0	0.00	0
HEXANE	20,675	113,940	0.660	0	0.00	0
TETRACHLOROETHENE	1,641	22,239	1.623	0	0.00	0
TOLUENE	16,441	133,965	0.870	0	0.00	0
OIL #2 AND #3	19,000	142,785	0.900	0	0.00	0
ETHANOL	12,770	84,131	0.789	0.5	50,000.00	42,065
ISOPROPANOL	14,260	93,590	0.786	0	0.00	0
ETHYL ACETATE	10,934	82,620	0.900	0.4	40,000.00	33,048
ISOBUTYL ACETATE	12,653	92,975	0.880	0	0.00	0
WATER	0	0	1.000	0.1	10,000.00	0
MINERAL SPIRITS	19,640	132,531	0.800	0	0.00	0
KEROSENE	19,640	132,531	0.800	0	0.00	0
AVERAGE HHV (BTU/GAL) =		75,113		1	100,000	75,113

AVERAGE HHV = 75,113 Btu/gal

FIGURE 8-E

COMPOSITION OF OMEGA WASTE STREAM 18-Nov-87

COMPONENT	HHV Btu/lbm.	HHV Btu/gal	SPEC GRAV (RHO)	VOL. FRAC Ai	GALLONS PER 100,000 GALS	Ai*(HHV)
METHYLENE CHLORIDE	2,291	25,251	1.320	0	0.00	0
ACETONE	13,295	87,922	0.792	0	0.00	0
METHYL-ETHYL KETONE	14,620	98,272	0.805	0	0.00	0
1,1,1 TRICHLOROETHANE	2,969	33.195	1.339	0	0.00	0
1-BUTANOL	15,844	107,134	0.810	0	0.00	0
HEXANE	20,675	113.940	0.660	0	0.00	0
TETRACHLOROETHENE	1,641	22,239	1.623	0	0.00	0
TOLUENE	18,441	133,965	0.870	0	0.00	0
OIL #2 AND #3	19,000	142,785	0.900	0	0.00	0
ETHANOL	12,770	84,131	0.789	0.5	50,000.00	42,065
ISOPROPANOL	14,260	93,590	0.786	0	0.00	0
ETHYL ACETATE	10,994	82,620	0.900	0.4	40,000.00	33,048
ISOBUTYL ACETATE	12,653	92,974	0.880	0	0.00	0
WATER	0	0	1.000	0.1	10,000.00	0
MINERAL SPIRITS	19,840	132,531	0.800	0	0.00	0
KEROSENE	19,840	132,531	0.800	0	0.00	0
AVERAGE HHV (BTU/GAL) -		75,113		1	100,000	75,113

AVERAGE HHV - 75,113 Btu/gal

COMPOSITION OF OMEGA WASTE STREAM 18-Nov-87

CREATING A FUEL FOR OMEGA CHEMICALS COFIRING.
OBJECTIVES:

MINIMUM AVERAGE HEATING VALUE: = 8,000 BTU/LBM.

COMPONENT	HHV Btu/lbm.	SPEC GRAV (RHO)	MASS FRAC Ai	GALLONS PER 100,000 GAL	Ai*(HHV)	Ai/(RHO)
METHYLENE CHLORIDE	2,291	1.320	0	0.00	0	0.000
ACETONE	13,295	0.790	0.15625	16,303.04	2,077	0.197
METHYL-ETHYL KETONE	14,620	0.805	0.046875	5,402.24	685	0.058
1,1,1 TRICHLOROETHANE	2,969	1.339	0.125	8,660.80	371	0.093
1-BUTANOL	15,044	0.810	0.003125	358.01	50	0.004
HEXANE	20,675	0.660	0.007812	1,038.16	162	0.012
TETRACHLOROETHENE	1,641	1.623	0.078125	4,465.81	128	0.048
TOLUENE	18,441	0.870	0.03125	3,332.42	576	0.036
OIL #2 AND #3	19,000	0.900	0.28125	28,992.01	5,344	0.313
ETHANOL	12,770	0.793	0.0625	7,349.05	798	0.079
ISOPROPANOL	14,260	0.786	0.03125	3,688.55	446	0.040
ETHYL ACETATE	10,994	0.900	0.03125	3,221.33	344	0.035
ISOBUTYL ACETATE	12,653	0.800	0.015625	1,647.27	198	0.018
WATER	0	1.000	0.067187	6,233.28	0	0.067
MINERAL SPIRITS	19,040	0.600	0.03125	3,624.00	620	0.039
KEROSENE	19,840	0.600	0.03125	3,624.00	620	0.039
			(SUM=64/64)			
AVERAGE HHV AND SPEC GRAV =	12,418	0.930	1	100,000	12,418	1.070

HHV(BTU/GAL)= 96,199 Btu/gal
AVERAGE DENSITY= 7.75 lbm/gal

FIGURE 8

COMPOSITION OF OMEGA WASTE STREAM 18-Nov-87

CREATING A FUEL FOR OMEGA CHEMICALS COFIRING.

MINIMUM AVERAGE HEATING VALUE: - 8,000 BTU/LBM.

COMPONENT	HHV Btu/lbm.	SPEC GRAV (RHO)	MASS FRAC Ai	GALLONS PER 100,000 GAL	Ai*(HHV)	Ai/(RHO)
METHYLENE CHLORIDE	2,291	1.320	0	0.00	0	0.000
ACETONE	13,295	0.732	0.05	5,446.85	665	0.063
METHYL-ETHYL KETONE	14,620	0.805	0.023	2,465.06	336	0.029
1,1,1 TRICHLOROETHANE	2,969	1.339	0	0.00	0	0.000
1-BUTANOL	15,844	0.810	0.001	106.54	16	0.001
HEXANE	20,675	0.660	0	0.00	0	0.000
TETRACHLOROETHENE	1,641	1.623	0	0.00	0	0.000
TOLUENE	18,441	0.870	0	0.00	0	0.000
OIL #2 AND #3	19,000	0.900	0	0.00	0	0.000
ETHANOL	12,770	0.789	0.246	26,900.13	3,141	0.312
ISOPROPANOL	14,260	0.786	0.03	3,293.02	428	0.038
ETHYL ACETATE	10,994	0.900	0.35	53,552.28	3,848	0.389
ISOBUTYL ACETATE	12,653	0.880	0.2	19,608.46	2,531	0.227
WATER	0	1.000	0.1	8,627.72	0	0.100
MINERAL SPIRITS	19,840	0.800	0	0.00	0	0.000
KEROSENE	19,840	0.800	0	0.00	0	0.000
AVERAGE HHV AND SPEC GRAV -	10,365	0.863	1	100,000	10,965	1.159

HHV(BTU/GAL)= 78,930 Btu/gal
AVERAGE DENSITY= 7.20 lbm/gal

FIGURE 8-4

COMPOSITION OF OMEGA WASTE STREAM 16-Nov-87

CREATING A FUEL FOR OMEGA CHEMICALS COFIRING.

MINIMUM AVERAGE HEATING VALUE: - 8,000 BTU/LBM.

COMPONENT	HHV Btu/lbm.	SPEC GRAV (RHO)	MASS FRAC Ai	GALLONS PER 100,000 GALS	Ai*(HHV)	Ai/(RHO)
METHYLENE CHLORIDE	2,291	1.320	0	0.00	0	0.000
ACETONE	13,235	0.792	0.05	5,614.72	665	0.063
METHYL-ETHYL KETONE	14,620	0.805	0.025	2,762.02	366	0.031
1,1,1 TRICHLOROETHANE	2,369	1.339	0.01	664.21	30	0.007
1-BUTANOL	15,844	0.810	0	0.00	0	0.000
HEXANE	20,675	0.660	0	0.00	0	0.000
TETRACHLOROETHENE	1,641	1.623	0	0.00	0	0.000
TOLUENE	16,441	0.870	0	0.00	0	0.000
OIL #2 AND #3	19,000	0.900	0	0.00	0	0.000
ETHANOL	12,770	0.789	0.13	14,653.78	1,660	0.165
ISOPROPANOL	14,260	0.786	0.025	2,828.79	357	0.032
ETHYL ACETATE	10,934	0.900	0.35	34,586.68	3,848	0.389
ISOBUTYL ACETATE	12,653	0.880	0.2	20,212.33	2,531	0.227
WATER	0	1.000	0.21	18,676.81	0	0.210
MINERAL SPIRITS	19,840	0.800	0	0.00	0	0.000
KEROSENE	19,840	0.800	0	0.00	0	0.000
AVERAGE HHV AND SPEC GRAV -	9,455	0.883	1	100,000	9,455	1.124

HHV(BTU/GAL)- 70,216
AVERAGE DENSITY- 7.43 lbm/gal.

FIGURE 8

COMPOSITION OF OMEGA WASTE STREAM 16-Nov-87

CREATING A FUEL FOR OMEGA CHEMICALS COFIRING.

MINIMUM AVERAGE HEATING VALUE: - 8,000 BTU/LBM.

COMPONENT	HHV Btu/lbm.	SPEC GRAV (RHO)	MASS FRAC Ai	GALLONS PER 100,000 GAL	Ai*(HHV)	Ai/(RHO)
METHYLENE CHLORIDE	2,291	1.320	0	0.00	0	0.000
ACETONE	13,295	0.792	0.05	5,602.11	665	0.063
METHYL-ETHYL KETONE	14,620	0.805	0.025	2,755.82	366	0.031
1,1,1 TRICHLORDETHANE	2,969	1.339	0	0.00	0	0.000
1-BUTANOL	15,844	0.810	0	0.00	0	0.000
HEXANE	20,675	0.660	0	0.00	0	0.000
TETRACHLORDETHENE	1,641	1.623	0	0.00	0	0.000
TOLUENE	18,441	0.870	0	0.00	0	0.000
OIL #2 AND #3	19,000	0.900	0	0.00	0	0.000
ETHANOL	12,770	0.789	0.13	14,620.86	1,680	0.165
ISOPROPANOL	14,260	0.786	0.025	2,822.44	357	0.032
ETHYL-ACETATE	10,994	0.900	0.35	34,508.98	3,848	0.389
ISOBUTYL ACETATE	12,653	0.860	0.2	20,167.58	2,531	0.227
WATER	0	1.000	0.22	19,522.22	0	0.220
MINERAL SPIRITS	19,840	0.800	0	0.00	0	0.000
KEROSENE	19,640	0.600	0	0.00	0	0.000
AVERAGE HHV AND SPEC GRAV -	9,425	0.887	1	100,000	9,425	1.127

HHV(BTU/GAL)= 69,638
AVERAGE DENSITY= 7.41 lbm/gal.

FIGURE 8

FIGURE 8K

Waste Fuel Constituents

Component
Methylene chloride
Acetone
Methyl Ethyl Ketone
1,1,1 Trichloroethane
1-Butanol
Hexane
Tetrachloroethene
Toluene
Oil no. 2 and 3
Ethanol
Isopropanol
Ethyl acetate
Isobutyl acetate
Kerosene
Mineral spirits
Paint pigments (50 percent ash)
Combustible solids (50 percent ash)
Resins(20 percent ash) (polymeric isocynate)
Soil (100 percent ash)
Water

Metal analysis of a still bottoms mixture of the above constituents have shown concentrations in the range below. The metals concentration in the actual fuel are over 2 orders of magnitude less and are also presented.

Heavy metals	Still bottoms ppm	Fuel concentration ppm
Lead	0.3	<0.003
Silver	0.03	<0.0003
Chromium	0.09	<0.0001
Mercury	0.0002	<0.0002
Cadmium	0.21	<0.0002
Barium	0.14	<0.0014
Arsenic	0.006	<0.005
Selenium	0.0004	<0.0004

FIGURE 8

SYSTECH CORPORATION
245 North Valley Road
Xenia, Ohio 45385
(513) 372-8077

Generator: Omega Recovery Services
Address: 12504 East Whittier Blvd.
Whittier, CA 90602
Contact/Phone: Frank Ford (213) 698-0991

Customer Code: CCW
Source: Waste solvent collection
Date: July 1, 1987
Volume: 54,000 gal/yr
EPA Waste Code(s): D001, F002, F003, F005

QUALIFICATION ANALYSIS FOR LOS ROBLES

Organics

Acetone	20.2%	Heat Content	14,000	Btus/lb
Isopropanol	31.8%	Viscosity	13	cp
Methylene chloride	0.6%	Solids	3	% volume
Methyl ethyl ketone	3.9%	Sulfur	0.2	% wt.
1,1,1-trichloroethane	4.7%	Nitrogen	<0.1	% wt.
n-butanol	0.1%	Halogens	4.3	% wt. as Cl
Trichloroethylene	0.3%	Aqueous Extraction	6	pH
MIBK	1.2%	Water (separated phase)	0	% volume
Toluene	2.3%	Ash	<1	% wt.
Butyl acetate	4.0%	Specific Gravity	0.88	gr/ml
Ethyl benzene	1.5%	PCBs	<50	ppm
Xylene	7.7%			
C_{16} - C_{16} alkyl benzenes	2.5%			
C_{5} - C_{22} aliphatics	19.2%			
	%			
	%			
	%			
Benzene	<0.1%			

Metals

Pb	200	ppm	Ba	<100	ppm
Zn	100	ppm	Ti	<100	ppm
Cr	<100	ppm	Fe	200	ppm
Cd	<100	ppm	V	<100	ppm
As	<200	ppm	Se	<200	ppm
		ppm			ppm

: organic composition presented as area percent of FID/GC plot.

Plant Manager comments: Based on analysis at Fredonia May 8, 1987, (Omega Chemical).

Technical Service Director approval: [signature] 8/3/87

Technical Service Director comments:

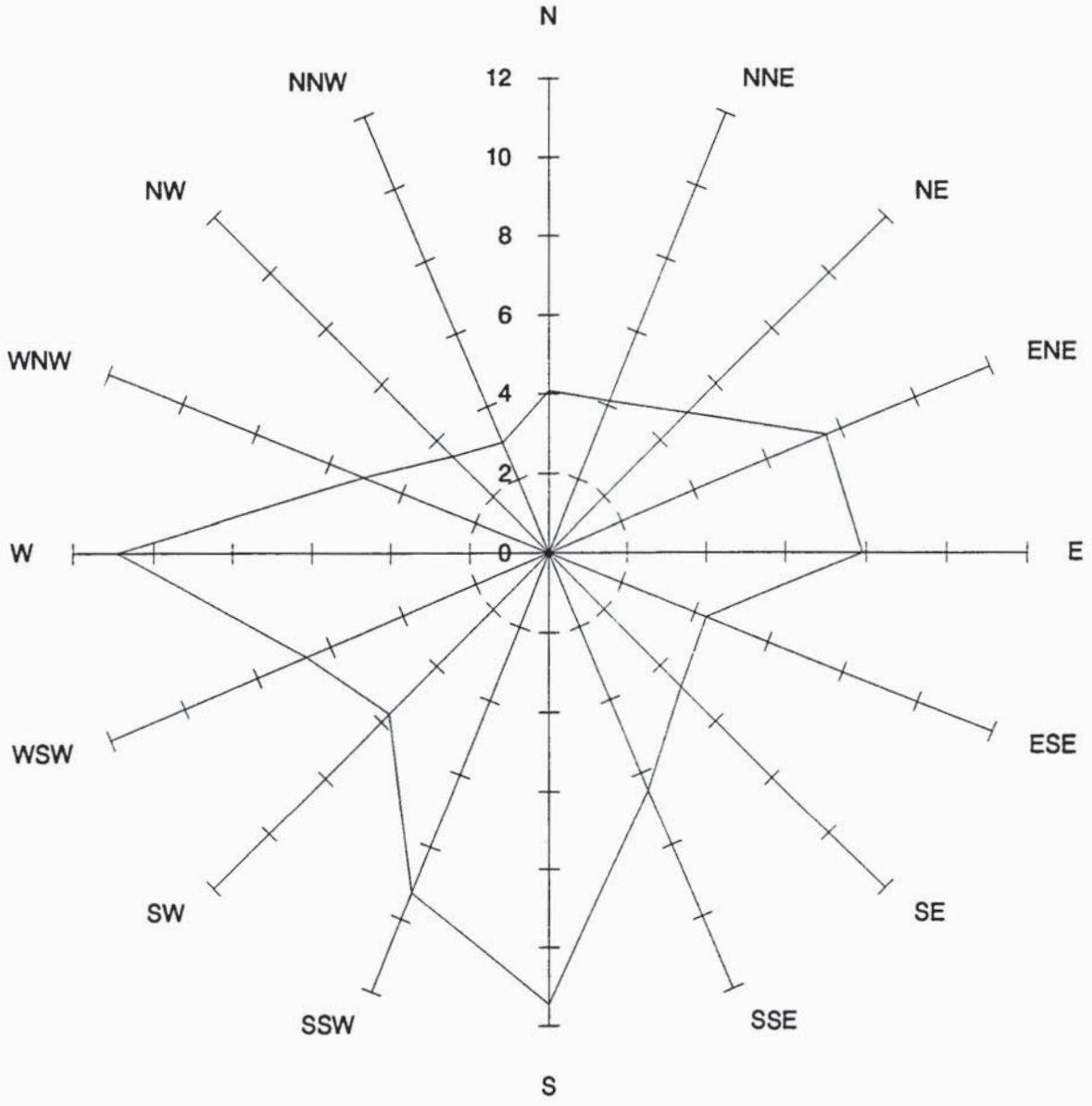
END

TABLE 8 A - SUMMARY OF PHYSICAL PROPERTIES OF CHEMICAL ONTAMINANTS

CHEMICAL COMPOUND (NAME)	ABBREV.	CHEMICAL FORMULA	FORMULA WEIGHT	DENSITY	MELTING POINT	BOILING POINT	WATER SOLUBILITY	VAPOR PRESSURE	DYNAMIC ISCOSITY	KINEMAT SCOSITY	OCTANOL/ WATER COEF.	AQUEOUS SOLUBILITY	SOIL ORGANIC CARBON/WAT	NAS	Prop.65 LEVELS
(Chemicals less dense than water)				(g/cc)	oC	oC		at 25 oC	15-20		log Kow	log S (mol/L)	log Koc		
Acetone	"ACE"	CH3COCH3	58.08	0.788	-94.6	56.5	complete	181.72	0.3371	0.42779	0.01	-2.3473393	-2.21		
2-Butanone (methyl ethyl ketone)	MEK	CH3COC2H5	72.1	0.805	-85.9	79.6	35	90.6	0.423	0.52547	1.01	-0.716483629	-0.205678626	-	-
Ethylbenzene	EB	C6H5C2H5	106.16	0.866	-94.4	136.2	0.01	9.6	0.6783	0.78326	3.45	0.200979011	0.327819095	-	-
Toluene	"TOL"	C6H5CH3	92.13	0.866	-95	110.8	0.05	28.5	0.5866	0.67737	2.56	0.070879483	0.198239965	340	-
Benzene	"BNZ"	C6H6	78.11	0.8787	5.5	80.1	0.178	95.2	0.6487	0.73825	1.9	-0.059126907	0.068753601	-	3.5
ortho-Xylene	"O-X"	C6H4(CH3)2	106.16	0.8801	-25	144	0.0175	6.6	0.809	0.91921	3.15	0.161311801	0.288310554		
(Chemicals more dense than water)															
1,1-Dichloroethylene	DCE	H2C=CCl2	96.94	1.2129	-122	31	0.021	599	0.358	0.29516	2.12	0.812919871	4.305833362	100	-
1,2-Dichloroethane	"1,2-DCA"	ClCH2CH2Cl	98.96	1.2569	-35	83	0.81	83.35	0.887	0.7057	2.46	0.724418903	4.308996298	-	5
Trans-1,2-dichloroethylene	"T-DCE"	ClCH=CHCCl	96.94	1.257	-50	48	0.63	340	0.423	0.33652	2.46	0.724418903	4.308996298	-	-
Methylene chloride (dichloromethane)	"MC"	CH2Cl2	84.94	1.3255	-96.7	40	1.3	435.8	0.449	0.33874	2.14	0.807333131	4.306031809	5000	25
1,1,1-Trichloroethane	"1,1,1-TCA	CH3CCl3	133.41	1.3376	-35	74	0.132	120.7	0.903	0.67509	3.95	0.442661979	4.319350602	3800	-
1,1,2-trichloroethane	"1,1,2-DCA	ClCH2CHCl2	133.41	1.4416	-37	110					3.95	0.442661979	4.319350602	-	-
Trichloroethylene	TCE	ClCH=CCl2	131.39	1.4649	-84.9	86.9	0.11	47.31	0.566	0.38637	2.29	0.767025389	4.307468422	-	30
Chloroform	"CHF"	CHCl3	119.39	1.484	-63.5	61.2	0.82	194.8	0.596	0.40162	1.97	0.85658127	4.304288051	-	4.5
Trichlorofluoromethane	"TCFM"	Cl3CF	137.38	1.494	NA	24.9	0.0015	780	0.32	0.21419	2.51	0.712447002	4.309427356	8000	-
Tetrachloroethylene	PCE	Cl2C=CCl2	165.83	1.6230	-22	121	0.015	18.47	0.932	0.57425	2.15	0.80455931	4.306130398		7
1,1-dichloroethane	"1,1-DCA"	Cl2CHCH3	98.96	1.168	-96.98	57.28	5.03	227.7	0.505	0.43236	2.8	0.647393497	4.311783177	-	-
1,1-Dichloroethyne	"DCY"	Not listed													
4-methyl-1,2,2-pentanone	"MP"	(CH3)2CHCH	100.16	0.8	-80	117	1.7	20	0.542	0.6775	2.06	-0.464615769			
1,1,2-trichloro-1,2,2-fluoroethane	TTE	Cl2CFCClF2	187.39	1.567	-35	47.6	0.017	330.2	0.711	0.45373	3.26	0.556891888	4.315099201	-	-

FIGURE 9

WIND ROSE MAP OF WHITTIER



Annual Average Miles per Hour

Figure 10
Climatological Data

The closest station of National Oceanic And Atmospheric Association station is the County of Los Angeles Fire Station located in City of Whittier.

The data is obtained from the National Climatological Data Center in Ashville, North Carolina.

The average annual precipitation at the station is 15.43 inches.
The lowest precipitation of the last 25 years is 4.86 inches
The highest precipitation of the last 25 years is 36.73 inches.

Mean Precipitation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
mean	3.34	2.88	2.51	1.27	.23	.04	.01	.1	.24	.30	1.96	2.55	15.43

The maximum precipitation for a 24 hour duration is 5.61 inches.

The average monthly temperatures for San Gabriel Valley range from 41° F to 89 °F.

Temperature Normals (Deg. °F)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Max	68.3	70.4	71.2	74.1	77.0	82.1	89.1	89.3	87.9	82.0	74.9	69.9	78.0
Min	41.3	42.9	44.9	47.8	52.2	56.3	60.4	61.1	58.6	53.0	45.9	41.3	50.5
Mean	54.8	56.7	58.1	61.0	64.6	69.2	74.8	75.2	73.3	67.5	60.4	55.6	64.3

The air quality is shown in Figure III-1A from the South Coast Air Quality Management District.

Source/ Receptor Area No.	Location of Air Monitoring Station	Carbon Monoxide: Max. Conc. in PPM 1-Hour	Carbon Monoxide: Max. Conc. in PPM 8-Hour	Carbon Monoxide: No. Days Standard Exceeded, Federal ≥ 9.5 PPM 8-Hr.	Carbon Monoxide: No. Days Standard Exceeded, Federal > 35 PPM 1-Hr.	Carbon Monoxide: No. Days Standard Exceeded, State ≥ 9.1 PPM 8-Hr.	Carbon Monoxide: No. Days Standard Exceeded, State > 20 PPM 1-Hr.	Ozone: Max. Conc. in PPM 1-Hour	Ozone: No. Days Standard Exceeded, Federal > .12 PPM 1-Hour	Ozone: No. Days Standard Exceeded, State > .09 PPM 1-Hour	Nitrogen Dioxide: Max. Conc. in PPM 1-Hour	Nitrogen Dioxide: Average Compared to Federal Standard[a] AAM in PPM	Nitrogen Dioxide: Average Compared to Federal Standard[a] % Above Std.	Nitrogen Dioxide: No. Days Std. Exc'd. State > .25 PPM 1-Hour	Sulfur Dioxide: Max. Conc. in PPM 1-Hour	Sulfur Dioxide: Max. Conc. in PPM 24-hour	Sulfur Dioxide: Average Compared to Federal Standard[b] AAM in PPM	Sulfur Dioxide: No. Days Std. Exc'd.[c] Federal > .14 PPM 24-Hr.	Sulfur Dioxide: No. Days Std. Exc'd.[c] State ≥ .05 PPM 24-Hr.[d]	Visibilit[e] Location
1	Los Angeles	14*	9.8*	2*	0*	2*	0*	.25	34	76	.28	.0553	3.3	1	.03	.014	.0022	0	0	Burbank Airport
2	W. Los Angeles	12	8.0	0	0	0	0	.25	15	65	.22	.0315	0	0	.02	.012	.0024	0	0	
3	Hawthorne	23	16.4	25	0	28	2	.19	3	11	.24	.0374	0	0	.09	.019	.0047	0	0	Los Angeles
4	Long Beach	13	10.1	2	0	2	0	.16	3	10	.27	.0478	0	1	.11	.022	.0046	0	0	International
5	Whittier	13	8.8	0	0	0	0	.26	37	70	.29	.0444	0	1	.04	.016	.0036	0	0	
6	Reseda	17	12.5	11	0	15	0	.23	54	120	.18	.0390	0	0	.02	.011	.0018	0	0	Long Beach
7	Burbank	20	13.9	18	0	21	0	.20	40	97	.25	.0507	0	0	.03	.012	.0020	0	0	Airport
8	Pasadena	14	8.4	0	0	0	0	.27	80	140	.34	.0531	0	2	.02	.010	.0022	0	0	
9	Azusa	7	5.8	0	0	0	0	.33	112	164	.27	.0511	0	2	.02	.010	.0017	0	0	William J. Fox
9	Glendora	NM	NM	NM	NM	NM	NM	.34	121	171	.22	.0389	0	0	NM	NM	NM	NM	NM	Airport
10	Pomona	12	7.4	0	0	0	0	.25	61	117	.26	.0571	6.7	1	NM	NM	NM	NM	NM	(Lancaster)
11	Pico Rivera	13	10.7	1	0	2	0	.26	61	108	.31	.0547	2.2	2	.04	.022	.0045	0	0	
12	Lynwood	31	21.8	55	0	61	16	.14	7	30	.34	.0459	0	2	.04	.016	.0042	0	0	
13	Santa Clarita	12*	5.4*	0*	0*	0*	0*	.25	71	122	.13*	.0368*	0*	0*	.02*	.007*	.0009*	0*	0*	
14	Lancaster	13	7.1	0	0	0	0	.21	27	95	.08	.0186	0	0	NM	NM	NM	NM	NM	
16	La Habra	24	10.7	6	0	7	7	.26	36	76	.23	.0428	0	0	.03	.011	.0021	0	0	
17	Anaheim	19	12.1	5	0	5	0	.24	13	42	.28	.0472	0	1	.03	.014	.0031	0	0	
17	Los Alamitos	NM	NM	NM	NM	NM	NM	.16	11	35	NM	NM	NM	NM	.07	.014	.0027	0	0	
18	Costa Mesa[f]	16*	12.7*	5*	0*	8*	0*	.11*	0*	2*	.22*	.0463*	0*	0*	.03*	.006*	.0015*	0*	0*	
19	El Toro	9	5.1	0	0	0	0	.23	7	30	NM	NM	NM	NM	NM	NM	NM	NM	NM	
22	Norco	NM	NM	NM	NM	NM	NM	.25	56	114	NM	NM	NM	NM	NM	NM	NM	NM	NM	March Field
23	Rubidoux	12	10.3	1	0	1	0	.27	113	172	.16	.0364	0	0	.02	.008	.0007	0	0	(Riverside)
23	Riverside	14	8.5	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
24	Perris	NM	NM	NM	NM	NM	NM	.21	78	147	.14	.0322	0	0	NM	NM	NM	NM	NM	
25	Lake Elsinore	NM	NM	NM	NM	NM	NM	.24	62	121	NM	NM	NM	NM	NM	NM	NM	NM	NM	
28	Hemet	NM	NM	NM	NM	NM	NM	.19	21	77	NM	NM	NM	NM	NM	NM	NM	NM	NM	
29	Banning	NM	NM	NM	NM	NM	NM	.23	60	112	NM	NM	NM	NM	NM	NM	NM	NM	NM	
30	Palm Springs	6	2.9	0	0	0	0	.19	37	108	.09	.0239	0	0	NM	NM	NM	NM	NM	
30	Indio	NM	NM	NM	NM	NM	NM	.16	16	76	NM	NM	NM	NM	NM	NM	NM	NM	NM	
32	Upland	8	5.4	0	0	0	0	.32	97	146	.20	.0448	0	0	.03	.008	.0014	0	0	Norton AFB
33	Ontario	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	(San Bernardino)
34	Fontana	7	5.8	0	0	0	0	.32	113	155	.18	.0363	0	0	.03	.006	.0005	0	0	
34	San Bernardino	11	8.1	0	0	0	0	.30	115	159	.18	.0409	0	0	.03	.006	.0006	0	0	Ontario
35	Redlands	NM	NM	NM	NM	NM	NM	.27	116	164	NM	NM	NM	NM	NM	NM	NM	NM	NM	Airport
37	Crestline	NM	NM	NM	NM	NM	NM	.27	127	172	NM	NM	NM	NM	NM	NM	NM	NM	NM	

PPM - Parts by volume per million parts of air.

AAM - Annual Arithmetic Mean.

NM - Pollutant not monitored.

* - Less than 12 full months of data. May not be representative.

a) - The federal standard is annual arithmetic mean NO_2 greater than 0.0534 ppm.

b) - The federal standard is annual arithmetic mean SO_2 greater than 80 ug/m^3 (.03 ppm). No location exceeded the standard in 1989..

c) - The other federal (3-hour average > 0.50 PPM; 0.03 PPM, AAM) and state (1-hour > 0.25 PPM) standards were also not exceeded.

d) - Twenty-four hour average SO_2 ≥ 0.05 PPM with 1 hour Ozone ≥ 0.10 PPM, or with 24 hour TSP ≥ 100 ug/m^3.

e) - Visibility standard is less than 10 miles for hours with relative humidity less than 70%. Data received from FAA.

f) - Station closed March 12. New station opened November 1.

Figure 10A

SOUTH COAST
AIR QUALITY MANAGEMENT DISTRIC
9150 Flair Drive
El Monte, CA 91731

Source/ Receptor Area No.	Location of Air Monitoring Station	Suspended Particulates PM10[g]						Particulates TSP[h]			Lead[h]				Sulfate[h]	
				No. (%) Samples Exceeding Standard		Annual Averages [i]							Quarters/Months Exceeding Standard			No. (%) Samples Exceeding Standard
		Number of Samples	Max. Conc. in ug/m³ 24-hour	Federal >150 ug/m³ 24-Hour	State >50 ug/m³ 24-Hour	AAM Conc. ug/m³	AGM Conc. ug/m³	Number of Samples	Max. Conc. in ug/m³ 24-Hour	AGM Conc. ug/m³	Max. Mo. Conc. ug/m³	Max. Qtrly. Conc. ug/m³	Federal >1.5 ug/m³ Qrtly Avg.	State ≥1.5 ug/m³ Mo. Avg.	Max. Conc. in ug/m³ 24-Hour	State ≥25 ug/m³ 24-Hour
1	Los Angeles	58	137	0	33 (56.9)	61.1	56.0	61	217	107.4	0.17	0.12	0	0	23.0	0
2	W. Los Angeles	NM	NM	NM	NM	NM	NM	54	126	61.5	NM	NM	NM	NM	19.6	0
3	Hawthorne	55	133	0	24 (43.6)	49.7	44.9	60	370	80.3	0.13	0.07	0	0	22.6	0
4	Long Beach	59	119	0	26 (44.1)	50.5	46.5	61	195	82.3	0.11	0.08	0	0	20.0	0
5	Whittier	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
6	Reseda	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
7	Burbank	58	133	0	40 (68.9)	64.7	59.6	56	183	92.1	0.20	0.10	0	0	22.1	0
8	Pasadena	NM	NM	NM	NM	NM	NM	57	190	80.8	NM	NM	NM	NM	18.0	0
9	Azusa	59	172	1 (1.7)	35 (59.3)	60.7	54.1	57	341	110.9	NM	NM	NM	NM	16.9	0
9	Glendora	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
10	Pomona	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
11	Pico Rivera	NM	NM	NM	NM	NM	NM	57	206	95.4	0.19	0.12	0	0	32.0	1
12	Lynwood	NM	NM	NM	NM	NM	NM	56	239	105.9	0.15	0.11	0	0	19.6	0
13	Santa Clarita	48	100	0	23 (47.9)	53.5	48.8	NM	NM	NM	NM	NM	NM	NM	NM	NM
14	Lancaster	56	110	0	25 (44.6)	47.0	43.0	60	154	72.6	NM	NM	NM	NM	17.0	0
16	La Habra	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
17	Anaheim	NM	NM	NM	NM	NM	NM	61	264	87.4	0.15	0.08	0	0	17.7	0
17	Los Alamitos	55	138	0	21 (38.2)	46.2	42.0	61	251	90.1	NM	NM	NM	NM	17.4	0
18	Costa Mesa	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
19	El Toro	60	88	0	20 (33.3)	41.7	38.1	61	208	89.1	NM	NM	NM	NM	16.5	0
22	Norco	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
23	Rubidoux	61	252	7 (11.5)	51 (83.6)	94.3	81.3	61	347	132.2	0.07	0.05	0	0	16.9	0
23	Riverside	NM	NM	NM	NM	NM	NM	59	277	114.7	0.07	0.06	0	0	16.6	0
24	Perris	59	187	1 (1.7)	39 (66.1)	61.4	52.2	58	303	98.4	NM	NM	NM	NM	15.9	0
25	Lake Elsinore	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
28	Hemet	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
29	Banning	60	194	2 (3.3)	20 (33.3)	47.2	37.1	60	464	75.1	NM	NM	NM	NM	13.8	0
30	Palm Springs	60	292	2 (3.3)	17 (28.3)	44.6	35.8	61	768	69.6	NM	NM	NM	NM	12.1	0
30	Indio	58	712	4 (6.9)	39 (67.2)	90.3	66.4	60	1465	136.5	NM	NM	NM	NM	18.3	0
32	Upland	NM	NM	NM	NM	NM	NM	58	292	98.7	0.11	0.08	0	0	13.9	0
33	Ontario	61	254	4 (6.6)	49 (80.3)	79.0	69.7	57	349	116.2	NM	NM	NM	NM	16.4	0
34	Fontana	61	227	2 (3.3)	47 (77.0)	77.1	68.5	61	333	128.6	NM	NM	NM	NM	14.9	0
34	San Bernardino	59	271	3 (5.1)	44 (74.6)	80.5	69.2	60	327	119.4	0.09	0.07	0	0	17.8	0
35	Redlands	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
37	Crestline	59	87	0	13 (22.0)	39.1	34.9	61	160	58.2	NM	NM	NM	NM	10.2	0

ug/m³ - Micrograms per cubic meter of air.

AGM - Annual Geometric Mean.

g) - PM10 suspended particulates samples were collected every 6 days using the size-selective inlet high volume sampler with quartz filter media (PM10 refers to fine particles with aerodynamic diameter of 10 micrometers or less).

h) - Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media. Federal TSP standard superceded by PM10 standard, July 1, 1987

i) - Federal PM10 standard is AAM > 50 ug/m³; state standard is AGM > 30 ug/m³.

Figure 1CB

Figure Climatological Summary 100

LOS ANGLES, CA — CIVIC CENTER — PACIFIC — 34° 03' N — 118° 14' W — 270 FT. — 1976

Month	Temperatures °F: Normal: Daily maximum	Normal: Daily minimum	Normal: Monthly	Extremes: Highest maximum	Year	Lowest minimum	Year	Normal degree days Base 65 °F: Heating	Cooling	Precipitation in inches: Water equivalent: Normal	Maximum monthly	Year	Maximum in 24 hrs.	Year	Snow, ice pellets: Maximum monthly	Year	Maximum in 24 hrs.	Year	Relative humidity pct (Time of time): 04	10	16	22	Wind: Mean speed m.p.h.	Prevailing direction	Fastest mile: Speed m.p.h.	Direction	Year	No. of days clear	Partly cloudy	Cloudy	Mean number of days: Precipitation .01 inch or more	Snow, ice pellets 1 in. or more	Thunderstorms	Heavy fog visibility 1/4 mile or less	Clear to partly cloudy	Temperatures °F: Max. 90 and above	32 and below	Min. 32 and below	0 and below	Average station pressure	Sea level	Days
(a)				36		36					36		36		36		36																									
J	66.3	48.8	56.3	95	1971	28	1949	265	10	3.09	14.94	1969	0.00	1976	6.11	1956	0.3	1969	82	91	90	87	6.8	NE	49	N	1966	69	4.5	14	8	9	5	0	1	2	*	0	*	0		
F	67.6	48.3	58.1	95	1971	34	1949	207	14	2.77	12.42	1941	T	1964	4.03	1944	T	1951	81	94	92	70	6.9	W	40	NW	1961	72	4.2	13	7	9	3	0	1	2	*	0	0	0		
M	68.6	49.8	59.2	96	1972	35	1976	190	19	2.19	8.14	1941	0.00	1959	3.41	1943	0.0		76	92	92	72	7.0	W	47	NW	1964	75	4.2	12	9	9	4	0	1	1	*	0	0	0		
A	70.5	52.9	61.7	99	1966	39	1973	124	23	1.27	6.02	1969	0.00	1973	2.05	1956	0.0		73	93	94	74	6.6	W	40	NW	1959	70	4.9	22	10	8	4	0	1	1	1	0	0	0		
M	73.2	56.1	64.7	102	1967	46	1964	69	93	0.18	1.43	1955	0.00	1970	1.07	1955	0.0		81	96	95	79	6.3	W	39	NW	1969	86	4.9	11	12	8	1	0	*	1	1	0	0	0		
J	76.9	59.5	68.0	106	1973	50	1953	23	113	0.03	0.92	1964	0.00	1973	0.37	1964	0.0		85	99	96	78	5.7	W	37	N	1969	85	4.4	14	10	6	1	0	*	1	1	0	0	0		
J	82.9	63.3	73.2	103	1959	54	1952	0	258	0.00	0.03	1969	0.00	1976	0.03	1969	0.0		84	94	93	75	5.4	W	31	W	1967	82	2.3	21	9	1	4	0	*	1	4	0	0	0		
A	83.3	64.4	76.1	102	1967	53	1953	0	282	0.05	0.32	1958	0.00	1973	0.28	1958	0.0		84	94	93	79	5.3	W	24	E	1965	83	2.6	22	8	1	1	0	*	1	4	0	0	0		
S	82.8	62.9	72.9	110	1955	51	1956	3	234	0.17	2.82	1976	0.00	1959	1.83	1976	0.0		78	92	94	76	5.3	W	27	NW	1965	79	3.0	18	9	3	1	0	*	1	5	0	0	0		
O	78.0	58.7	68.4	104	1958	41	1971	35	140	0.23	1.53	1941	0.00	1970	0.62	1941	0.0		76	93	96	76	5.7	W	48	N	1958	77	3.0	16	9	6	2	0	*	3	3	0	0	0		
N	73.8	52.1	62.7	100	1966	39	1976	113	44	2.02	9.00	1963	0.00	1973	4.07	1970	0.0		81	95	95	82	6.4	W	42	N	1966	74	3.3	13	7	6	4	0	*	2	2	0	0	*		
D	68.0	48.1	58.1	89	1959	32	1951	210	0	2.16	6.97	1971	T	1968	3.93	1965	T	1947	82	95	90	83	6.6	NE	44	SE	1963	71	4.2	14	7	6	5	0	1	2	0	0	0	0		
YR	74.3	55.3	64.8	110	SEP 1959	28	JAN 1949	1245	1189	14.09	14.94	JAN 1969	0.00	JUL 1976	6.11	JAN 1956	0.3	JAN 1969	79	93	93	77	6.2	W	49	N	JAN 1966	75	4.0	185	106	74	34	0	6	17	20	0	*	0		

Means and extremes above are from existing and comparable exposures. Annual extremes have been recorded at other sites in the locality as follows: Maximum monthly precipitation 15.80 in December 1889; maximum precipitation in 24 hours 7.36 in December 1931; maximum monthly snowfall 2.0 in January 1932; maximum snowfall in 24 hours 2.0 in January 1932.

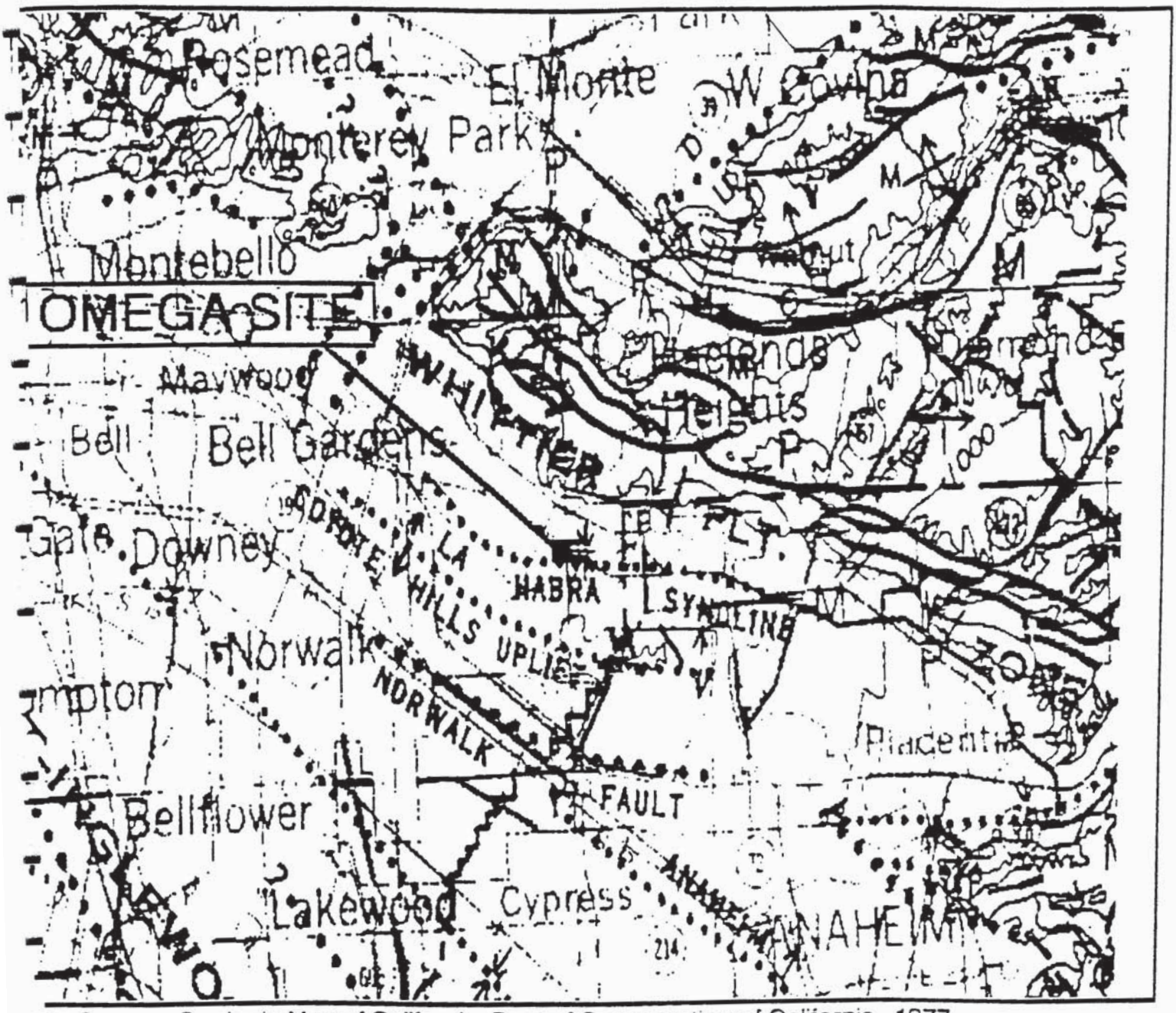
(a) Length of record, years, through the current year unless otherwise noted, based on January data.
(b) 70° and above at Alaskan stations.
* Less than one half.
T Trace.

NORMALS - Based on record for the 1941-1970 period.
DATE OF AN EXTREME - The most recent in cases of multiple occurrence.
PREVAILING WIND DIRECTION - Record through 1963.
WIND DIRECTION - Numerals indicate tens of degrees clockwise from true north. 00 indicates calm.
FASTEST MILE WIND - Speed is fastest observed 1-minute value when the direction is in tens of degrees.

§ Through 1963.

‡ Through 1964. The station did not operate 24 hours daily. Fog and thunderstorm data may be incomplete.

FIGURE . 11

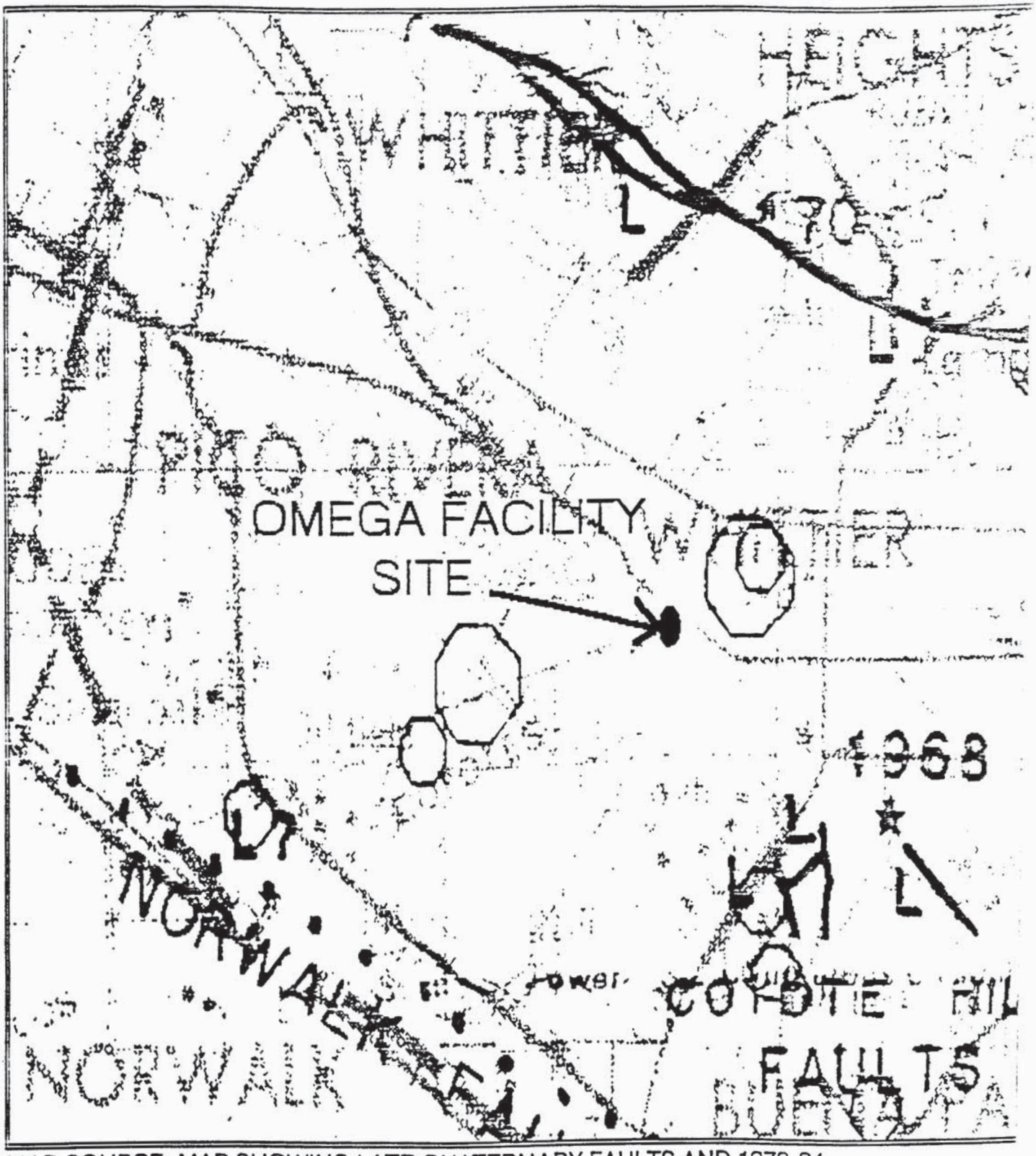


Map Source: Geologic Map of California, Dept of Conservation of California , 1977

Omega Whittier facility and its proximity to the Whittier Fault Line

<10 miles >

FIGURE 11A

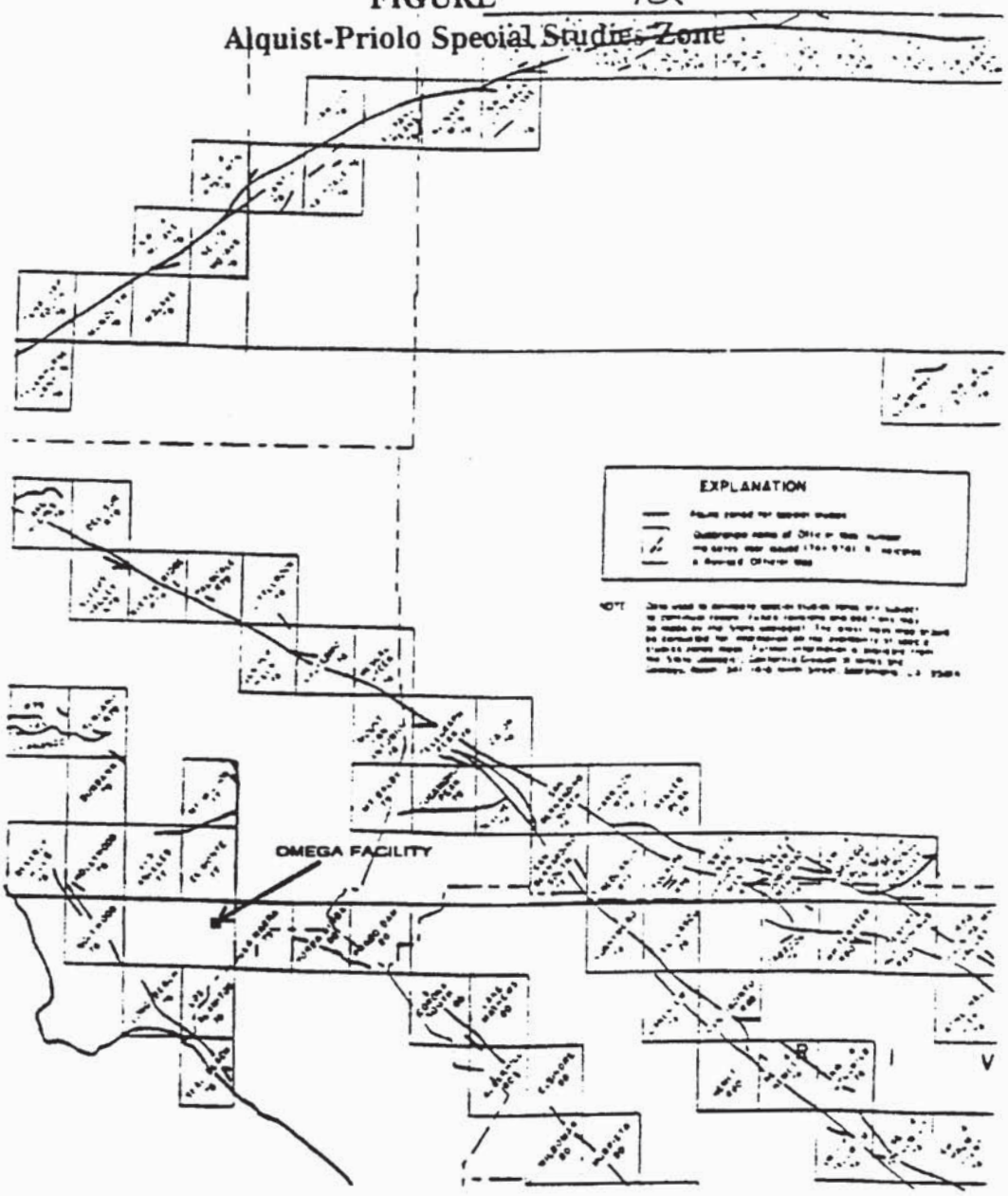


MAP SOURCE: MAP SHOWING LATE QUATERNARY FAULTS AND 1978-84 SEISMICITY OF THE LOS ANGLES REGION, CALIFORNIA" Interior U.S> Geological Survey, 1987

SCALE <----------2 MILES---------->

FIGURE 12

Alquist-Priolo Special Studies Zone



Map Source: Department of Conservation Division of Mines and Geology 1985

N

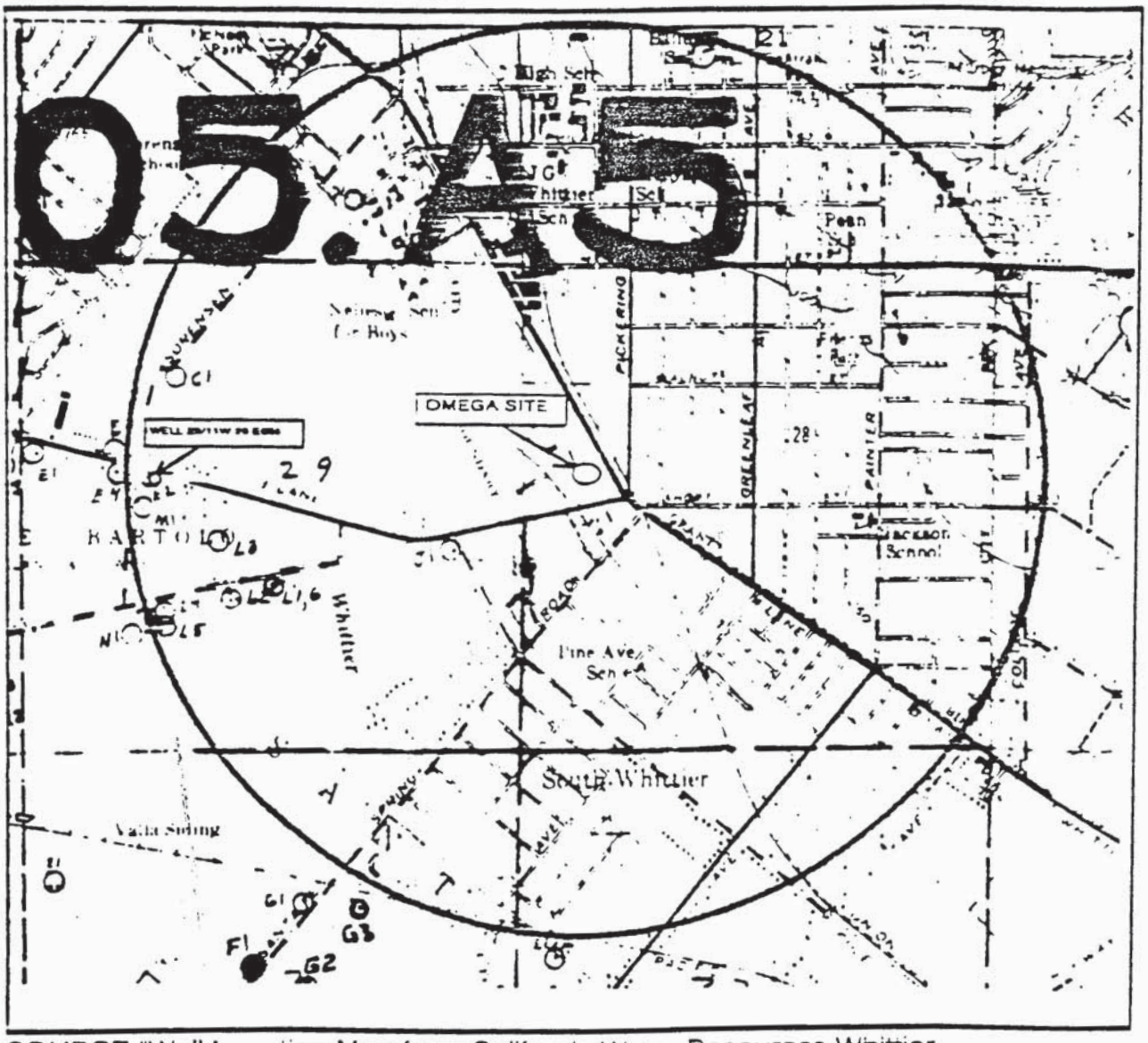
SCALE IN MILES

0 20 40 60

FAULT-RUPTURE HAZARD ZONES IN CALIFORNIA

FIGURE 13

WELL LOCATION MAP FOR THE WHITTIER SITE WITHIN ONE MILE RADIUS



SOURCE:"Well Location Map from California Water Resources Whittier Quadrangle"

This displays the wells located within one mile radius of the Omega Facility. The Well number 2S/11W 29 05E is marked. This is the only well with water data generated within 10 years.

DATE 05/05/88 WDIS GROUND WATER LEVELS AT WELLS

STATE WELL NUMBER	CO	GROUND SURFACE ELEVATION	DATE	GROUND TO WATER	WATER SURFACE ELEV.	AGENCY
02S/11W-29E01 S U-05.A5	19	150.5	01/30/77	77.5	73.0	1101
			02/27/77	77.5	73.0	
			03/27/77	69.5	81.0	
			04/24/77	79.5	71.0	
			05/29/77	85.5	65.0	
			06/19/77	90.5	60.0	
			07/31/77	92.5	58.0	
			08/28/77	90.5	60.0	
			09/25/77	92.5	58.0	
			10/30/77	94.5	56.0	
			11/27/77	94.5	56.0	
			12/25/77	89.5	61.0	
			01/29/78	83.5	67.0	
			02/26/78	84.5	66.0	
			03/26/78	79.5	71.0	
			04/30/78	62.5	88.0	
			05/28/78	67.5	83.0	
			06/25/78	75.5	75.0	
			07/30/78	81.5	69.0	
			08/27/78	73.5	77.0	
			09/24/78	70.5	80.0	
			10/29/78	71.5	79.0	
			11/29/78	67.5	83.0	
02S/11W-29E05 S U-05.A5	19	155.0	07/25/72	51.2	103.8	1101
			08/28/72	53.3	101.7	
			09/25/72	54.0	101.0	
			10/24/72	56.8	98.2	
			11/27/72	56.9	98.1	
			12/26/72	54.5	100.5	
			01/22/73	54.3	100.7	
			02/26/73	49.9	105.1	
			03/28/73	47.2	107.8	
			04/23/73	46.7	108.3	
			05/29/73	45.8	109.2	
			06/25/73	45.2	109.8	
			07/25/73	43.4	111.6	
			08/27/73	NM-9		
			08/28/73	42.1	112.9	
			09/24/73	41.9	113.1	
			10/30/73	41.5	113.5	
			11/26/73	40.0	115.0	
			12/26/73	39.0	116.0	
			01/28/74	37.7	117.3	
			02/27/74	29.9	125.1	
			03/26/74	36.8	118.2	
			04/25/74	37.0	118.0	
			05/29/74	36.2	118.8	
			06/25/74	37.2	117.8	
			07/24/74	39.2	115.8	
			08/27/74	39.9	115.1	
			09/24/74	39.7	115.3	
02S/11W-29E05 S U-05.A5	19	155.0	10/30/74	40.3	114.7	1101
			11/26/74	41.6	113.4	
			12/31/74	42.0	113.0	
			01/28/75	43.0	112.0	
			02/26/75	43.7	111.3	
			03/26/75	447.3	-292.3	
			05/01/75	42.9	112.1	
			05/27/75	40.9	114.1	
			06/23/75	40.5	114.5	
			07/29/75	40.9	114.1	
			08/25/75	42.0	113.0	
			10/27/75	44.1	110.9	
			01/07/76	45.0	110.0	
			02/04/76	45.4	109.6	
			04/13/76	46.0	109.0	
			05/06/76	48.6	106.4	
			06/11/76	50.2	104.8	
			07/14/76	50.0	105.0	
			08/12/76	52.5	102.5	
			09/14/76	54.5	100.5	
			10/08/76	56.0	99.0	
			11/16/76	58.2	96.8	
			12/14/76	60.0	95.0	
			01/14/77	60.0	95.0	
			02/10/77	58.0	97.0	
			03/09/77	61.2	93.8	
			04/11/77	66.5	88.5	
			05/13/77	59.0	96.0	
			06/10/77	62.0	93.0	
			07/13/77	62.6	92.4	
			08/11/77	62.5	92.5	
			09/16/77	63.9	91.1	
			10/19/77	69.5	85.5	
			11/16/77	67.5	87.5	
			12/ 9/77	70.3	84.7	
			01/23/78	66.7	88.3	
			02/21/78	66.4	88.6	
			03/27/78	61.9	93.1	
			04/24/78	51.0	104.0	
			05/25/78	52.7	102.3	
			04/09/79	37.6	117.4	
			10/11/79	39.3	115.7	
02S/11W-29L01 S U-05.A5	19	153.0	10/22/34	37.4	115.6	1101
			10/30/34	37.5	115.5	
			11/07/34	37.4	115.6	
			11/14/34	37.7	115.3	
			11/21/34	37.5	115.5	
			11/30/34	37.5	115.5	
			12/05/34	37.9	115.1	
			12/19/34	37.4	115.6	
			01/04/35	37.8	115.2	

We found no log for Well # 25/11W-29E5

FIGURE 13a GROUND WATER LEVEL WELL # 25/11W29E

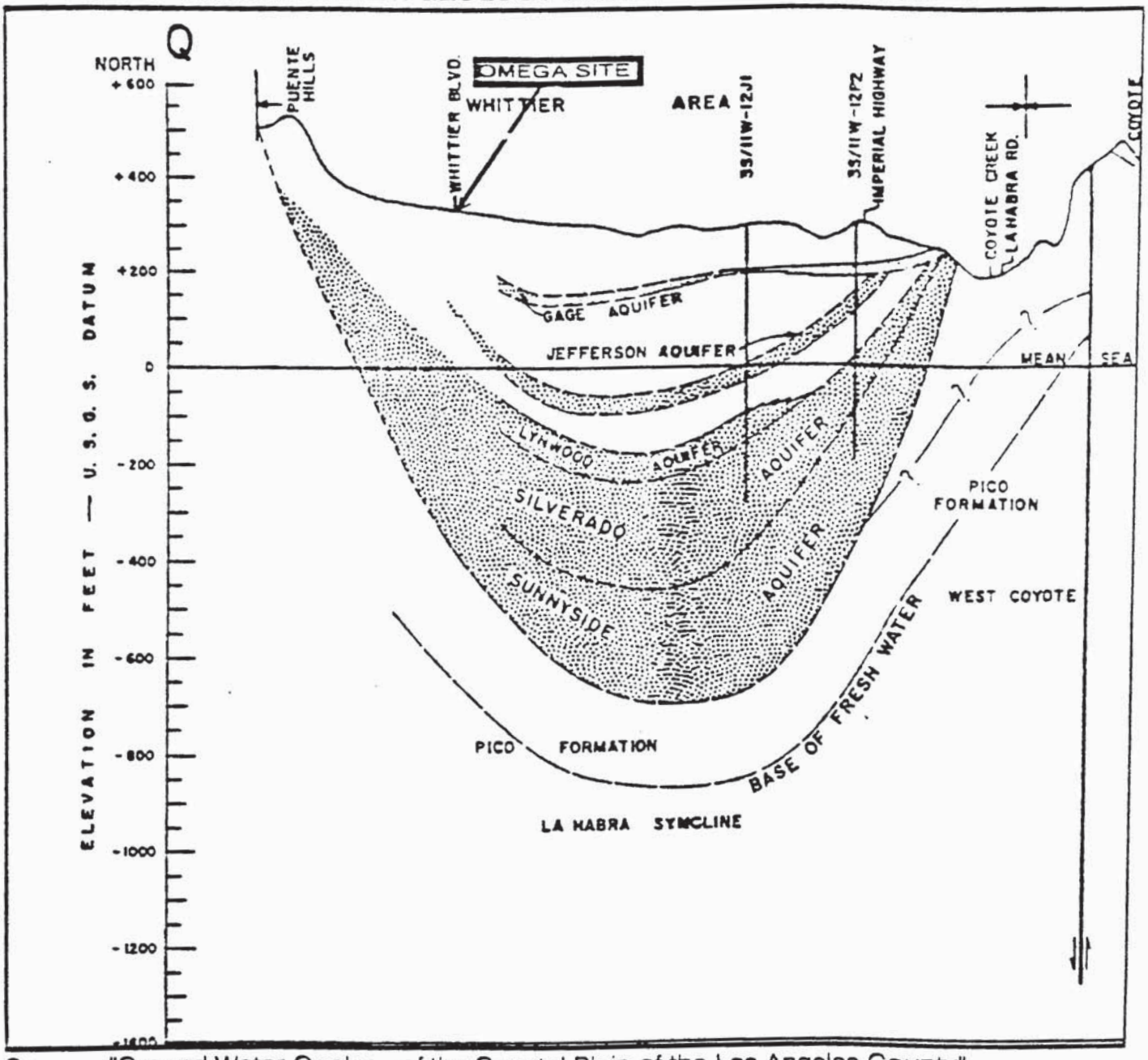
FIGURE 13B MINERAL ANALYSIS OF WELL 2S/11W 29E05

MINERAL ANALYSES OF GROUND WATER

DATE TIME	SAMPLER LAB	TEMP	FIELD LABORATORY PH	FIELD LABORATORY EC	MINERAL CONSTITUENTS IN MILLIGRAMS PER LITER / MILLIEQUIVALENTS PER LITER / PERCENT REACTANCE VALUE: CA	MG	NA	K	CACO3	SO4	CL	NO3	MILLIGRAMS PER LITER: B TURB	F SIO2	TDS SUM	TH NCH	SAR ASAR	REM
	U		LOS ANGELES HB															
	U-05		LA-SAN GABRIEL RIVER HU															
	U-05.A		COASTAL PLAIN HA															
	U-05.A5		CENTRAL HSA															
	02S/11W-29E01 S																	
07/06/70	1101	69 F			84	18	40	4.0	187	128	44	4.0	—	.5		283	1.0	
1229	1101	21 C	7.8	681	4.19	1.48	1.74	.10	3.74	2.66	1.24	.06		—	434	97	2.3	
					56	20	23	1	49	35	16	1						
	02S/11W-29E05 S																	
05/24/72	1101	48 F			124	30	46	3.0	202	211	85	10.1	.0	—		433	1.0	
1300	1101	9 C	7.8	920	6.19	2.47	2.00	.08	4.04	4.39	2.40	.16		—	630	231	2.3	
					58	23	19	1	37	40	22	1						
05/16/73	1101	76 F			186	40	62	5.0	235	311	136	22.4	.0	.6		629	1.1	
1045	1101	24 C	7.6	1380	9.28	3.29	2.70	.13	4.70	6.48	3.84	.36		.0	903	394	2.8	
					60	21	18	1	31	42	25	2						
07/02/75	1101	70 F			151	24	54	4.2	219	240	100	12.4	—	—	875	479	1.1	E
0902	1101	21 C	7.8	1190	7.53	2.05	2.39	.11	4.38	5.00	2.82	.20		—	719	260	2.7	
					62	17	20	1	35	40	23	2						S
06/10/76	1101	65 F			153	32	62	3.9	225	252	116	19.5	—	—	832	517	1.2	
1436	1101	18 C	7.5	1200	7.63	2.63	2.73	.10	4.50	5.25	3.27	.31		—	774	288	3.0	
					58	20	21	1	34	39	25	2						
06/21/77	1101	73 F			96	26	58	9.0	212	241	7.0	14.0	.25	.4	927*	346	1.4	E
	1101	23 C	7.4	1059	4.79	2.14	2.52	.23	4.24	5.02	.20	.23		—	578	135	3.1	T
					49	22	26	2	44	52	2	2						
05/08/84	1101	68.0F			122	29	57	3.9	172	217	91	19.9	.18	.3	690	429	1.2	
1115	1101	20.0C	7.8	1050	6.09	2.44	2.48	.10	3.44	4.52	2.57	.32		—	644	255	2.7	
					55	22	22	1	32	42	24	3						
06/12/85	1101	68.0F			130	29	60	4.2	190	202	97	4.8	110	.7	760	446	1.2	
1105	5050	20.0C	7.8	1090	6.49	2.38	2.61	.11	3.80	4.21	2.74	.08		—	751	254	2.9	
					56	21	23	1	35	39	25	1						S
06/22/87	1101	74.0F			97	19	74	4.4	179	164	75	—	.23	.3	570	329	1.8	
0950	1101	23.3C	7.7	950	4.88	1.62	3.25	.11	3.58	3.41	2.12			—	543	146	4.0	
					49	16	33	1										

FIGURE 14

GROUND WATER GEOLOGY UNDER THE WHITTIER SITE

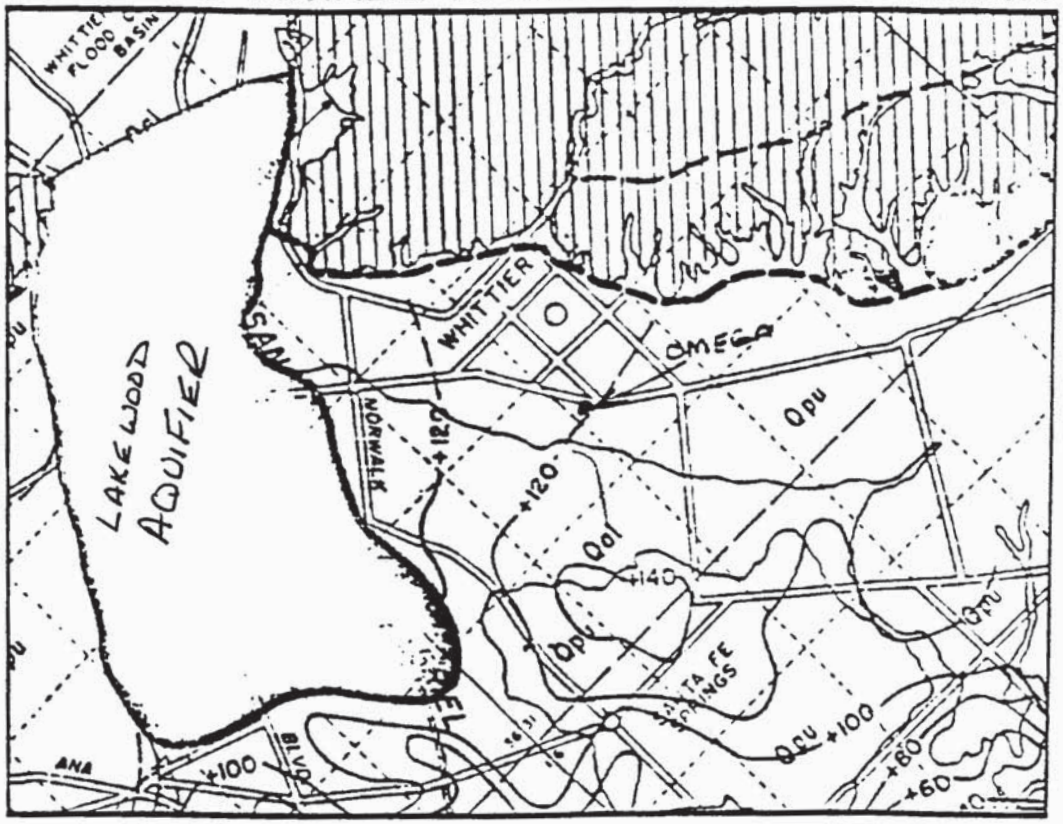


Source: "Ground Water Geology of the Coastal Plain of the Los Angeles County"

This displays the depth to the various ground water aquifiers near Omega's Whittier facility.

FIGURE 15

LOCATION OF AQUIFIERS TO THE OMEGA WHITTIER FACILITY



Source: "Ground Water Geology of the Coastal Plain of the Los Angeles County"

This shows the location of the closest aquifier to Omega's Whittier facility. They are the aquifiers in the Lakewood Formation. This shows that the groundwater under the site is not directly connected hydraulicly to a aquifier used for drinking water.

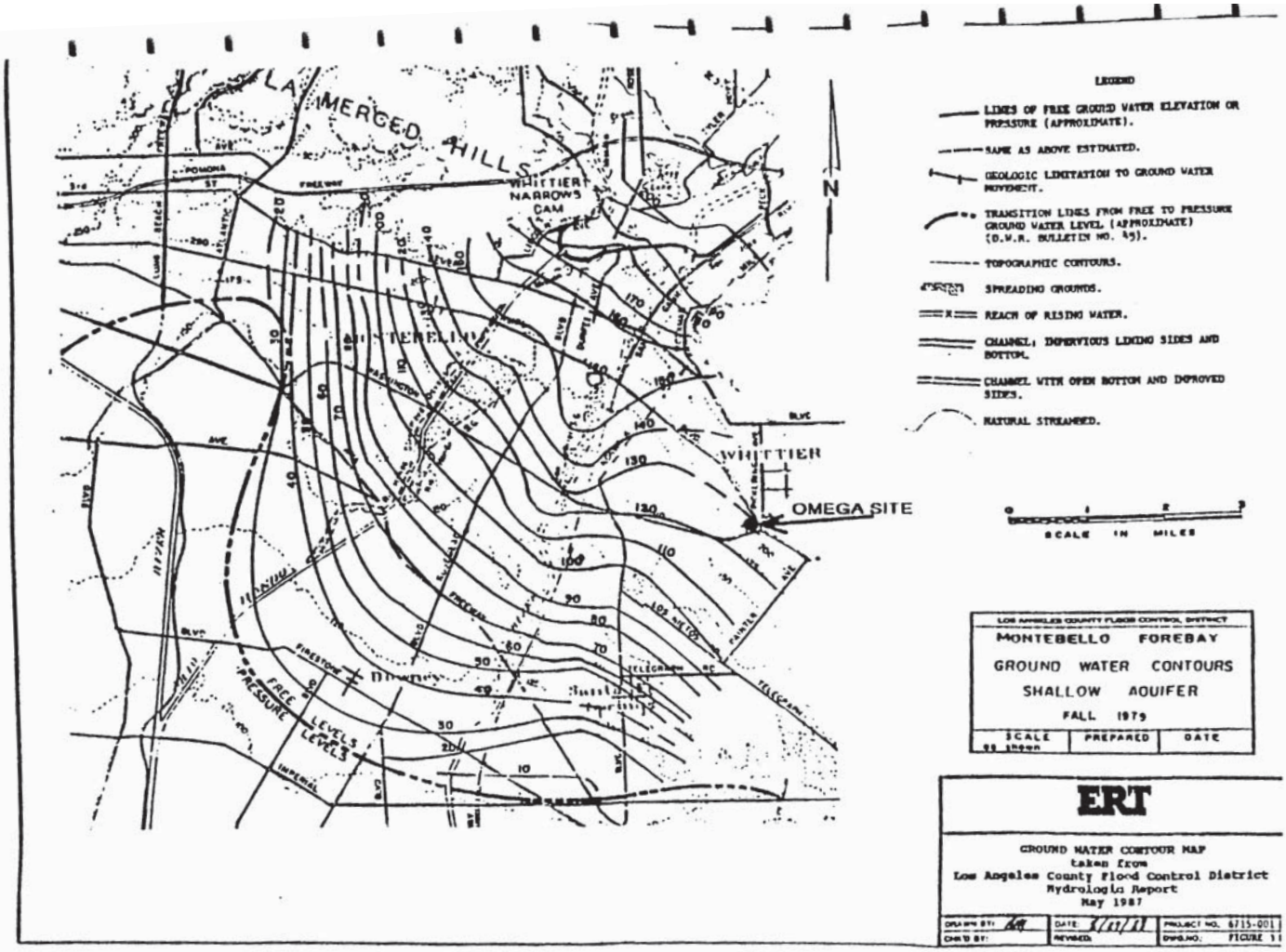


FIGURE 7
Ground Water Contours Map

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

NUMBER 2-[illegible]

WELL LOG

LOCAL DESIGNATION

FIGURE 16A WELL LOG for WELL 3S/11W-[illegible]

LOCATION 14 miles west of Norwalk Puente Mills Road, Loc. #1626L

.18 miles south of Little Lake Road, North of Norwalk

OWNER The Norwalk Co.

DATE COMPLETED March 31, 1930

DIAMETER OF CASING 12"

DRILLED BY J H Tompkins

SOURCE OF INFORMATION S G V P A

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 129' U.S.G.S.

SKETCH

MicroFILMED

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL		THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
1-9 00	120	Soil	Soil	9			
9-14	115	Sand	S	5			
14-17	112	Clay	C	3			
17-22	[illegible]	Rock and clay	RC	5			
22-44 00	[illegible]	Clay	C	22			
44-53 23	76	Sand	S	6+3			
53-71 05	58	Sand and clay	CS	18			
71-134 23	-5	Sand	S	29+34			
134-149 03	-20	Clay	C	15			
149-200 23	-71	Sand	S	14+30			
200-233 03	-104	Clay	C	33			
233-245 23	-116	Gravel	G	12			
245-317 03	-188	Clay	C	5+45+17			
317-323 23	-194	Sand	S	6			
323-530 03	-401	Clay	C	77+105+30			
530-548 05	-419	Sand and mud	TS	18			
548-608 16	-479	Fine black sand	TS	12+48			
608-614 26	-485	Coarse sand	S	6			
614-620 23	-491	Sand	S	6			
620-626 05	-497	Sand and clay	CS	6			
626-638 03	-509	Clay	C	12			
638-644 23	-515	Sand	S	6			
644-647 26	-518	Coarse sand	S	3			
647-668 23	-539	Gravel, Cut 653-670	G	21			
668-692 16	-562	Fine sand	TS	24			
692-704 26	-575	Coarse sand	S	12+4			
704-710 26	-581	Fine gravel	G	6			
710-737 23	-608	Sand	S	27			
737-740 03	-611	Clay	C	3			
		Plugged 3' rock					

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

86612 6-31 15M CALIFORNIA STATE PRINTING OFFICE

*** B04 ***

DATE 05/05/88 WDIS GROUND WATER LEVELS AT WELLS PAGE 20684

STATE WELL NUMBER	CO	GROUND SURFACE ELEVATION	DATE	GROUND TO WATER	WATER SURFACE ELEV.	AGENCY
03S/11W-06N02 S U-05.A5	19	130.8	05/03/45	28.5	102.3	1101
			06/14/45	30.5	100.3	
			07/05/45	30.9	99.9	
			08/16/45	33.8	97.0	
			09/06/45	34.6	96.2	
			10/18/45	35.7	95.1	
			11/08/45	35.3	95.5	
			12/20/45	35.0	95.8	
			01/16/46	33.8	97.0	
			02/21/46	31.9	98.9	
			03/14/46	32.7	98.1	
			04/04/46	31.2	99.6	
			05/16/46	31.8	99.0	
			06/06/46	32.6	98.2	
			07/18/46	35.2	95.6	
			08/08/46	36.0	94.8	
			09/19/46	38.1	92.7	
			10/10/46	37.4	93.4	
			11/21/46	36.8	94.0	
			12/13/46	35.6	95.2	
			01/03/47	34.5	96.3	
			02/13/47	32.6	98.2	
			03/06/47	32.0	98.8	
			04/17/47	33.1	97.7	
			05/08/47	34.4	96.4	
			07/10/47	38.0	92.8	
			08/21/47	39.2	91.6	
			09/11/47	39.8	91.0	
			10/02/47	40.2	90.6	
			11/13/47	40.5	90.3	
			12/04/47	40.3	90.5	
			01/15/48	40.7	90.1	
			02/05/48	40.6	90.2	
			03/18/48	41.4	89.4	
			04/08/48	41.3	89.5	
			05/20/48	44.0	86.8	
			06/10/48	44.4	86.4	
			07/01/48	45.4	85.4	
			08/12/48	48.2	82.6	
			09/02/48	48.8	82.0	
			10/14/48	49.6	81.2	
			11/04/48	50.0	80.8	
			01/06/49	50.4	80.4	
			02/17/49	50.1	80.7	
			03/10/49	49.3	81.5	
			04/21/49	52.0	78.8	
			05/12/49	53.1	77.7	
			06/02/49	53.5	77.3	
			07/14/49	55.7	75.1	
			08/25/49	58.0	72.8	
			09/15/49	58.9	71.9	
			10/06/49	59.5	71.3	
03S/11W-06N02 S U-05.A5	19	130.8	11/18/49	60.5	70.3	1101
			12/08/49	60.6	70.2	
			01/19/50	60.6	70.2	
			02/09/50	60.8	70.0	
			03/02/50	61.0	69.8	
			04/13/50	62.1	68.7	
			05/04/50	63.1	67.7	
			06/15/50	64.8	66.0	
			07/06/50	68.2	62.6	
			08/17/50	NM-4		
			09/07/50	NM-4		
			10/16/50	NM-4		
03S/11W-06N03 S U-05.A5	19	130.0	11/05/36	61.9	68.1	1101
			01/07/37	62.0	68.0	
			02/05/37	61.6	68.4	
			03/03/37	60.5	69.5	
			04/02/37	59.4	70.6	
			06/03/37	58.6	71.4	
			07/02/37	58.7	71.3	
			08/06/37	59.3	70.7	
			09/02/37	59.6	70.4	
			10/01/37	60.1	69.9	
			11/01/37	60.1	69.9	
			12/08/37	59.0	71.0	
			01/07/38	58.8	71.2	
			03/21/38	56.5	73.5	
			04/20/38	54.5	75.5	
			05/04/38	54.0	76.0	
			06/01/38	52.9	77.1	
			07/01/38	52.5	77.5	
			08/05/38	51.5	78.5	
			09/02/38	NM-9		
03S/11W-06P02 S U-05.A5	19	129.0	06/04/51	112.5	16.5	1101
			07/05/51	114.9	14.1	
			08/06/51	118.5	10.5	
			10/02/51	120.3	8.7	
			01/08/52	118.9	10.1	
			02/04/52	118.0	11.0	
			03/04/52	116.7	12.3	
			04/02/52	114.4	14.6	
			04/17/52	113.4	15.6	
			05/08/52	112.6	16.4	
			05/14/52	113.2	15.8	
			05/29/52	115.1	13.9	
			06/04/52	115.6	13.4	
			06/19/52	115.4	13.6	
			07/02/52	116.0	13.0	
			07/08/52	115.3	13.7	
			07/31/52	117.7	11.3	
			08/21/52	120.1	8.9	

FIGURE 16B-1 GROUNDWATER LEVELS WELL 3S/11W LP2

*** C04 ***

*** C04 ***

DATE 05/05/88 WDIS GROUND WATER LEVELS AT WELLS PAGE 20685

STATE WELL NUMBER	CO	GROUND SURFACE ELEVATION	DATE	GROUND TO WATER	WATER SURFACE ELEV.	AGENCY
03S/11W-06P02 S U-05.A5	19	129.0	08/25/52	120.4	8.6	1101
			09/11/52	122.0	7.0	
			09/29/52	122.3	6.7	
			10/02/52	122.0	7.0	
			10/23/52	121.7	7.3	
			11/05/52	122.7	6.3	
			11/13/52	121.1	7.9	
			12/04/52	118.8	10.2	
			12/23/52	118.2	10.8	
			01/06/53	115.7	13.3	
			01/15/53	116.0	13.0	
			02/02/53	115.0	14.0	
			02/05/53	115.3	13.7	
			02/26/53	125.8	3.2	
			03/03/53	114.2	14.8	
			03/19/53	115.6	13.4	
			04/01/53	116.7	12.3	
			04/09/53	116.9	12.1	
			04/30/53	119.7	9.3	
			05/18/53	122.0	7.0	
			06/01/53	123.6	5.4	
			06/11/53	124.6	4.4	
			07/02/53	126.9	2.1	
			07/07/53	128.4	.6	
			07/23/53	129.6	-.6	
			08/13/53	131.4	-2.4	
			09/03/53	132.6	-3.6	
			09/24/53	132.8	-3.8	
			10/15/53	134.4	-5.4	
			11/04/53	135.0	-6.0	
			11/09/53	134.3	-5.3	
			11/24/53	132.3	-3.3	
			12/08/53	131.6	-2.6	
			12/17/53	130.3	-1.3	
			01/06/54	130.9	-1.9	
			01/07/54	130.5	-1.5	
			02/03/54	128.7	.3	
			02/18/54	129.6	-.6	
			03/09/54	128.1	.9	
			03/11/54	128.2	.8	
			04/01/54	127.2	1.8	
			04/22/54	127.7	1.3	
			05/13/54	130.0	-1.0	
			06/03/54	130.9	-1.9	
			06/24/54	132.2	-3.2	
			07/15/54	133.9	-4.9	
			08/05/54	135.9	-6.9	
			08/26/54	137.4	-8.4	
			09/16/54	137.9	-8.9	
			10/05/54	137.7	-8.7	
			10/28/54	137.7	-8.7	
			11/18/54	136.3	-7.3	
03S/11W-06P02 S U-05.A5	19	129.0	12/09/54	134.1	-5.1	1101
			12/14/54	133.5	-4.5	
			12/30/54	133.0	-4.0	
			01/20/55	130.6	-1.6	
			02/02/55	128.9	.1	
			02/10/55	128.4	.6	
			03/01/55	129.1	-.1	
			03/03/55	128.1	.9	
			03/24/55	127.7	1.3	
			04/14/55	127.9	1.1	
			05/05/55	128.3	.7	
			05/26/55	128.4	.6	
			06/01/55	128.5	.5	
			06/14/55	129.7	-.7	
			07/07/55	131.0	-2.0	
			07/28/55	134.5	-5.5	
			08/02/55	134.7	-5.7	
			08/18/55	136.1	-7.1	
			09/08/55	137.3	-8.3	
			09/29/55	139.7	-10.7	
			10/18/55	140.0	-11.0	
			10/20/55	140.4	-11.4	
			10/24/55	139.9	-10.9	
			11/07/55	140.4	-11.4	
			11/10/55	140.5	-11.5	
			11/22/55	139.7	-10.7	
			12/02/55	139.2	-10.2	
			12/22/55	138.2	-9.2	
			01/12/56	136.5	-7.5	
			02/02/56	135.0	-6.0	
			02/28/56	134.7	-5.7	
			03/15/56	135.4	-6.4	
			04/05/56	137.0	-8.0	
			04/26/56	136.9	-7.9	
			05/17/56	137.3	-8.3	
			06/07/56	140.1	-11.1	1733
			06/28/56	143.1	-14.1	
			08/09/56	147.1	-18.1	
			08/30/56	149.1	-20.1	
			09/20/56	150.7	-21.7	
			10/11/56	151.6	-22.6	1101
			11/01/56	150.2	-21.2	
			11/20/56	151.6	-22.6	
			12/13/56	150.4	-21.4	
			01/03/57	149.7	-20.7	
			01/24/57	147.1	-18.1	
			02/14/57	144.6	-15.6	
			03/07/57	143.8	-14.8	
			03/28/57	142.7	-13.7	
			04/18/57	143.9	-14.9	
			05/09/57	144.8	-15.8	
			05/28/57	144.7	-15.7	

FIGURE 16B-2 GROUNDWATER LEVELS WELL 3S/11W 6P2

DATE 05/05/88 WDIS GROUND WATER LEVELS AT WELLS

STATE WELL NUMBER	CO	GROUND SURFACE ELEVATION	DATE	GROUND TO WATER	WATER SURFACE ELEV.	AGENCY
03S/11W-06P02 S U-05.A5	19	129.0	07/04/63	111.2	17.8	1101
			08/15/63	114.6	14.4	
			09/26/63	116.4	12.6	
			10/17/63	117.5	11.5	
			11/28/63	115.8	13.2	
			12/19/63	113.9	15.1	
			01/09/64	111.9	17.1	
			01/30/64	110.3	18.7	
			02/20/64	108.7	20.3	
			03/12/64	106.7	22.3	
			04/02/64	105.6	23.4	
			04/23/64	104.9	24.1	
			06/04/64	105.7	23.3	
			07/16/64	108.2	20.8	
			08/06/64	111.2	17.8	
			08/27/64	113.0	16.0	
			09/17/64	114.5	14.5	
			10/08/64	113.6	15.4	
			10/29/64	113.9	15.1	
			11/19/64	111.3	17.7	
			12/10/64	109.2	19.8	
			12/31/64	106.8	22.2	
			01/21/65	104.9	24.1	
			02/11/65	103.4	25.6	
			03/04/65	102.6	26.4	
			03/25/65	101.4	27.6	
			04/15/65	100.0	29.0	
			05/27/65	100.4	28.6	
			06/17/65	100.2	28.8	
			07/08/65	100.7	28.3	1733
			07/29/65	102.5	26.5	
			08/19/65	104.0	25.0	
			09/30/65	105.3	23.7	
			10/21/65	104.5	24.5	
			11/11/65	98.2	30.8	
			12/02/65	102.1	26.9	
			12/23/65	100.4	28.6	
			01/13/66	98.6	30.4	
			02/03/66	97.4	31.6	
			02/24/66	96.4	32.6	
			03/17/66	95.4	33.6	
			04/07/66	94.4	34.6	
			04/28/66	94.0	35.0	
			05/19/66	94.5	34.5	
			06/30/66	96.7	32.3	
			01/09/69	96.9	32.1	
			01/30/69	95.6	33.4	
			02/20/69	94.6	34.4	
			03/13/69	93.3	35.7	
			04/03/69	92.4	36.6	
			04/24/69	93.0	36.0	
			05/15/69	93.3	35.7	

STATE WELL NUMBER	CO	GROUND SURFACE ELEVATION	DATE	GROUND TO WATER	WATER SURFACE ELEV.	AGENCY
03S/11W-06P02 S U-05.A5	19	129.0	06/05/69	93.4	35.6	1733
			07/17/69	94.9	34.1	
			08/07/69	95.7	33.3	
			08/28/69	96.6	32.4	
			09/18/69	99.7	29.3	
			10/01/70	100.3	28.7	
			10/22/70	101.2	27.8	
			11/12/70	101.6	27.4	
			12/03/70	99.9	29.1	
			12/24/70	99.3	29.7	
			01/14/71	98.2	30.8	
			02/04/71	95.0	34.0	
			07/01/71	97.6	31.4	
			07/22/71	99.2	29.8	
			09/01/71	101.4	27.6	
			09/22/71	102.5	26.5	
			10/13/71	103.6	25.4	
			12/15/71	101.4	27.6	
			01/05/72	99.8	29.2	
			01/26/72	100.1	28.9	
			02/16/72	98.9	30.1	
			03/08/72	98.9	30.1	
			03/29/72	99.0	30.0	
			04/19/72	99.6	29.4	
			05/10/72	100.8	28.2	
			05/31/72	99.9	29.1	
			06/21/72	101.6	27.4	
			07/12/72	103.6	25.4	
			08/23/72	107.4	21.6	
			09/13/72	109.9	19.1	
			07/04/73	NM-9		
			07/25/73	103.6	25.4	
			08/15/73	104.1	24.9	
			09/05/73	104.5	24.5	
			09/26/73	105.1	23.9	
			10/17/73	105.5	23.5	
			11/07/73	105.4	23.6	
			11/28/73	103.7	25.3	
			12/19/73	102.9	26.1	
			01/09/74	100.3	28.7	
			01/30/74	99.8	29.2	
			02/20/74	98.5	30.5	
			03/13/74	96.7	32 3	
			04/03/74	96.6	32.4	
			04/24/74	96.4	32.6	
			05/15/74	95.6	33.4	
			06/05/74	96.3	32.7	
			06/26/74	97.2	31.8	
			07/17/74	98.6	30.4	
			08/07/74	99.6	29.4	
			08/28/74	100.1	28.9	
			09/18/74	101.6	27.4	

FIGURE 16-B-4 GROUNDWATER LEVELS WELL # 3S/11W-6P

*** D04 ***

STATE WELL NUMBER	CO	GROUND SURFACE ELEVATION	DATE	GROUND TO WATER	WATER SURFACE ELEV.	AGENCY
03S/11W-06P02 S U-05.A5	19	129.0	07/11/57	152.5	-23.5	1101
			07/30/57	153.6	-24.6	
			08/22/57	155.7	-26.7	
			09/12/57	157.5	-28.5	
			10/22/57	156.2	-27.2	
			11/14/57	153.8	-24.8	
			12/05/57	153.3	-24.3	
			12/26/57	151.3	-22.3	
			01/16/58	150.3	-21.3	
			02/06/58	149.4	-20.4	
			02/27/58	148.0	-19.0	
			03/20/58	144.5	-15.5	
			04/10/58	141.6	-12.6	
			05/01/58	141.9	-12.9	
			05/22/58	141.8	-12.8	
			06/12/58	140.7	-11.7	
			07/03/58	140.5	-11.5	
			07/24/58	141.1	-12.1	
			08/14/58	141.0	-12.0	
			09/04/58	141.8	-12.8	
			09/25/58	142.8	-13.8	
			10/16/58	142.9	-13.9	
			11/06/58	141.8	-12.8	
			11/10/58	141.5	-12.5	
			11/27/58	139.8	-10.8	
			12/18/58	138.4	-9.4	
			01/08/59	138.0	-9.0	
			01/29/59	136.7	-7.7	
			02/19/59	135.7	-6.7	
			03/12/59	134.2	-5.2	
			04/02/59	135.9	-6.9	
			04/23/59	137.9	-8.9	
			05/14/59	138.9	-9.9	
			06/04/59	141.4	-12.4	
			06/25/59	143.2	-14.2	
			07/16/59	144.3	-15.3	
			08/06/59	145.9	-16.9	
			08/27/59	146.5	-17.5	
			09/17/59	NM-2		
			10/08/59	NM-2		
			10/29/59	147.9	-18.9	
			11/19/59	149.4	-20.4	
			12/10/59	148.4	-19.4	
			12/31/59	146.1	-17.1	
			01/21/60	144.3	-15.3	
			02/11/60	142.4	-13.4	
			03/03/60	140.7	-11.7	
			03/24/60	140.5	-11.5	
			04/14/60	113.0(D)	16.0	
			05/05/60	140.4	-11.4	
			05/26/60	140.8	-11.8	
			06/16/60	141.7	-12.7	
03S/11W-06P02 S U-05.A5	19	129.0	07/07/60	143.6	-14.6	1101
			07/28/60	146.3	-17.3	
			08/18/60	147.7	-18.7	
			08/29/60	150.0	-21.0	
			09/08/60	149.1	-20.1	
			10/20/60	148.7	-19.7	
			11/10/60	146.1	-17.1	
			12/01/60	142.0	-13.0	
			12/22/60	140.0	-11.0	
			01/12/61	139.0	-10.0	
			02/02/61	136.0	-7.0	
			02/23/61	134.7	-5.7	
			03/16/61	133.8	-4.8	
			04/06/61	134.5	-5.5	
			04/27/61	135.2	-6.2	
			05/18/61	137.8	-8.8	
			06/08/61	138.9	-9.9	
			06/29/61	140.3	-11.3	
			07/20/61	142.6	-13.6	
			08/10/61	145.6	-16.6	
			08/31/61	147.6	-18.6	
			09/21/61	148.2	-19.2	
			10/12/61	148.6	-19.6	
			11/02/61	149.2	-20.2	
			11/23/61	148.2	-19.2	
			12/13/61	144.6	-15.6	
			01/04/62	142.8	-13.8	
			01/25/62	139.2	-10.2	
			02/15/62	137.1	-8.1	
			03/08/62	134.5	-5.5	
			03/29/62	132.7	-3.7	
			04/19/62	132.5	-3.5	
			05/10/62	132.0	-3.0	
			05/31/62	131.5	-2.5	
			07/12/62	131.6	-2.6	
			08/02/62	133.1	-4.1	
			08/23/62	132.1	-3.1	
			09/13/62	131.4	-2.4	
			10/04/62	131.0	-2.0	
			10/25/62	129.6	-.6	
			11/15/62	127.5	1.5	
			12/06/62	123.9	5.1	
			12/27/62	121.7	7.3	
			01/17/63	118.9	10.1	
			02/07/63	117.6	11.4	
			02/28/63	116.1	12.9	
			03/21/63	113.9	15.1	
			04/11/63	112.6	16.4	
			05/02/63	110.9	18.1	
			05/14/63	111.0	18.0	
			05/23/63	111.1	17.9	
			06/13/63	110.1	18.9	

*** E04 ***

FIGURE IL-B-3 GROUNDWATER LEVELS WELL # 35/11W 6P2

DATE 05/05/88 WDIS GROUND WATER LEVELS AT WELLS

STATE WELL NUMBER	CO	GROUND SURFACE ELEVATION	DATE	GROUND TO WATER	WATER SURFACE ELEV.	AGENCY
03S/11W-06P02 S U-05.A5	19	129.0	10/09/74	102.2	26.8	1733
			10/30/74	101.9	27.1	
			11/20/74	102.2	26.8	
			12/11/74	101.1	27.9	
			01/06/75	99.6	29.4	
			01/22/75	99.6	29.4	
			02/12/75	98.1	30.9	
			03/05/75	97.2	31.8	
			03/26/75	96.5	32.5	
			04/16/75	96.5	32.5	
			05/07/75	97.4	31.6	
			05/28/75	96.3	32.7	
			06/18/75	94.4	34.6	
			07/09/75	97.6	31.4	
			07/30/75	98.2	30.8	
			08/20/75	99.4	29.6	
			09/10/75	101.7	27.3	
			10/01/75	102.9	26.1	
			10/22/75	NM-7		
			11/12/75	104.0	25.0	
			12/03/75	104.4	24.6	
			12/24/75	105.0	24.0	
			01/14/76	105.4	23.6	
			02/04/76	105.5	23.5	
			02/25/76	103.4	25.6	
			03/17/76	102.6	26.4	
			04/07/76	102.8	26.2	
			04/28/76	102.4	26.6	
			05/19/76	103.0	26.0	
			06/09/76	104.8	24.2	
			06/30/76	107.0	22.0	
			07/21/76	108.0	21.0	
			08/11/76	110.1	18.9	
			09/01/76	111.7	17.3	
			09/22/76	110.5	18.5	
			10/13/76	111.8	17.2	
			11/03/76	112.7	16.3	
			11/24/76	113.2	15.8	
			12/15/76	114.0	15.0	
			01/05/77	113.8	15.2	
			01/26/77	113.4	15.6	
			02/16/77	112.6	16.4	
			03/09/77	111.0	18.0	
			03/30/77	110.3	18.7	
			04/20/77	110.0	19.0	
			05/11/77	109.0	20.0	
			06/06/77	108.3	20.7	
			06/27/77	111.4	17.6	
			07/18/77	113.5	15.5	
			08/08/77	115.8	13.2	
			08/29/77	117.9	11.1	
			09/19/77	119.6	9.4	
			10/10/77	120.6	8.4	1733
			10/31/77	120.5	8.5	
			11/21/77	121.1	7.9	
			12/12/77	120.7	8.3	
			01/02/78	NM-9		
			01/23/78	118.8	10.2	
			02/13/78	NM-9		
			03/06/78	115.2	13.8	
			03/27/78	113.8	15.2	
			04/17/78	111.2	17.8	
			05/08/78	109.6	19.4	
			05/30/78	108.8	20.2	
			06/19/78	108.1	20.9	
			07/10/78	107.4	21.6	
			07/31/78	107.2	21.8	
			08/21/78	106.3	22.7	
			09/11/78	105.4	23.6	
			10/02/78	105.3	23.7	
			10/23/78	106.0	23.0	
			11/13/78	106.0	23.0	
			12/04/78	104.9	24.1	
			12/26/78	103.0	26.0	
			01/22/79	101.5	27.5	
			02/05/79	100.1	28.9	
			02/26/79	97.8	31.2	
			03/19/79	NM-9		
			04/09/79	95.8	33.2	
			04/30/79	95.6	33.4	
			05/30/79	96.2	32.8	
			06/11/79	96.6	32.4	
			07/02/79	97.9	31.1	
			07/23/79	97.9	31.1	
			08/13/79	98.0	31.0	
			09/03/79	NM-9		
			09/24/79	100.1	28.9	
			10/15/79	99.8	29.2	
			11/05/79	98.9	30.1	
			11/26/79	99.1	29.9	
			12/17/79	99.4	29.6	
			01/07/80	98.7	30.3	
			01/28/80	NM-9		
			02/18/80	NM-9		
			03/10/80	95.0	34.0	
			03/31/80	93.7	35.3	
			04/21/80	NM-9		
			05/12/80	92.8	36.2	
			06/02/80	92.2	36.8	
			06/23/80	92.4	36.6	
03S/11W-07B02 S U-05.A5	19	123.0	07/05/49	58.6	64.4	1101
			08/01/49	60.0	63.0	
			08/31/49	61.9	61.1	

FIGURE 16-B-5 GROUND WATER LEVELS WELL #03S/11W 6-5

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER ANALYSIS (MINERAL) FIGURE 1 of 6 WATER ANALYSES 3S/11W06N01S WELL 48359

D: 3 | T: G | LAB. NO.: A1E4

BASIN	STATE WELL NO./STATION NO.	T	YR.	MO.	DAY	TIME	CO.	FIELD TEMP.	U
U05A5	03S11W06N01S		89	06	20	0750	19	73.	F

FIELD EC	FIELD PH	CO	DISCHARGE (CFS)	G.W. (FT.)	DEPTH (FT.)	SAMPLER	LAB.	CODE
410	8.0	.	.	.		505C		A

TYPE OF ANALYSIS: 1A

W.O. 1644-0034

DISSOLVED HARDNESS	DISSOLVED CALCIUM	DISSOLVED MAGNESIUM	DISSOLVED SODIUM	DISSOLVED POTASSIUM
ml	ml			
1 ml = mg $CaCO_3$	1 ml = mg Ca	meq/L Ha .	dil.	dil.
		meq/L Ca .	% A	% A
		meq/L Mg .	Curve	
as $CaCO_3$ mg/L: 98	Ca mg/L: 31.	Mg mg/L: 5.	Na mg/L: 89.	K mg/L: 3.6

DISSOLVED TOTAL ALKALINITY		DISSOLVED SULFATE	DISSOLVED CHLORIDE	DISSOLVED NITRATE
ml 1 ml = mg $CaCO_3$		ml	ml	ml
			1 ml = mg Cl	
as $CaCO_3$ mg/L: 191	pH: 8.1	SO_4 mg/L: 63.	Cl mg/L: 29.	NO_3 mg/L: 0.1 (2)

DISSOLVED FLUORIDE	DISSOLVED BORON	CALC. DIS. SOLIDS	DISSOLVED SOLIDS	SPECIFIC CONDUCTANCE 25° C
ml	ml		ml T 180 C = 8 105 C = 5	R (Std)
	A C	TURBIDITY CODE: Candle = C, Hach = A, Hellige = E, Hach Calorimeter = B		R (sam)
	Factor			Factor
	A (sam)			
F mg/L: 0.3	B mg/L: 0.1	Turb. / CODE / R	T.D.S. mg/L: 371 (T: 8)	Micromhos/cm: 565

DISSOLVED SILICA		
ml	OWNE Lakeland Cemetery (NAME)	ADDRESS
A C	Norwalk (CITY)	ZIP CODE; COPY TO OWNER ☐
Factor	DETAILED LOCATION	
A (sam)		
SiO_2 mg/L: .	POINT OF COLLECTION Tap in yard	PPG
	REF. POINT	Cl RESID. / COLOR 0
	DEPTH TO WATER	FT. SECCHI / M ODOR Strong
	DEPTH OF WELL	FT. WIND / FOAM
	USE Irrigation	% CLOUD COVER

. Ha	3.82 Alk
1.55 Ca	1.31 SO_4
0.41 Mg	0.82 Cl
3.87 Na	0.00 NO_3
0.09 K	0.02 F
5.92 meq/L sum	5.97 meq/L sum

LAB. 50.50 | OV 3

DATE TO LAB. JUN 22 1989
DATE STARTED JUN 26 1989
DATE COMPLETED JUL 3 1989
CHEMIST Reyes
CHECKED GORDON J. CHEW

PERF. INTER. ALGAE TURBID.

REMARKS

SAMPLER Pierotti OF DWR

DWR 2241 a (Rev. 8/78)

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
1540 ALCAZAR STREET
LOS ANGELES, CALIFORNIA 90033
Telephone: (213) 226-8111

THOMAS A. TIDEMANSON, Director
WYNN SMITH, Chief Deputy Director
CECIL BUCH, Assistant Director

ADDRESS ALL CORRESPONDENCE
P.O. BOX 4088
LOS ANGELES, CALIFORNIA 9:

FIGURE 16D

OMEGA CONFIDENTIAL

IN REPLY PLEASE REFER TO FILE: I-13643-1A

October 29, 1987

Darling, Wold & Agee
P.O. Box 348
Whittier, CA 90608

Gentlemen:

HAZARDOUS MATERIALS UNDERGROUND STORAGE
CLOSURE PERMIT NO. 3048B
FACILITY AT: 12504 E. WHITTIER BOULEVARD

This office has reviewed the soil/groundwater assessment report submitted on October 6, 1987 as required as part of the subject closure procedure. Based on the information submitted, the following action is required:

[X] The closure is final and no further action is required.

[ ] The soils removed during the tank excavation are unrestricted and may be used as backfill material. The closure is final and no further action is required.

[ ] The soils are not suitable as fill material and must be manifested and transported to a hazardous waste disposal facility as required by California Health and Safety Code, Division 20, Chapter 6.2, unless evidence is presented indicating that disposal is proper at a less restricted facility. Copies of all completed manifests shall be submitted to this office indicating legal disposal.

[ ] The permanent closure of the tank(s) in place shall comply with requirements set by the local Fire Department. Verification must be submitted to this office indicating proper closure and completion of all work.

If you have any questions concerning this matter, please contact Mr. John Huff at (213) 226-4018.

Very truly yours,

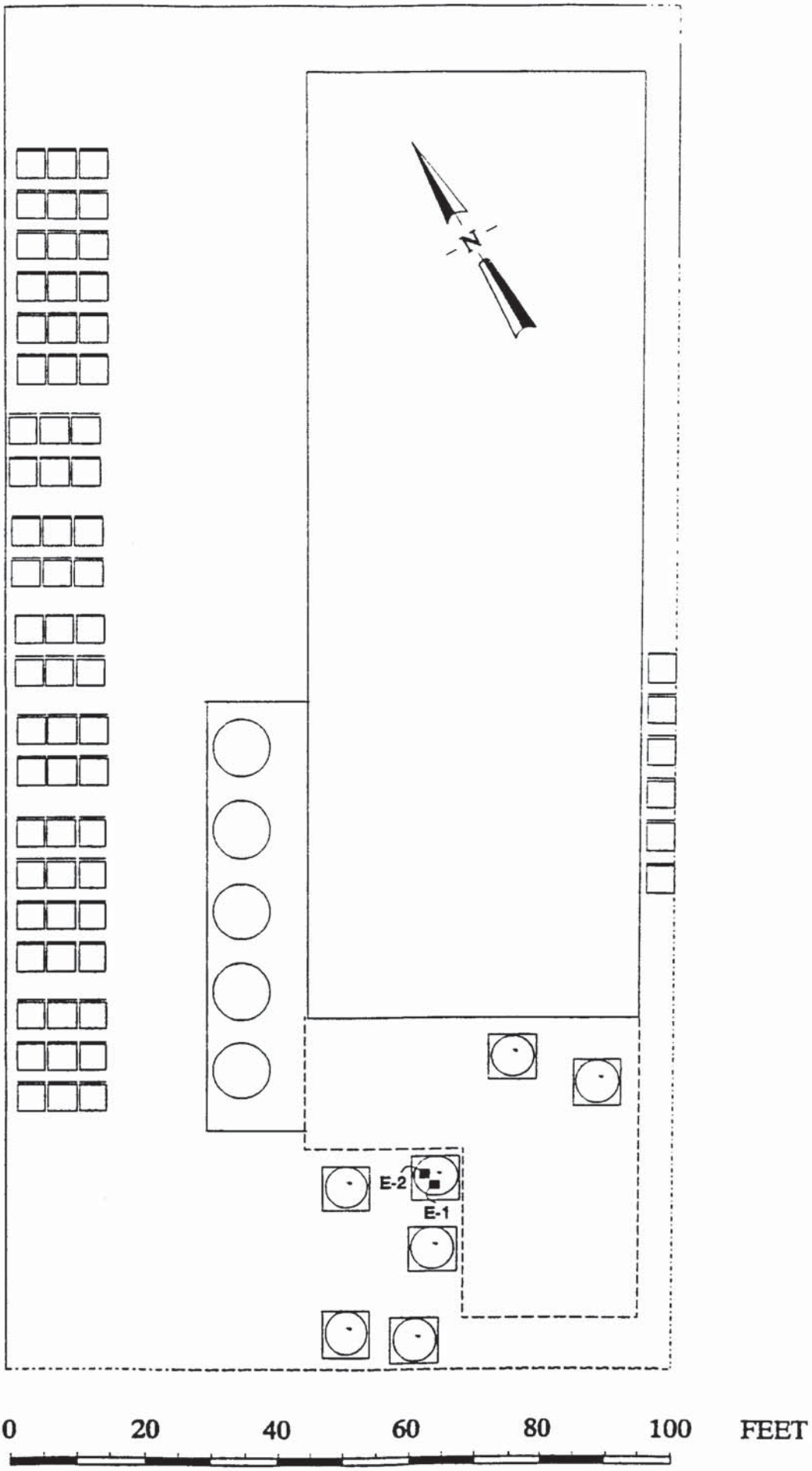
T. A. TIDEMANSON
Director of Public Works

By _____
Waste Management Division

cc: Thomson & Nelson

FIGURE S-3

CL204 8/86



SOIL SAMPLES UNDER UST (1987) *E-1, E-2* ■

FIGURE 17

1987 BORINGS		***E-1***	***E-2***
Maximum Depth of Contamination (feet)		10'	12'
Maximum Depth of Penetration (feet)		10'	12'
1,1,1-[TCA]	(200 ppb)	0	3500
[MC]	(40 ppb)	0	1700
PCE	(4 ppb)	200	0
ACETONE		46	13800
[MP]		6	0
TOLUENE	(1000 ppb)	0	400
1,1-[DCA]		0	156
1,2-[DCA]	(5 ppb)	0	166
[4CE]		240	3000
ETHYLBENZENE	(700 ppb)	0	176
O-XYLENE		9	490
TOTAL XYLENES	(1750 ppb)	0	400
TOTAL H-C		110	300

FIGURE 17A

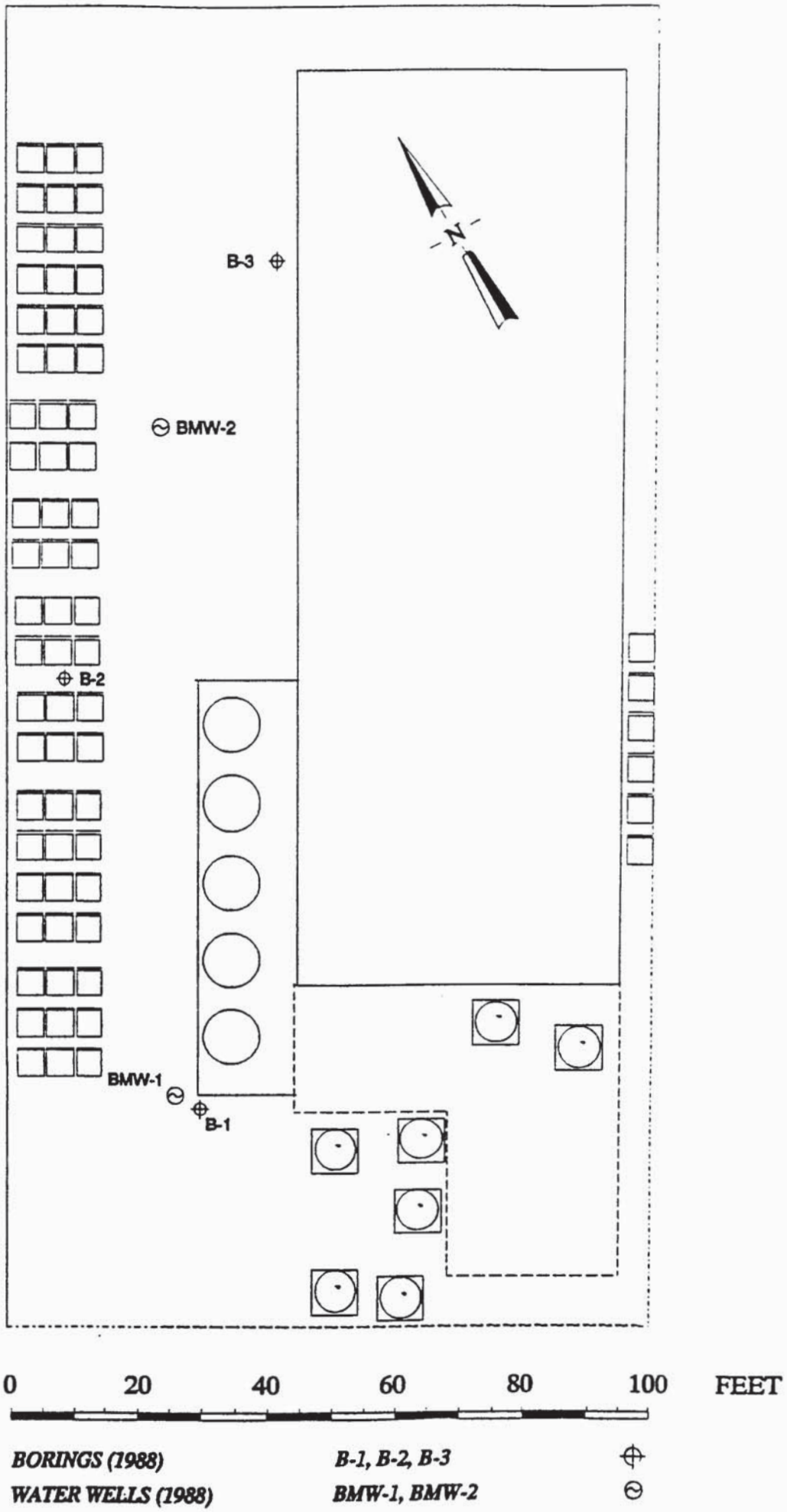

B-3
BMW-2
B-2
BMW-1
B-1
N
0
20
40
60
80
100
FEET
BORINGS (1988)
B-1, B-2, B-3
WATER WELLS (1988)
BMW-1, BMW-2

FIGURE 18

1988 BORINGS	B-1	B-2	B-3	BMW-1	BMW-2
Maximum Depth of Contamination (feet)	36'	15'	20'	75'	50'
Maximum Depth of Penetration (feet)	36'	26'	20'	110'	60'
1,1,1-[TCA] (200 ppb)	75	9	0	874	27
[MC] (40 ppb)	0	0	69	2650	141
TCE (5 ppb)	42	45	0	156	350
PCE (4 ppb)	257	127	5	854	266
ACETONE	112	0	35	0	0
CHLOROFORM (100 ppb)	10	0	0	0	0
2-BUTANONE (200 ppb)	12	24	11	0	0
[MP]	11	0	0	0	0
[TCFM] (3400 ppb)	0	0	0	156	0
DCE (6 ppb)	0	0	0	222	32
[DCY]	0	0	0	19	0
TTE (3400 ppb)	0	0	0	880	436
TOLUENE (1000 ppb)	10	24	7	0	0

1988 BMW-1 WATER SAMPLES	6/14/88	6/16/88	6/21/88
Maximum Depth of Penetration (feet)	110	110	110
[1,1,1-TCA] (200 ppb)	2080	2150	2200
[MC] (40 ppb)	650	260	280
TCE (5 ppb)	258	160	120
PCE (4 ppb)	1030	667	510
[ACE]	0	0	160
[CHF] (100 ppb)	0	24	0
[TCFM] (3400 ppb)	1540	1718	0
[DCE] (6 ppb)	1080	836	510
TTE (3400 ppb)	5240	0	0
[T-DCE] (16 ppb)	0	9	0

FIGURE 18A

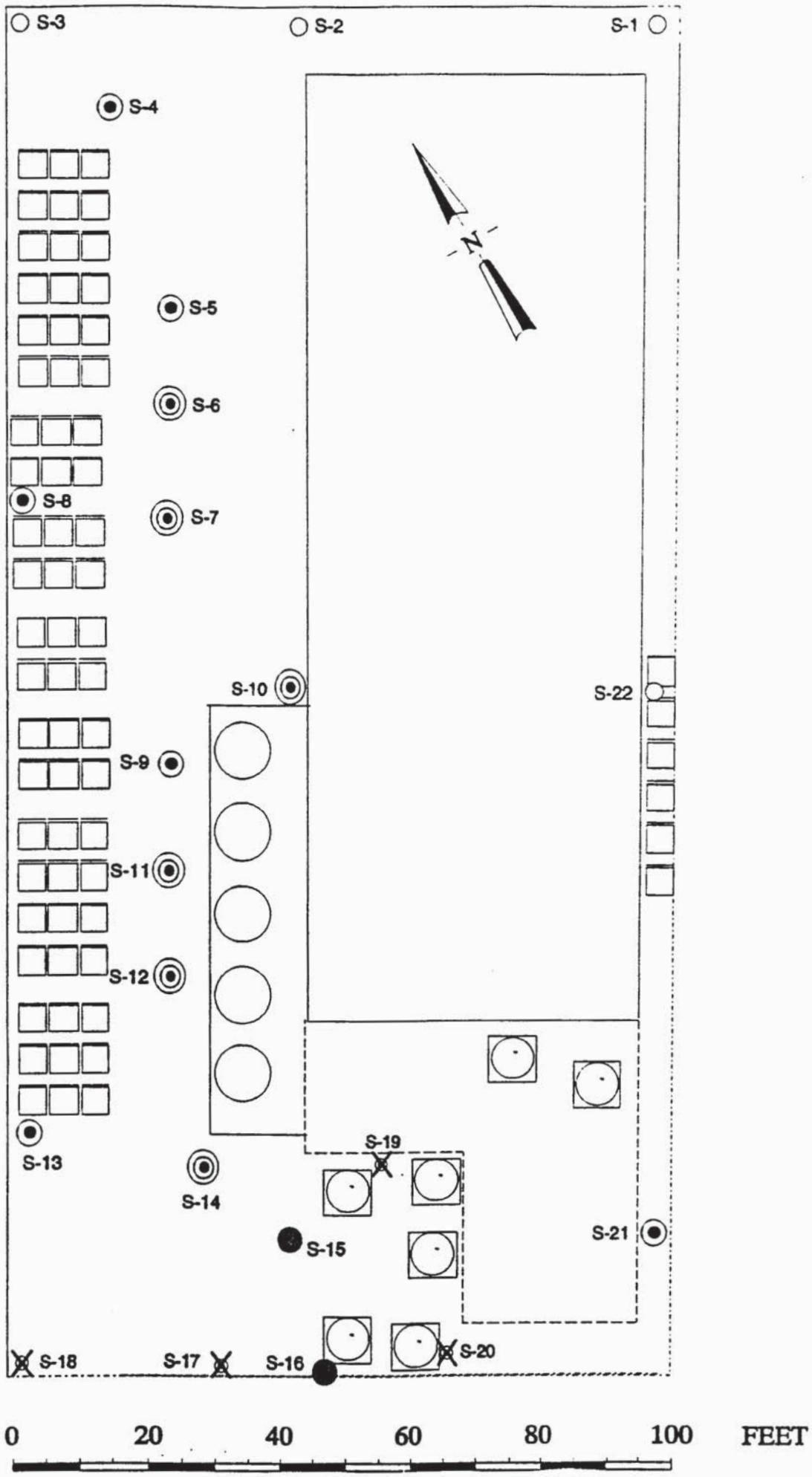

S-3
S-2
S-1
S-4
S-5
S-6
S-8
S-7
S-10
S-22
S-9
S-11
S-12
S-13
S-14
S-19
S-15
S-21
S-18
S-17
S-16
S-20
N
0
20
40
60
80
100
FEET

FIGURE 19

SUMMARY OF SOIL VAPOR SURVEY RESULTS
JANUARY 21, 1988
Chromatographic Readings

LOCATION	TOTAL READINGS	EQUIPMENT AIR BLANK	NET READING	RELATIVE LEVEL*
S-1	4.19	0.00	4.19	Minor
S-2	5.48	0.17	5.31	Minor
S-3	5.01	0.11	4.90	Minor
S-4	66.58	1.19	65.39	Moderate
S-5	83.19	1.80	81.39	Moderate
S-6	98.87	0.62	196.49	Substantial
S-7	359.05	3.34	711.42	Substantial
S-8	27.60	4.13	46.93	Moderate
S-9	12.75	3.59	18.32	Moderate
S-10	469.60	5.32	928.56	Substantial
S-11	80.70	12.52	136.36	Substantial
S-12	106.90	10.45	192.90	Substantial
S-13	16.50	5.41	22.18	Moderate
S-14	148.75	10.51	276.48	Substantial
S-15	1600.00	21.96	3156.08	Very Substantial
S-16	707.32	10.66	3483.29	Very Substantial
S-17	N/A	-	-	-
S-18	N/A	-	-	-
S-19	N/A	-	-	-
S-20	N/A	-	-	-
S-21	35.79	24.46	56.65	Moderate
S-22	13.29	12.91	1.90	Minor

CHROMATOGRAM INTERPRETATION*
Key to Site Contaminant Levels Shown on Facing Page

Point Not Analyzed	Point Not Analyzed	⊗
1.0 - 10.0 ppb	Minor Levels	○
10.0 - 100.0 ppb	Moderate Levels	◉
100.0 - 1000.0 ppb	Substantial Levels	◎
> 1000.0 ppb	Very Substantial Levels	●

FIGURE 19A

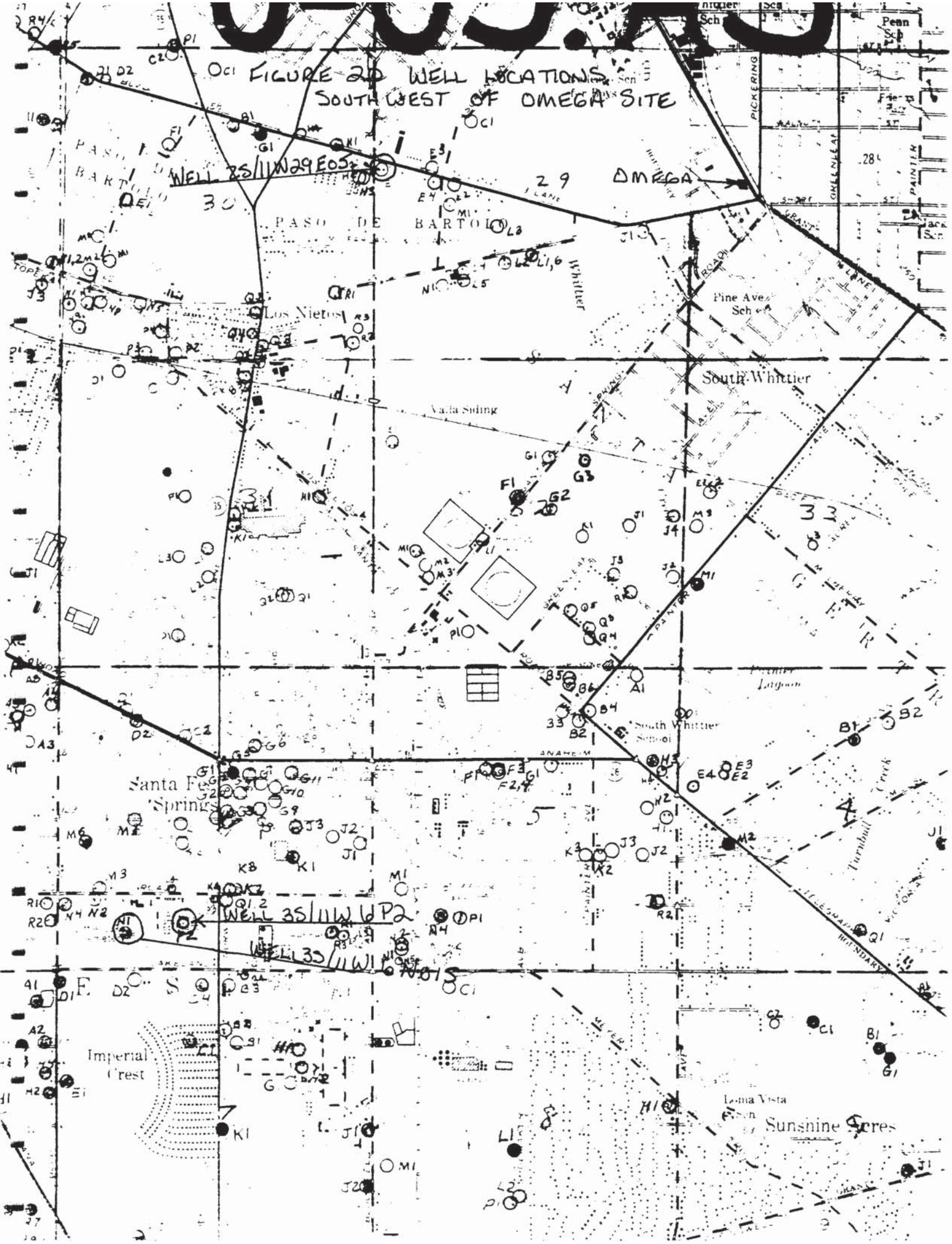


FIGURE 2D WELL LOCATIONS
SOUTHWEST OF OMEGA SITE
WELL 2S/11W29E05
OMEGA
PASO DE BARTOLO
Los Nietos
South Whittier
Santa Fe Springs
Imperial Crest
Loma Vista
Sunshine Acres
WELL 3S/11W16P2
WELL 3S/11W16N01S

FIGURE 22 PICTURES of FENCING

← WEST SIDE

EAST SIDE

← SOUTH SIDE

OMEGA RECOVERY FACILITIES INSPECTION REPORT

DATE: 4-14-92 INSPECTOR: Juan del Real SUPERVISOR: ____

ATTACHED TO THIS INSPECTION FORM IS A PLOT LAYOUT. PLEASE MARK ON THE PLOT LAYOUT LOCATIONS WHERE YOU FIND: LEAKS - L; SPILLS - S; LABELS MISSING- LM; LABELS OUT OF DATE- LOD;

GENERAL FACILITY FIGURE 23-1 DAILY INSPECTION REPORT

	Satif.	Unsatisf.
Are all entrances and gates closed or controlled.	✓	
Is there any trash or equipment (gloves) unattended or in wrong location.	✓	
Are all the operational personnel properly attired and protected.	✓	
Do any operation personnel have defective safety equipment-	✓	
Personal Respirators	✓	
Safety Glasses	✓	
Gloves	✓	
Are all the tools and equipment in the proper area	✓	
Are any aisles blocked.	✓	
All warning signs are in place and visible	✓	
Are all outdoor and indoor lights in working order.	✓	
Are all fences have warning signs	✓	
Are all fences in good order	✓	
Is there any accumulation of water in any sumps (greater than one inch)	✓	
Are there any spills in the loading and unloading area.	✓	

COMMENTS:

DIKES

On the accompanying plot map of the facility mark the locations of any dikes that are the following:

	Satisf	Unsatisf
Are there any residual waste and or spills in the diked areas.	✓	
Could any of the diked areas leak .	✓	
Are the diked areas in good repair.	✓	

SAMPLING EQUIPMENT

	Satisf	Unsatisf
Is there adequate sampling equipment.	✓	

SPILL EQUIPMENT

	Satisf	Unsatisf
AIR PUMPS		
Are the hoses and pumps operable and available for emergency use	✓	
ABSORBENT		
Is there enough absorbent for emergency use	✓	
RECOVERY CONTAINERS		
Is there an adequate supply	✓	

SAFETY EQUIPMENT

	Satisf	Unsatisf
FIRST AID EQUIPMENT -F AID denotes location on plot map.		
Is the first aid equipment complete and available for emergency use.	✓	
Are there any supplies need to be ordered.	✓	
Are the Fire Blankets available for use	✓	

OMEGA RECOVERY FACILITIES INSPECTION REPORT

DATE: 4-14-92 INSPECTOR: Juan del Real SUPERVISOR: ____

	Satisf	Unsatisf
FIRE EXTINGUISHERS- FE denotes placement on plot map		
Are all the extinguishers operable- mark those that are okay.	✓	
Are all the extinguishers within service date.	✓	
Are all areas surrounding extinguishers clear and signs visible.	✓	
Are all extinguishers mounted properly.	✓	
EMERGENCY OXYGEN APPARATUS	Satisf	Unsatisf
Is the oxygen equipment operable and available for emergency use.	✓	
EYE WASH AND SHOWERS are denoted by S/E on plot map	Satisf	Unsatisf
Are all the eyewash and shower stations operable and available for emergency use.	✓	
EMERGENCY WARNING BUTTONS- X denotes buttons on plot map	Satisf	Unsatisf
Is the emergency warning system operable and available for emergency use.		✓
EMERGENCY AIR MASKS	Satisf	Unsatisf
Are the air masks available for use and stored properly.	✓	
WALKIE TALKIES	Satisf	Unsatisf
Are they all in operable condition.	✓	
EMERGENCY PERSONNEL EQUIPMENT	Satisf	Unsatisf
Are the Rubber Boots available and working order	✓	
Are the Yellow Rain/Spill Suits available and working order.	✓	
Is there an adequate supply of emergency protective equipment.	✓	

Comments:

CONTAINERS

On the accompanying plot map of the facility, mark the locations of any containers that are the following:

	Satisf	Unsatisf
Identify any containers without labels.	✓	
Identify any containers labels show out of date for storage	✓	
Identify any containers that are or could leak - LK	✓	
Are there any containers swelling or heavily corroded.	✓	
Identify any containers stacked improperly - STK	✓	
Verify that there is adequate aisle space between container rows	✓	
Are there any non Omega labeled waste in an improper Area	✓	
Is any flammable waste stored within 25 feet of the property line. F	✓	
Is any flammable waste stored in an improper area.	✓	
Are any corrosive waste and flammable waste stored in an incompatible manner.	✓	
Is there any secondary containment leaks or cracks in the cement.	✓	

Comments:

FIGURE 23-2

OMEGA RECOVERY FACILITIES INSPECTION REPORT

DATE: 4-14-92 INSPECTOR: Juan del Rea /SUPERVISOR: ____

Sandee	MT	
Connie	MT	
Elaine	1,1,1,	150 gals
Carrie	MT	
Shiela	MT	
Peggy	Sludge	100 gals
Amy	Low boilers	300 gals
Cindy	MT	
~~Amy~~		
Linda	PERC	250 gals
Loudy	Low boilers	250 gals
Diane	out of Service	
Susan	out of Service	
Farrah	MT	
Racquel	TF 99.7 %	120 gals
Annette	MT	
Evette	MT	
Buela	MT	
Jenny	MT	
Heidi	MT	

Comments:

SUPPORT EQUIPMENT

BOILER	Satisf	Unsatisf
Pressure Gauge (85 psig)	✓	
Temperature Gauge (325 °F)	✓	

AIR COMPRESSOR Monitor and Record	Satisf	Unsatisf
Line Pressure Gauge (120 psig)	✓	
Oil Level	✓	
Temperature Gauge (170 °F)	✓	
Air Filter Indicator	✓	

FIGURE 2.5-7

OMEGA RECOVERY FACILITIES INSPECTION REPORT

DATE: 4-14-92 INSPECTOR: Juan del Real SUPERVISOR: _____

TANKS

	Satisf	Unsatisf
On the plot map of the facility mark the locations of tanks that are the following:	✓	
Identify any tanks that are leaking.	✓	
Identify any tanks that are improperly labeled.	✓	
Do all tanks have their identification name and placards displayed.	✓	
Check all tanks for corrosion.	✓	
Are there any spills in the containment area of the tanks.	✓	
Check all valving and pipes for leaks.	✓	
Are the hoses stored in a proper manner.	✓	
Are the hoses and couplings in proper working order.	✓	
Volume and identity of material in tanks is posted and correct.	✓	

Comments:

Waste Storage Tank	Waste Type	Volume/Amount
1	FIAM WASTE	4700
2	FIAM WASTE	4800
3	Sludge	500
4	Flam WASTE	4000
5	Still Bottoms	2000

Comments:

Product Tank	Material Stored Type	Volume/Amount
A	MT	
B	MT	
C	MT	
D	MT	
E	MT	
F	MT	

Comments:

Process Tanks	Material Type Stored	Volume/Amount

FIGURE 23-5

OMEGA RECOVERY FACILITIES INSPECTION REPORT

DATE: 4-14-92 INSPECTOR: Juan del Real SUPERVISOR: ____

PROCESSING EQUIPMENT

On the accompanying plot map of the facility mark the locations of any processing equipment that are the following;

UNIT	MATERIAL BEING PROCESSED	AMOUNT Being Processed
Jake	OFF	
Fat Jack	OFF	
Craig	OFF	
Kirk	STILL Bottoms	4120 gals
Patrick	gone	
Paul	OFF	
I		

	Satisf	Unsatisf
Are any pumps leaking or malfunctioning	✓	
Are all the units operating according to procedures	✓	✓
Is any equipment in need of repair.	✓	✓

Comments:

condenser for paul it's been send out to be fix

All remedial action shall be documented showing:

1. **What action was taken**
2. **When the action was taken.**
3. **Who performed the remedial action.**

INSPECTOR MUST REPORT REMEDIAL ACTION REQUIRED:

ACTIONS TAKEN TO CORRECT IDENTIFIED PROBLEMS:

Are there are areas or things that can be done to improve safety.

Remedial actions taken have corrected and reviewed by Supervisor and accepted as being completed:

Supervisor: ____ Date: ____ Time: ____

FIGURE 23-6

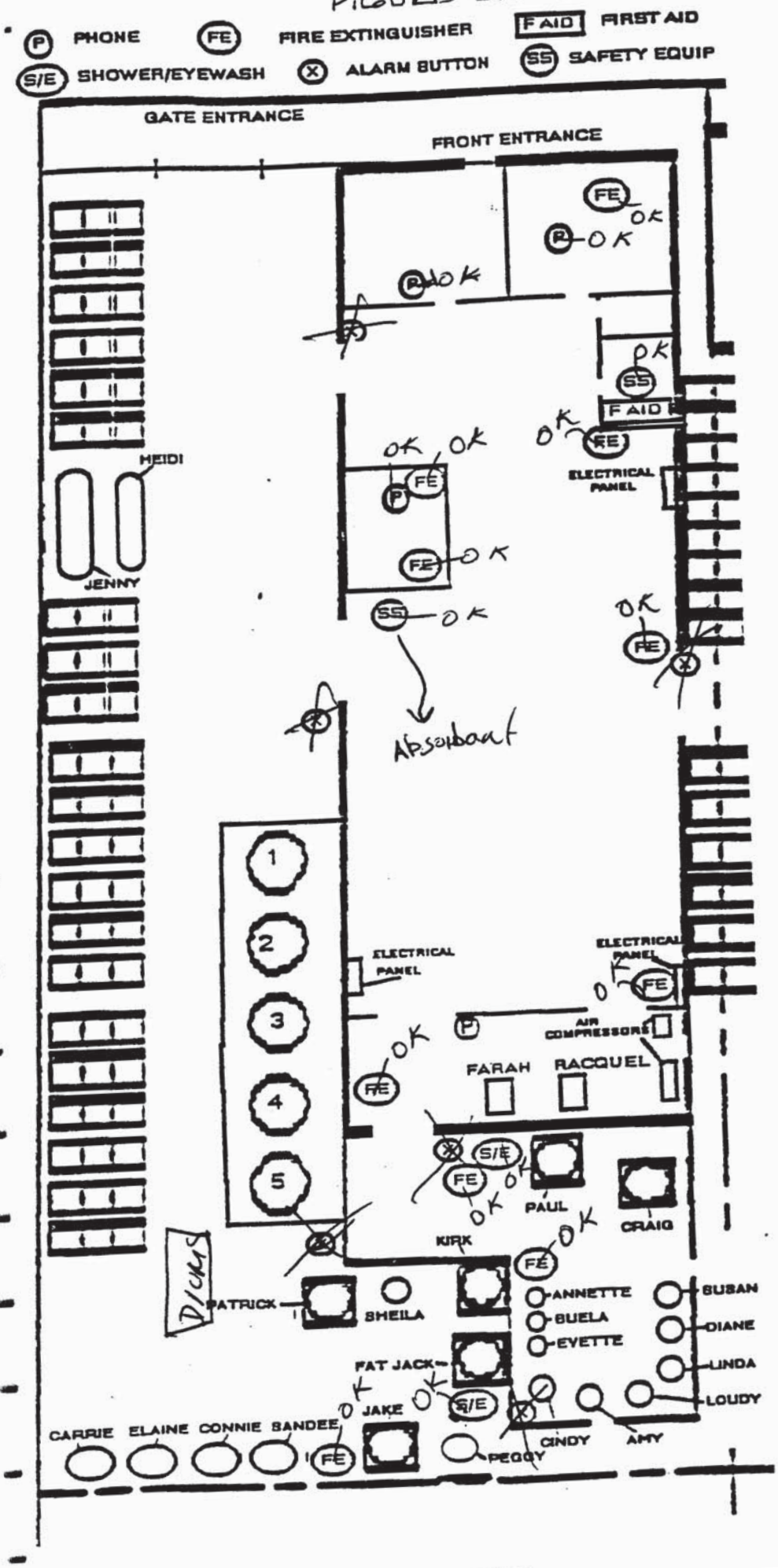

P PHONE
FE FIRE EXTINGUISHER
F AID FIRST AID
S/E SHOWER/EYEWASH
X ALARM BUTTON
SS SAFETY EQUIP
GATE ENTRANCE
FRONT ENTRANCE
HEIDI
JENNY
ELECTRICAL PANEL
ELECTRICAL PANEL
ELECTRICAL PANEL
AIR COMPRESSORS
FARAH
RACQUEL
PAUL
CRAIG
KIRK
PATRICK
SHEILA
ANNETTE
BUELA
EVETTE
SUSAN
DIANE
LINDA
LOUDY
FAT JACK
JAKE
CINDY
AMY
PEGGY
CARRIE
ELAINE
CONNIE
SANDEE
1
2
3
4
5
OK
Absorbant
DICKS

FIGURE 23-7

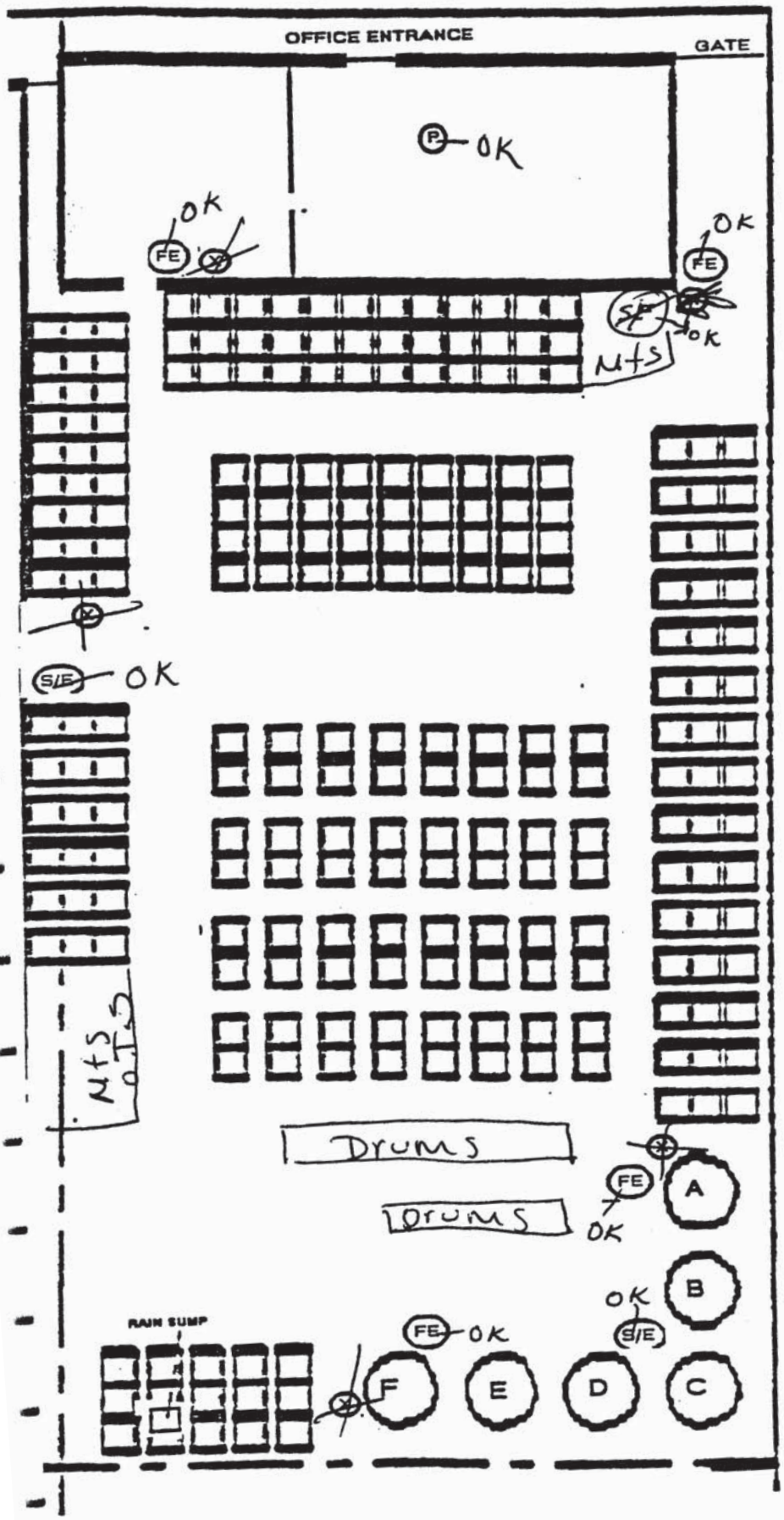

OFFICE ENTRANCE
GATE
P
OK
FE
OK
FE
OK
S/E
OK
Nts
S/E
OK
Nts
Drums
Drums
FE
OK
A
B
OK
S/E
RAIN SUMP
FE
OK
F
E
D
C

FIGURE 24

INVOICE

HACIENDA SECURITY SERVICES
15454 Gale Ave, Suite G
Hacienda Heights, CA 91745

Date 12/20/91
Invoice No. 900506

Account # 5178

Site No.: 1

OMEGA RECOVERY SERVICES
12504 E. Whittier Blvd.
Whittier, CA 90602

OMEGA RECOVERY SERVICES
12504 E. WHITTIER BLVD.
Whittier, CA 90602

QUESTIONS? PLEASE CALL (818) 369-2920

Item	Date	Qty	Description	Ref. Number	Amount
1	12/19/91		Other Installation Add motion detector and bell to Existing Burglar Alarm System, make System work		320.00
2	12/19/91		Monitoring Set-up Charge		65.00

PAST DUE INVOICES ARE SUBJECT TO A 1-1/2% SERVICE CHARGE !

o insure proper credit to your account,
please write on your check: Account # 5178

Invoice Total $ 385.00

A REVIEW OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS FOR THE CURRENT INITIAL REPORT AT THE OMEGA CHEMICAL CORPORATION SITE, WHITTIER, LOS ANGELES COUNTY, CALIFORNIA, 90602 INCLUDING A HISTORICAL SUMMARY OF PRIOR ASSESSMENTS

EPA ID# CAD041224501

DRAFT REPORT
II-102

FOR

(Omega Chemical Corporation)
12504 E. Whittier Boulevard
Whittier, California 90602

Submitted by
MESA², INC.
(Marine & Environmental Science Associates, Inc.)
12200 E. Washington Blvd., Suite E
Whittier, California 90606

MARCH 1992

The Omega property is located at 1254 E. Whittier Boulevard, Whittier, Los Angeles County, California. This is in section 28 of Township 2 South, Range 11 West, SBB&M (Figure 1). The property occupies approximately 40,000 square feet and is bounded by the Whittier Boulevard frontage road to the northeast and by 5 other properties on the remaining three sides and corners (Figure 2).

Currently, Omega primarily recycles spent chlorinated hydrocarbons and chlorinated fluorocarbons, but also treats a variety of other hazardous wastes which are returned to a usable form or treated before being sent to other facilities.

Previous site ownership is summarized by the Table 1 below.

YEARS	COMPANY NAME	TYPE OF BUSINESS
< 1963	Sierra Bullets, Inc.	Unknown
1963 - 1966	Fred R. Rippy Co.	Unknown
1966 - 1971	Unknown	Converted vans to ambulances
1971 - 1976	Bachelor Chemical	Recycling chemicals
1976 - Current	Omega Chemical Co. (leased land until 1987)	Recycling chemicals

Table 1. Summary of Omega Site Occupation, 1963 to Present

A brief historical outline of events which have occurred pertaining to the Omega company property is presented below:

1976	Omega begins plant operations on the "western" Omega portion (20,000 sq. feet) of their present site as shown on Figure 2, leased from Fred R. Rippy. No on-site waste disposal.
1979	Waste management protocols remain unchanged from this date until _____ ?
1981	Still bottom of distillation column exploded, 1 injury
6 Oct. 1981	CA DOHS issued Interim Status Document to permit operation as a hazardous waste treatment and storage facility
20 May 1982	DOHS Surveillance and Enforcement Report
26 Aug 1982	Letter to Omega re: ISD Compliance Inspection by John A. Hinton, DOHS
1 Mar 1983	RCRA inspection report by Randy L. Marcus, EPA

[illegible]	[illegible] shown. [illegible]
5 April 1985	NOTICE OF VIOLATION AND DIRECTIVE TO COMPLY - [illegible] HS 1. Remove and dispose of contaminated soil and asphalt 2. Provide an impermeable layer to prevent further contamination 3. Complete history of hazardous waste disposal requested
June 1985	Site investigation - 5 borings - ERT Investigation of Subsurface Soil Contamination at Tank Farm, Omega Chemical Corporation, Whittier, California. 2 contaminated borings and 3 clean borings as shown on Figure 1 and summarized in Table 1
12 Aug 1986	NOTICE OF VIOLATION AND SCHEDULE FOR COMPLIANCE - DOHS
July-Aug 1987	Removal of 500-gallon UST as per above DOHS Notice Soil investigation - 5 grab samples - [illegible] 11 hydrocarbon compounds found in two samples from underneath the UST, source apparently from tank. Figure 4 shows sample locations and Table 2 summarized chemicals detected
23 Sep 1987	Closure Report for submittal to the Los Angeles County Dept. of Public Works for the Removal of One Underground Storage Tank Located at 12504 E. Washington Boulevard by Leighton & Associates.
8 Oct 1987	Dennis O'Meara files Hazardous Waste Permit Application, Part A
29 Oct 1987	Results of UST removal satisfactory - Closure Permit issued - no further action required
30 Dec 1987	DOHS - REPORT OF VIOLATION AND SCHEDULE FOR COMPLIANCE
Feb 1988	Soil vapor study - 18 sites probed by ERT Significant levels of H-C vapors in most of the sites sampled as shown by Figure 5 and summarized in the adjoining table (2 = very substantial, 6 = substantial, 6 = moderate, 4 = minor)
12 Apr 1988	DOHS CORRECTIVE ACTION ORDER Required to install impervious base beneath waste storage area

[illegible] Soil investigation [illegible] water monitoring well - (ENSR/ERT).
To determine if a groundwater contamination exists. Chlorinated H-C present subsurface and in uppermost groundwater beneath site. Since there is no groundwater production within immediate area and flow rate assumed to be [illegible]/yr, no immanent danger, however the uppermost groundwater may be in hydraulic connection with drinking water supplies. Figure 6.

25 Jan 1989 — Omega filed Notice of Intent to Expand and subsequently bought adjacent parcel of land to east ("eastern" Omega), doubling property area to 40,000 sq. feet (Figure 2).

5 Apr 1989 — FIT site drive-by of the Omega Chemical Corporation, Karen Johnson. Solvent-like odor detected from the northeast side of the property

PRIOR SITE INVESTIGATIONS

Four previous environmental investigations were conducted on the Omega property over the last seven years. These investigations and their findings are summarized below.

1985: LeRoy Crandall & Associates.(LRC)

A total of five borings were made on the property as shown by Figure 3. Four initial borings to depths of six feet below ground surface were made in the southwest corner of the Omega property, around the tank farm. Soil samples were taken in each boring at approximately 1, 3.5 and 5.5 foot depths. Samples were analyzed by GC for 1,1,1-trichloroethane, methylene chloride, trichloroethylene and tetrachloroethylene using EPA Test Method 8120. All samples from boring number 1 and the 1-foot sample from boring number 2 were contaminated, the rest were "clean" (<0.10 ppm each sample for each contaminant: detection level was 0.10 ppm).

Due to contamination in borings number 1 and 2, boring number 1 was deepened to 9 feet and additional samples were collected at 7 and 8.5 foot depths. An additional fifth boring with samples taken at 1, 3, 5, and 7 feet below ground surface was made. For the deeper samples taken from boring number 1, analysis showed a low level (0.18 ppm) of tetrachloroethylene only at 7 feet; all other samples from the deepened boring number 1 were <0.10 ppm. Maximum contamination was found in boring number 5 at the 1-foot depth where all four chemicals listed above plus 1,2-dichloroethane were present. Tetrachloroethylene was the only chemical to be found in concentrations >0.10 at greater depths. Figure 3 shows the site plan and a table summarizing the chemicals and maximum levels of contamination for each of the five borings.

1987: Leighton & Associates.(L & A)

A 500 gallon underground storage tank was removed from the property and five samples were collected at that time. Only two of these samples were from below the tank. The tank was located

recycling and chemical [illegible]. Figure 4 [illegible] depth [illegible] bottom was 8 feet below ground surface. Two soil samples were taken from below the tank, one at a depth of 10 feet and one at 12 feet below ground surface. Two samples were taken from the excavated soil stockpile and a fifth sample was taken from soil that had spilled into the tank which ruptured during removal.

Soils from beneath the tank were analyzed using EPA Test Methods 8010, 8015, 8020 and 8240. The sample of soil spilled into the tank was analyzed by Test Method 8240 only. The two stockpile samples were not analyzed. Results showed that the soil spilled into the tank contained detectable amounts of 5 compounds: methylene chloride, acetone, 1,1,2-trichloroethane, tetrachloroethylene and o-xylene. The two samples from beneath the tank contained detectable amounts of 14 chemicals (see Table 1). Figure 4 shows a site plan with sample localities and a table showing the maximum levels of contaminants found in each boring.

1988: ERT Soil Vapor Study.

Eighteen locations were sampled using soil vapor extraction to detect concentrations of hydrocarbons on the Omega property (Figure 5). "Significant levels" of hydrocarbons were detected in most of the samples; all except the four points along the north and northeast property boundaries bordering Whittier Blvd., and the adjoining property to the northeast (Figure 5). Results are given as relative levels - very substantial, substantial, moderate, minor and trace. Very substantial levels were found at two points south and east of the tank farm in the southwest corner, substantial levels at six points between the drum storage areas, moderate levels at six points along the northwest boundary, near the gate on Whittier Blvd., and at a point near the south corner, and minor levels at four points along the southeast and northeast boundaries. No readings were designated as trace level.

1988: ENSR (ERT).

Five borings, with samples taken every 5 feet were drilled along the southwestern side of the property (Figure 6). One boring was the pilot hole for the water monitoring well. Depth to the groundwater was almost 74 feet in boring BMW-1. Water samples from this boring were collected. EPA Test Methods 8240 and 624 was used to test for volatile organic compounds in the soil and water samples, respectively. Results are given for analyses performed on soil samples: boring number 1 at 10, 25 and 35 feet; boring number 2 at 5 and 15 feet; boring number 3 at 20 feet; boring number 4 (formerly BMW-2) at 30 and 50 feet; and boring number 5 (BMW-1) at 55 and 75 feet. In addition, 3 water samples were analyzed from BMW-1. As BMW-2 never reached the water table, it is designated as B4 in the tables and figures.

There were 13 chemicals found in the soil samples and 10 chemicals also were found in the water samples, collected from BMW-1. Most of these chemicals were above State action levels for May of 1986 (See Table 2). Figure 6 shows the localities of the borings and a table of maximum contamination levels for each boring and for each of the three water samples.

SYNTHESIS OF PREVIOUS INVESTIGATIONS

We have compiled all previous results to produced a composite site plan showing the location of all borings and samples (Figure 7) and a table listing all chemicals found in all samples analyzed over the last seven years on the Omega property (Table 2). As shown by this table, there are a total of 22 compounds reported. The table also shows the Primary MCL's (maximum contaminant levels) for both the State of California and the U.S. Environmental Protection Agency as listed in the 1991 California Regional Water Quality Control Board report of Water Quality Goals. Table 3 shows these chemicals with their EPA numbers, abbreviations used in this report, densities and various action levels required by the State of California and the U.S. Environmental Protection Agency.

As shown by Table 2 and according to the 1991 guidelines, only 3 sample localities were devoid of detectable amounts of chemicals: B1, B2 and B3 of the 1985 borings. The remaining 9 boring localities all had detectable amounts of chemical contaminants. Of the 22 chemicals detected, 7 had values below the EPA or CA Primary MCL's: chloroform, 2-butanone, toluene, ethylbenzene, total xylenes, benzene and trans-1,2-dichloroethylene. However, due to the presence of multiple chemical compounds in each sample, all nine boring localities had some samples in which contaminant levels exceeded MCL's.

Figure 7 shows relative amounts of hydrocarbon contamination in the 18 soil vapor and relative contamination of chlorinated hydrocarbons (CHC) and chlorinated fluorocarbons (CFC) in the 12 boring locations. There is a maximum level of hydrocarbon contamination in the locations along the southwest portion of the "western" Omega property centered near number S-15. The CHC and CFC levels are higher in the 1988 deep borings B-1 and BMW-1 suggesting that this area contains the highest level of all contaminants. This is confirmed by both oral and documented site history for the area was a poorly maintained open drum storage site for Bachelor Chemical prior to the lease of the facility by Omega. The UST site lies in the eastern edge of this contaminated area and the cracked and poorly maintained asphalt pavement was roughly coincident with this area. An old storage tank area in the extreme western corner of the "western" Omega property (Figure 7) apparently confined or limited the western edge of Area I. Leakage from this former tank area may explain the high contamination levels of S-15, S-16 and the shallow LCR borings B1 and B5. The southern edge of this contaminated area lies along the property line between "western" Omega and the New England Lead property. The total width of the area is not well defined by the present data set. These data suggest a north-south trending kidney-shaped area approximately 35 feet wide and 60 feet long, which includes the water monitoring well BMW-1 at its northernmost end and vapor site S-16 at its southern most end as presently defined (Figure 7).

Two additional areas (II and III) of relatively high HC, CHC and CFC contamination are located along the entry path and passageway between the drum storage area on the west and the warehouse building and large permanent drum storage facility on the east. The northernmost area is roughly defined by the "substantial" soil vapor levels in S-6, S-7, S-10 and deep boring 4 that sampled a PCE level of 127 ppb at 15 feet. This area is

extends from near the northern side of the permanent large tank storage area to a point between S-5 and S-6.

Between areas I and II a third zone of higher soil vapor (SV) concentrations, that is only controlled by two SV locations, S-11 and S-12, lies between the drum storage area along the western site and the permanent large storage tank facility. This area (III) may connect with either or both areas I and II with additional assessment work.

Groundwater Samples

The three groundwater samples analyzed from boring BMW-1 in the northern part of area I all showed very high levels of contaminants. The well was drilled to a depth of 110 feet, with the top of the water table encountered at approximately 71 feet below ground surface. Samples were drawn from the water well after purging the well of four well-volumes of water. Table 3 shows that of the 22 chemical contaminants found in Omega property samples, two-thirds are more dense than water and would sink to the bottom of the aquifer being tested. Of the 9 chemicals detected in the water samples analyzed, 7 are heavier than water (Tables 2 and 3). A generally south-flowing plume of contaminated ground water would be predicted based upon groundwater contours (Los Angeles County Flood Control District Hydrologic Report, 1987) and a nearby site investigation.

property (Whittier Quadrangle).

Figure 2. Site plan for the Omega Refrigerant Reclamation property and adjacent properties.

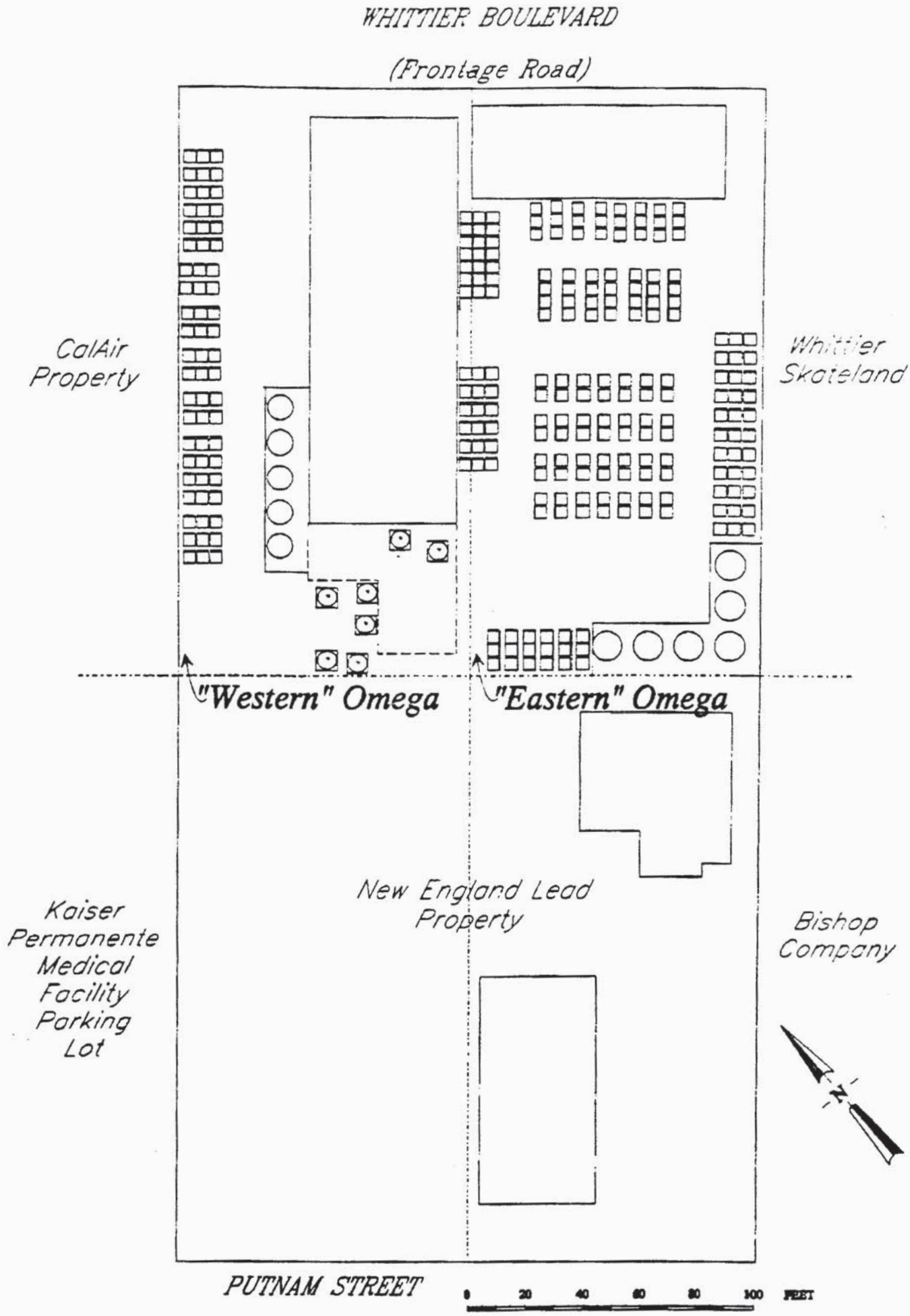
Figure 3. Western Omega site plan and maximum levels of contaminants in each of the five borings made by LeRoy Crandall & Associates (1985).

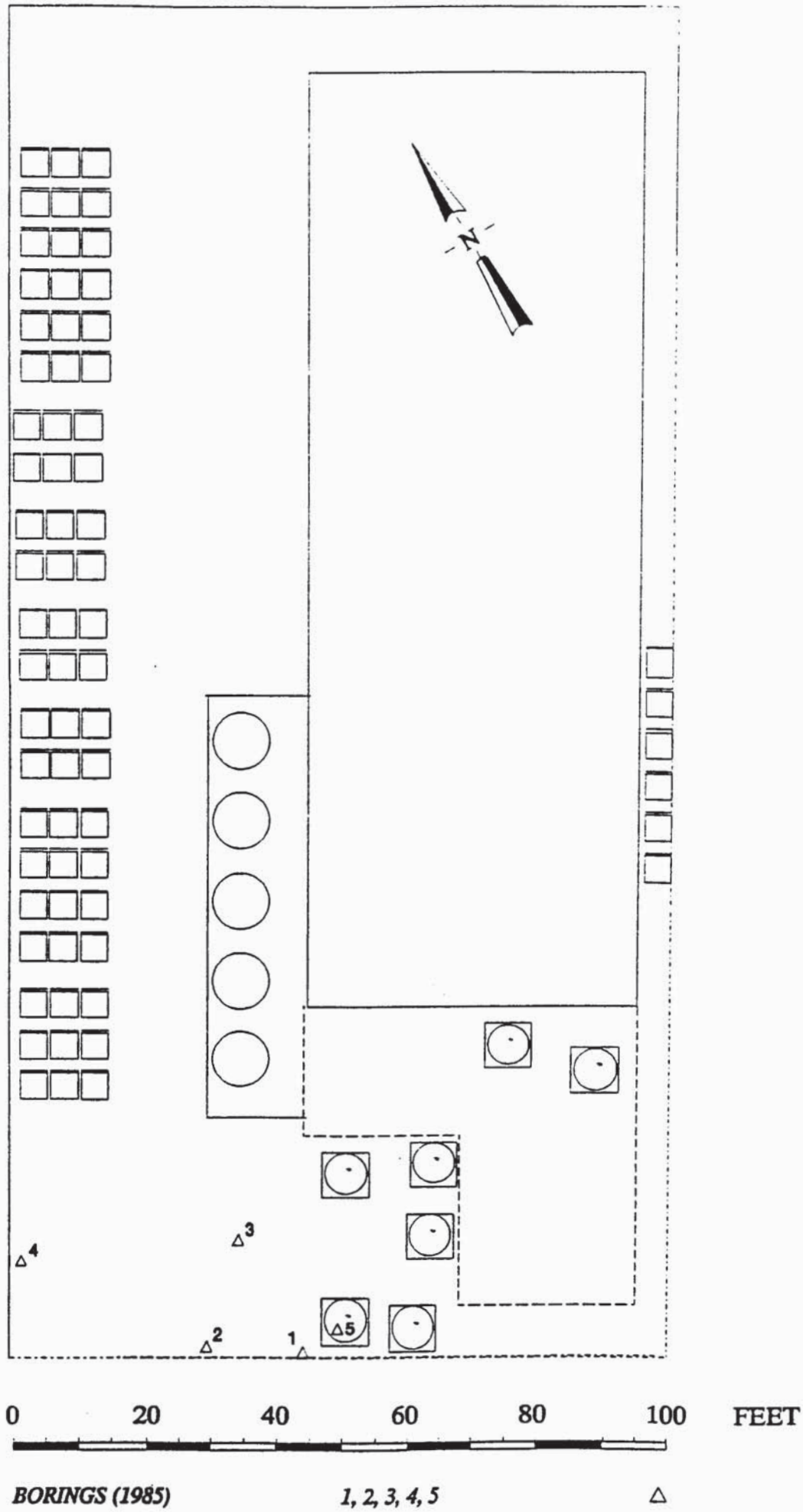
Figure 4. Western Omega site plan and maximum levels of contaminants in each of the two samples collected by Leighton & Associates (1987).

Figure 5. Western Omega property site plan and relative levels of hydrocarbon contamination as determined by soil vapor survey (ERT, 1988).

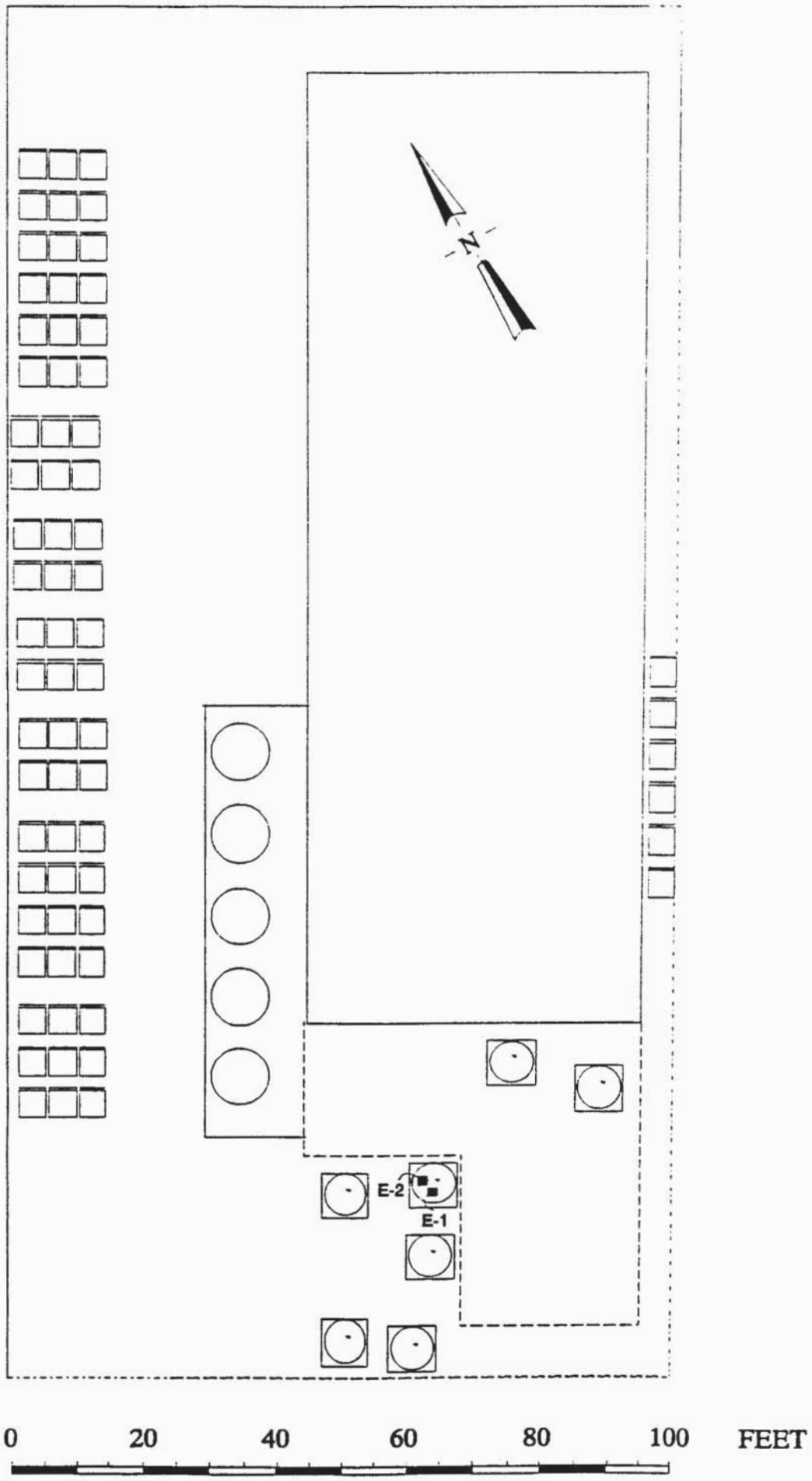
Figure 6. Western Omega property site plan and maximum levels of contaminants in each of the five borings and in the three water samples (ENSR (ERT), 1988).

Figure 7. Western Omega property showing all shallow and deep borings, soil vapor locations and the water well BMW-1. Areas I, II and III (patterned) are defined by high contamination levels of hydrocarbons, chlorinated hydrocarbons and chlorinated fluorocarbons.


WHITTIER BOULEVARD
(Frontage Road)
CalAir Property
Whittier Skateland
"Western" Omega
"Eastern" Omega
New England Lead Property
Kaiser Permanente Medical Facility Parking Lot
Bishop Company
N
PUTNAM STREET
0 20 40 60 80 100 FEET

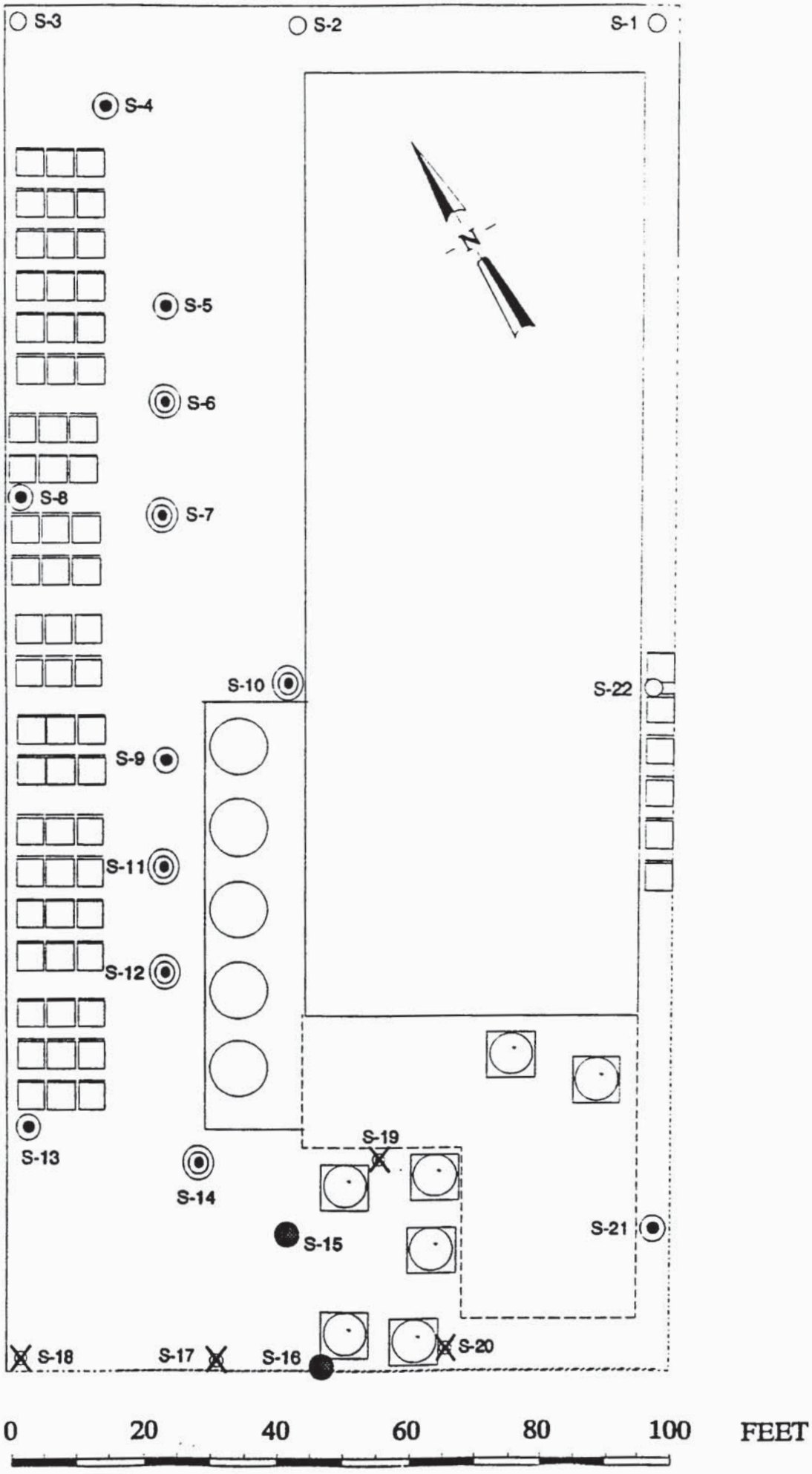

N
3
4
2
1
5
0
20
40
60
80
100
FEET
BORINGS (1985)
1, 2, 3, 4, 5

1985 BORINGS	*B1*	*B2*	*B3*	*B4*	*B5*
Maximum Depth of Contamination (feet)	7'	1'	0'	0'	7'
Maximum Depth of Penetration (feet)	9'	6'	6'	6'	7.5'
1,1,1-[TCA] (200 ppb)	0	75100	0	0	848000
[MC] (40 ppb)	106	8280	0	0	4490
TCE (5 ppb)	0	29400	0	0	358000
PCE (4 ppb)	1201000	9550	0	0	2064000
1,2-[DCA] (5 ppb)	0	0	0	0	25000



SOIL SAMPLES UNDER UST (1987) *E-1, E-2* ■

1987 BORINGS		*E-1*	*E-2*
Maximum Depth of Contamination (feet)		10'	12'
Maximum Depth of Penetration (feet)		10'	12'
1,1,1-[TCA]	(200 ppb)	0	3500
[MC]	(40 ppb)	0	1700
PCE	(4 ppb)	200	0
ACETONE		46	13800
[MP]		6	0
TOLUENE	(1000 ppb)	0	400
1,1-[DCA]		0	156
1,2-[DCA]	(5 ppb)	0	166
[4CE]		240	3000
ETHYLBENZENE	(700 ppb)	0	176
O-XYLENE		9	490
TOTAL XYLENES	(1750 ppb)	0	400
TOTAL H-C		110	300

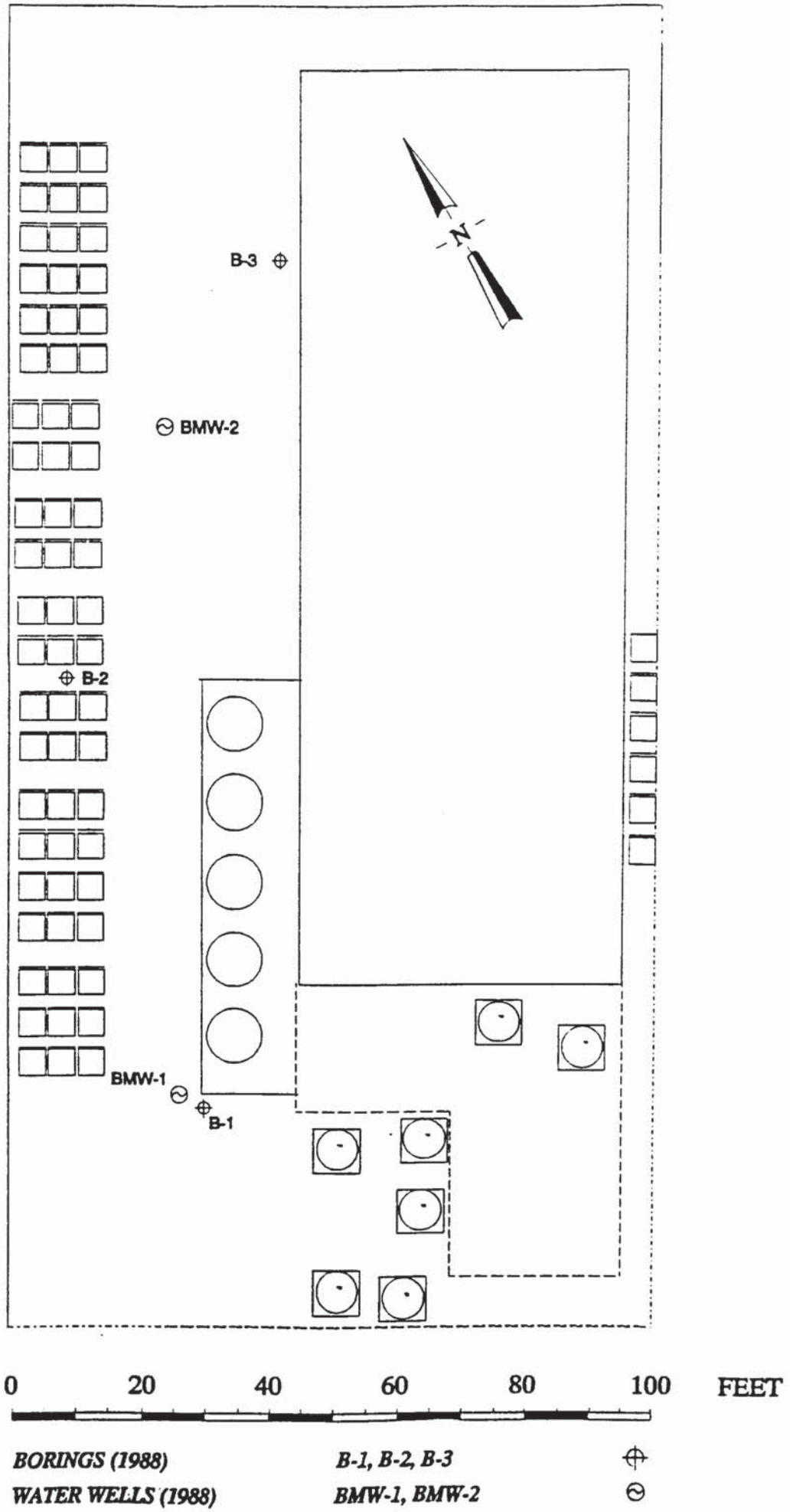

S-1
S-2
S-3
S-4
S-5
S-6
S-7
S-8
S-9
S-10
S-11
S-12
S-13
S-14
S-15
S-16
S-17
S-18
S-19
S-20
S-21
S-22
N
0
20
40
60
80
100
FEET

SUMMARY OF SOIL VAPOR SURVEY RESULTS
JANUARY 21, 1988
Chromatographic Readings

LOCATION	TOTAL READINGS	EQUIPMENT AIR BLANK	NET READING	RELATIVE LEVEL*
S-1	4.19	0.00	4.19	Minor
S-2	5.48	0.17	5.31	Minor
S-3	5.01	0.11	4.90	Minor
S-4	66.58	1.19	65.39	Moderate
S-5	83.19	1.80	81.39	Moderate
S-6	98.87	0.62	196.49	Substantial
S-7	359.05	3.34	711.42	Substantial
S-8	27.60	4.13	46.93	Moderate
S-9	12.75	3.59	18.32	Moderate
S-10	469.60	5.32	928.56	Substantial
S-11	80.70	12.52	136.36	Substantial
S-12	106.90	10.45	192.90	Substantial
S-13	16.50	5.41	22.18	Moderate
S-14	148.75	10.51	276.48	Substantial
S-15	1600.00	21.96	3156.08	Very Substantial
S-16	707.32	10.66	3483.29	Very Substantial
S-17	N/A	-	-	-
S-18	N/A	-	-	-
S-19	N/A	-	-	-
S-20	N/A	-	-	-
S-21	35.79	24.46	56.65	Moderate
S-22	13.29	12.91	1.90	Minor

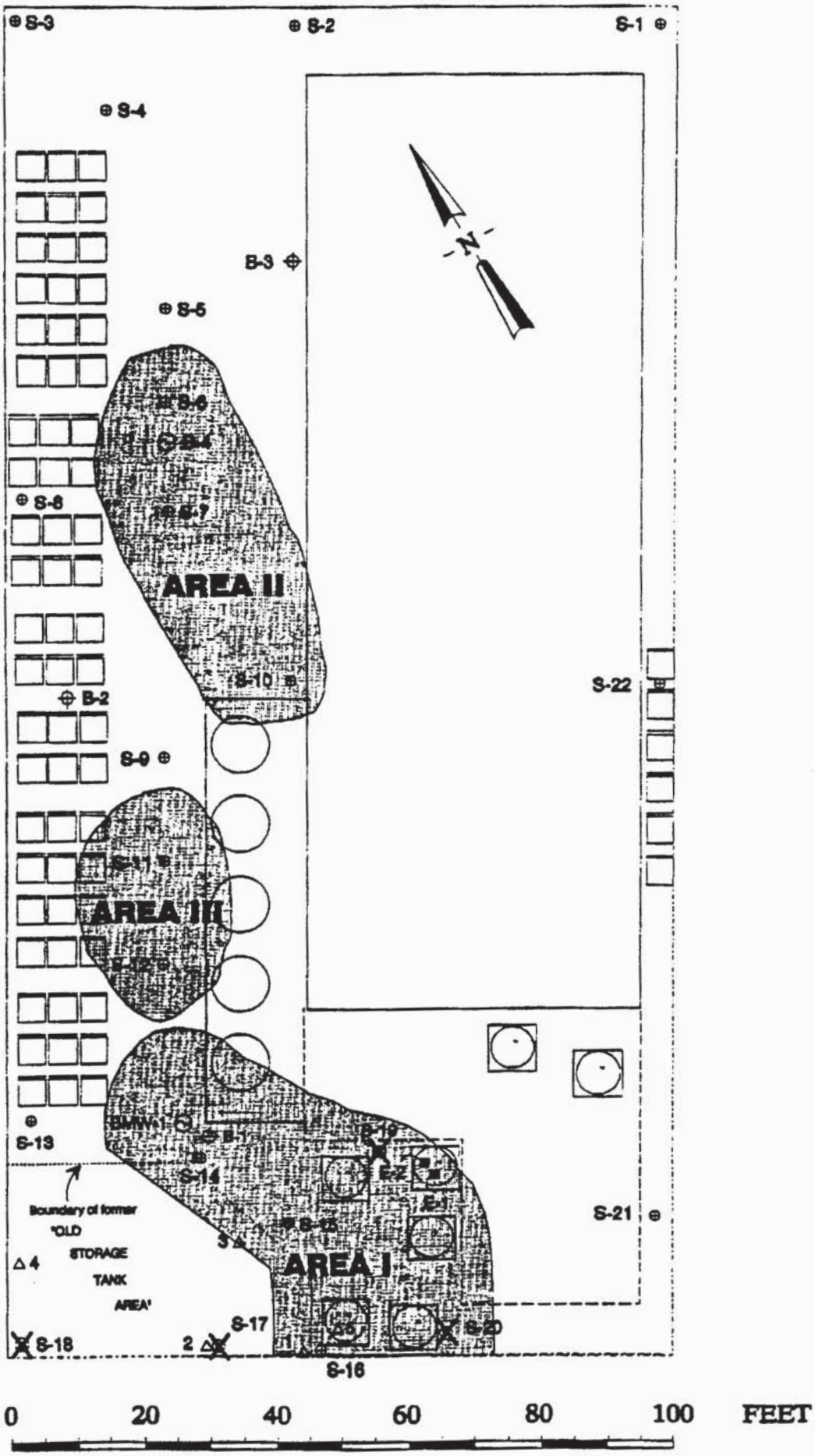
CHROMATOGRAM INTERPRETATION*
Key to Site Contaminant Levels Shown on Facing Page

Point Not Analyzed	Point Not Analyzed	⊗
1.0 - 10.0 ppb	Minor Levels	○
10.0 - 100.0 ppb	Moderate Levels	◉
100.0 - 1000.0 ppb	Substantial Levels	◎
> 1000.0 ppb	Very Substantial Levels	●


B-3
BMW-2
B-2
BMW-1
B-1
N
0
20
40
60
80
100
FEET
BORINGS (1988)
B-1, B-2, B-3
WATER WELLS (1988)
BMW-1, BMW-2

1988 BORINGS	B-1	B-2	B-3	BMW-1	BMW-2
Maximum Depth of Contamination (feet)	36'	15'	20'	75'	50'
Maximum Depth of Penetration (feet)	36'	26'	20'	110'	60'
1,1,1-[TCA] (200 ppb)	75	9	0	874	27
[MC] (40 ppb)	0	0	69	2650	141
TCE (5 ppb)	42	45	0	156	350
PCE (4 ppb)	257	127	5	854	266
ACETONE	112	0	35	0	0
CHLOROFORM (100 ppb)	10	0	0	0	0
2-BUTANONE (200 ppb)	12	24	11	0	0
[MP]	11	0	0	0	0
[TCFM] (3400 ppb)	0	0	0	156	0
DCE (6 ppb)	0	0	0	222	32
[DCY]	0	0	0	19	0
TTE (3400 ppb)	0	0	0	880	436
TOLUENE (1000 ppb)	10	24	7	0	0

1988 BMW-1 WATER SAMPLES	6/14/88	6/16/88	6/21/88
Maximum Depth of Penetration (feet)	110	110	110
[1,1,1-TCA] (200 ppb)	2080	2150	2200
[MC] (40 ppb)	650	260	280
TCE (5 ppb)	258	160	120
PCE (4 ppb)	1030	667	510
[ACE]	0	0	160
[CHF] (100 ppb)	0	24	0
[TCFM] (3400 ppb)	1540	1718	0
[DCE] (6 ppb)	1080	836	510
TTE (3400 ppb)	5240	0	0
[T-DCE] (16 ppb)	0	9	0


S-3
S-2
S-1
S-4
B-3
S-5
S-6
S-7
S-8
AREA II
S-10
B-2
S-9
S-22
S-11
AREA III
S-12
S-13
S-14
Boundary of former
'OLD
STORAGE
TANK
AREA'
S-15
AREA I
S-21
S-17
S-18
S-20
S-16
N
0
20
40
60
80
100
FEET

KEY

LRC Borings (1985)	*1, 2, 3, 4, 5*	△
L & A Soil Samples Under UST (1987)	*E-1, E-2*	■
ENSR Borings (1988)	*B-1, B-2, B-3, B-4*	⊕
ENSR Water Wells (1988)	*BMW-1*	⊖
ERT Soil Vapor Points (1988)	*S-1 to S-16, S-21, S-22*	⊕
ERT Point not analyzed	*S-17 to S-20*	⊗

NOTE: S-17 and B-2 overlap

TABLE 2 - SUMMARY OF CHEMICALS PRESENT IN BORINGS, SOIL SAMPLES AND MONITORING WELL ON OMEGA PROPERTY IN PPB (ug/kg) [[OR PPM (mg/kg)]

	1,1,1-Tri-chloro-ethane	Methylene chloride	Tri-chloro-ethylene	Tetra-chloro-ethylene	1,2-Di-chloro-ethane	Ace-tone	Chlor-oform	2-But-a-none	4-methyl-1,2,2-penta-none	Tri-chloro-fluoro-methane	1,1-Di-chloro-ethylene	1,1-Di-chloro-ethyne	1,1,2-Tri-chloro-1,2,2-fluoro-ethane	Tol-uene	1,1-Di-chloro-ethane	1,1,2-Tri-chloro-ethane	Ethyl-benzene	ortho-Xylene	Total Xylene	Ben-zene	Total hydro-car-bons	Trans-1,2-Di-chloro-ethyl-ene
Abbrev.	"1,1,1-TCA"	"MC"	TCE	PCE	"1,2-DCA"	"ACE"	"CHF"	MEK	"MP"	"TCFM"	DCE	"DCY"	TTE	"TOL"	"1,1-DCA"	"1,1,2-DCA"	EB	"O-X"	"T-X"	"BNZ"	"T-HC"	"T-DCE"
Density	1.3376	1.3255	1.4649	1.6230	1.2569	0.788	1.484	0.805	0.8	1.494	1.2129	XXX	1.59	0.866	1.757	1.4416	0.866	0.8801	"0.86	0.8787	n/a	"1.28
EPA No.	U226	U080	D040	U210/D039	D028	U002	D022	U159	U161	U121	U078/D029		F002	U220	UNC	UNC	UNC	UNC	UNC	D018		U079
EPA 1 MCL	200	5	5	5	5	?	100	200	?	----	7	?	----	1000	----	5	700	?	10000	5	-----	100
CA 1 MCL	200	----	5	5	0.5	?	100	?	?	150	6	?	1200	-----	5	32	680	?	1750	1	-----	10
SAMPLE																						
B1 (1988) (36"TD) EPA 8240																						
10	12	ND	ND	20	-	56	7	12	11	ND	ND	ND	ND	10	-	-	-	-	-	-	-	-
25	54	ND	32	129	-	ND	10	5	ND	ND	ND	ND	ND	5	-	-	-	-	-	-	-	-
35	75	ND	42	257	-	112	9	6	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-
B2 (1988) (26"TD)																						
5	7	ND	19	84	-	ND	ND	24	ND	ND	ND	ND	ND	24	-	-	-	-	-	-	-	-
15	9	ND	45	127	-	ND	ND	12	ND	ND	ND	ND	ND	8	-	-	-	-	-	-	-	-
B3 (1988) (20"TD)																						
20	ND	69	ND	5	-	35	ND	11	ND	ND	ND	ND	ND	7	-	-	-	-	-	-	-	-
B4 (1988) (60"TD)																						
30	23	96	143	143	-	ND	ND	ND	ND	ND	12	ND	60	ND	-	-	-	-	-	-	-	-
50	27	141	350	266	-	ND	ND	ND	ND	ND	32	ND	436	ND	-	-	-	-	-	-	-	-
BMW1 (1988) (110"TD)																						
55	874	2650	156	854	-	ND	ND	ND	ND	156	222	19	155	ND	-	-	-	-	-	-	-	-
——WT																						
75	74	80	23	98	-	ND	ND	ND	ND	146	36	ND	880	ND	-	-	-	-	-	-	-	-
BMW1 Water Samples (1988) ---- EPA 624																						
0.00487013	2080	650	258	1030	-	ND	ND	-	-	1540	1080	-	5240	-	-	-	-	-	-	-	-	ND
0.004261364	2150	260	160	667	-	ND	24	-	-	1718	836	-	ND	-	-	-	-	-	-	-	-	9
0.003246753	2200	280	120	510	-	160	ND	-	-	ND	510	-	ND	-	-	-	-	-	-	-	-	ND

ND = NOT DETECTABLE

UNC= UNCLASSIFIED

- = NOT TESTED FOR OR NOT DETECTABLE

XXX= This material is incorrect. It is impossible to have 1,1 Dichloroethyne, Ethyne is a triple bonded C-C molecule which has only one bond on either C for attached Chlorine. It could not have two chlorines attached at the first C.

TABLE 2 - SUMMARY OF CHEMICALS PRESENT IN BORINGS, SOIL SAMPLES AND MONITORING WELL ON OMEGA PROPERTY IN PPB (ug/kg) [[OR PPM (mg/kg)]

	1,1,1-Tri-chloro-ethane	Methylene chloride	Tri-chloro-ethylene	Tetra-chloro-ethylene	1,2-Di-chloro-ethane	Ace-tone	Chlor-oform	2-But-a-none	4-methyl-1,2,2-penta-none	Tri-chloro-fluoro-methane	1,1-Di-chloro-ethylene	1,1-Di-chloro-ethyne	1,1,2-Tri-chloro-1,2,2-fluoro-ethane	Tol-uene	1,1-Di-chloro-ethane	1,1,2-Tri-chloro-ethane	Ethyl-benzene	ortho-Xylene	Total Xylene	Ben-zene	Total hydro-car-bons	Trans-1,2-Di-chloro-ethyl-ene
Abbrev.	"1,1,1-TCA"	"MC"	TCE	PCE	"1,2-DCA"	"ACE"	"CHF"	MEK	"MP"	"TCFM"	DCE	"DCY"	TTE	"TOL"	"1,1-DCA"	"1,1,2-DCA"	EB	"O-X"	"T-X"	"BNZ"	"T-HC"	"T-DCE"
Density	1.3376	1.3255	1.4649	1.6230	1.2569	0.788	1.484	0.805	0.8	1.494	1.2129	XXX	1.59	0.866	1.757	1.4416	0.866	0.8801	"0.86	0.8787	n/a	"1.28
EPA No.	U226	U080	D040	U210/D039	D028	U002	D022	U159	U161	U121	U078/D029		F002	U220	UNC	UNC	UNC	UNC	UNC	D018		U079
EPA 1 MCL	200	5	5	5	5	?	100	200	?	---	7	?	---	1000	---	5	700	?	10000	5	-----	100
CA 1 MCL	200	----	5	5	0.5	?	100	?	?	150	6	?	1200	-----	5	32	680	?	1750	1	----	10
SAMPLE																						
B1 (1985)	EPA Test 8120																					
1'	ND	2.89ppm	ND	30.1ppm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.25'	ND	1000ppm	ND	1201ppm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5'	ND	9.73ppm	ND	89.0ppm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7'	ND	ND	ND	0.18ppm	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.5'	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2 (1985)																						
1'	75.1ppm	8.28ppm	29.4ppm	9.55ppm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5-4'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5-6'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3 (1985)																						
1'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5-6'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4 (1985)																						
1'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5-6'	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5 (1985)																						
1'	848ppm	4.49ppm	358ppm	2064ppm	25ppm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3'	ND	ND	ND	0.69ppm	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5'	ND	ND	ND	0.29ppm	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7'	ND	ND	ND	0.19ppm	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-1 (1987)	EPA 8010 and 8240																					
10'(8010)	-	-	-	0.24ppm	-	-	-	-	-	-	-	-	-	-	-	-	ND	9	ND	ND	11ppm	-
EPA 8240	ND	ND	-	200	-	46	-	-	6	-	-	-	-	ND	ND	ND	-	-	(EPA 8010)	—	(EPA 8015)	-
E-2 (1987)																						
12'(8010)	4.0ppm	1.3ppm	-	2.7ppm	-	-	-	-	-	-	-	-	-	.4ppm	.12ppm	-	-	-	0.4ppm	ND	300ppm	-
EPA 8240	3500	1700	-	3000	-	13800	-	-	ND	-	-	-	-	295	156	166	176	490	-	-	-	-

TABLE 3 - SUMMARY OF CHEMICALS, DENSITIES AND AGENCY ACTION LEVELS

CHEMICAL COMPOUND (NAME)	ABBREV.	DENSITY	EPA No.	CA DEPT.HEALTH SERVI Primary MCL	Second. MCL	US E P A Primary MCL	Secon. MCL	MCL Goal	CA ACTION LEVELS DEPT.HEALTH SERVICES TOXICITY	TASTE & ODOI	SNARLs EPA	NAS	Prop.65 LEVELS	CHEMICAL COMPOUND (NAMF
(Chemicals less dense than water)														
Acetone	"ACE"	0.788	U002											Acetone
2-Butanone (methyl ethyl ketone)	MEK	0.805	U159	-	-	-	-	-	-	-	200	-	-	2-Butanone (methyl ethyl ketone)
Total xylenes	"T-X"	~0.86		1750	-	10000	20	10000	-	-	10000	-	-	Total xylenes
Ethylbenzene	EB	0.866		680	-	700	30	700	-	-	700	-	-	Ethylbenzene
Toluene	"TOL"	0.866	U220	-	-	1000	40	1000	100	-	1000	340	-	Toluene
Benzene	"BNZ"	0.8787	D018	1	-	5	-	0	-	-	200	-	3.5	Benzene
ortho-Xylene	"O-X"	0.8801												ortho-Xylene
(Chemicals more dense than water)														
1,1-Dichloroethylene	DCE	1.2129	U078/D029	6	-	7	-	7	-	-	7	100	-	1,1-Dichloroethylene
1,2-Dichloroethane	"1,2-DCA"	1.2569	D028	0.5	-	5	-	0	-	-	700	-	5	1,2-Dichloroethane
Trans-1,2-dichloroethylene	"T-DCE"	~1.28	U079	10	-	100	-	100	-	-	100	-	-	Trans-1,2-dichloroethylene
Methylene chloride (dichloromethane)	"MC"	1.3255	U080	-	-	5	-	0	40	-	1500	5000	25	Methylene chloride (dichloromethan
1,1,1-Trichloroethane	"1,1,1-TCA"	1.3376	U226	200	-	200	-	200	-	-	200	3800	-	1,1,1-Trichloroethane
1,1,2-trichloroethane	"1,1,2-DCA"	1.4416		32	-	5	-	3	-	-	3	-	-	1,1,2-trichloroethane
Trichloroethylene	TCE	1.4649	D040	5	-	5	-	0	-	-	-	-	30	Trichloroethylene
Chloroform	"CHF"	1.484	D022	100	-	100	-	-	-	-	100/500	-	4.5	Chloroform
Trichlorofluoromethane	"TCFM"	1.494	U121	150	-	-	-	-	-	-	2000	8000	-	Trichlorofluoromethane
Tetrachloroethylene	PCE	1.6230	U210/D039	5	-	5	-	0	-	-	1000/5000		7	Tetrachloroethylene
1,1-dichloroethane	"1,1-DCA"	1.757		5	-	-	-	-	-	-	-	-	-	1,1-dichloroethane
1,1-Dichloroethyne	"DCY"													1,1-Dichloroethyne
4-methyl-1,2,2-pentanone	"MP"													4-methyl-1,2,2-pentanone
1,1,2-trichloro-1,2,2-fluoroethane	TTE			1200	-	-	-	-	-	-	-	-	-	1,1,2-trichloro-1,2,2-fluoroethane
Total hydrocarbons	"T-HC"	n/a												Total hydrocarbons