GERAGHTY
& MILLER, INC.
Environmental Services

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August 30, 1996
Project No. RC0174.003

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

(510) 567-6700

96 SEP -3 AM 9:22
ENVIRONMENTAL PROTECTION

SUBJECT: Site Closure Plan, Chevron/Lonestar Facility, 333 – 23rd Avenue, Oakland, California.

Dear Mr. Chan:

This letter presents a site closure plan for the above-referenced site and includes background information, a specific monitoring schedule, and proposed long-term groundwater quality goals intended to protect potential aquatic receptors that may be found in the tidal canal along the western boundary of the site (Figure 1). The site is an operating cement batch plant located adjacent to the tidal canal that separates Oakland and Alameda.

BACKGROUND

Approximately 6,000 gallons of Diesel Standard #2 were accidentally discharged into a monitoring well in August 1985. Approximately 3,300 gallons were recovered using a vacuum truck and selective oil skimmers. Thirteen monitoring wells and two extraction wells were installed to delineate the extent of the release and remove groundwater containing the highest concentrations of total petroleum hydrocarbons (TPH) as diesel. The well locations are shown in Figure 2. Groundwater quality monitoring has documented that the only compound present is TPH as diesel, with the exception of low levels of TPH as gasoline (59 micrograms per liter [µg/L] in MW-8, June 1996). The highest concentrations of TPH as diesel have been detected in the area of MW-1. Liquid-phase hydrocarbon thicknesses measured in MW-1 have decreased, from over 2 feet in 1990 to a sheen of less than 0.01 foot in 1996. Testing of biological parameters indicated that in-situ biodegradation of the TPH as diesel had depleted levels of dissolved oxygen and other nutrients required for microbes to degrade the hydrocarbons in the groundwater. Oxygen Release Compound (ORC) and diammonium

phosphate were added to four monitoring wells (MW-1, MW-7, MW-9, and MW-10) in 1996 to enhance in-situ bioremediation.

The direction of groundwater flow is generally to the west, towards the tidal canal which is located along the western (hydraulically downgradient) boundary of the site. Monitoring Wells MW-4 and MW-11 are situated between the area of the highest TPH-as-diesel concentrations and the tidal canal.

PROPOSED MONITORING SCHEDULE

There have been a total of 16 sampling events covering the period from 1987 through June 1996 for the proposed compliance wells, MW-4 and MW-11. The highest historic concentrations of TPH as diesel detected in Monitoring Wells MW-4 and MW-11, the proposed compliance wells, has been 110 µg/L (September 1995). More recently, TPH as diesel has been detected at 95 µg/L in MW-4 (March 1996) and at 86 µg/L in MW-11 (June 1996).

The proposed compliance wells (MW-4 and MW-11) will be sampled on a semi-annual basis for a period of 2 years beginning in December 1996, on the approval of the Alameda County Health Care Services Agency (ACHCSA). In addition to the compliance wells, Monitoring Well MW-1 will also be sampled on a semiannual basis. The water samples will be analyzed for TPH as diesel (USEPA Method 8015, modified) and benzene, toluene, ethylbenzene, and xylenes (USEPA Method 8020). A report will be prepared including a summary of the sampling results and a groundwater contour map.

PROPOSED SITE CLOSURE GOALS

There are no universally recognized regulatory standards for TPH as diesel in groundwater that are protective of aquatic receptors. A representative of the Regional Water Quality Control Board (RWQCB) has found that a toxicity study conducted to assist in the calculation of cleanup standards for a site bordering San Francisco Bay (Burns and McDonnell Waste Consultants, Inc., 1995) supports an acceptable level of mid-range hydrocarbon compounds, similar to TPH as diesel, of approximately 100 µg/L. According to the RWQCB representative, a follow-up study has been undertaken to more accurately determine acceptable concentrations for aquatic life. Although the results are not complete at this time, the RWQCB

estimates that the follow-up study will establish a limit for the mid-range hydrocarbon compounds at approximately 800 µg/L.

Based on the historical groundwater quality data, the primary petroleum hydrocarbon compound that has been detected in groundwater beneath the site is TPH as diesel. Since the shallow groundwater beneath the site is not used as a water supply source, the nearest receptor would be the aquatic life in the tidal canal located along the western site boundary. Based on these factors, the proposed site closure plan consists of utilizing existing Monitoring Wells MW-4 and MW-11 as compliance wells for continued monitoring of water quality between the highly affected areas of the site and the tidal canal. If, after 2 years of semiannual monitoring, the concentrations of TPH as diesel remain below the proposed compliance goals set by the RWQCB for TPH as diesel, a site closure letter would be issued by the ACHCSA upon the request of Chevron. If higher levels are observed on more than two consecutive sampling events, Chevron will investigate other alternatives to protect potential aquatic receptors.

If you have any questions regarding this report, please do not hesitate to call the undersigned at (510) 233-3200.

Sincerely,
GERAGHTY & MILLER, INC.

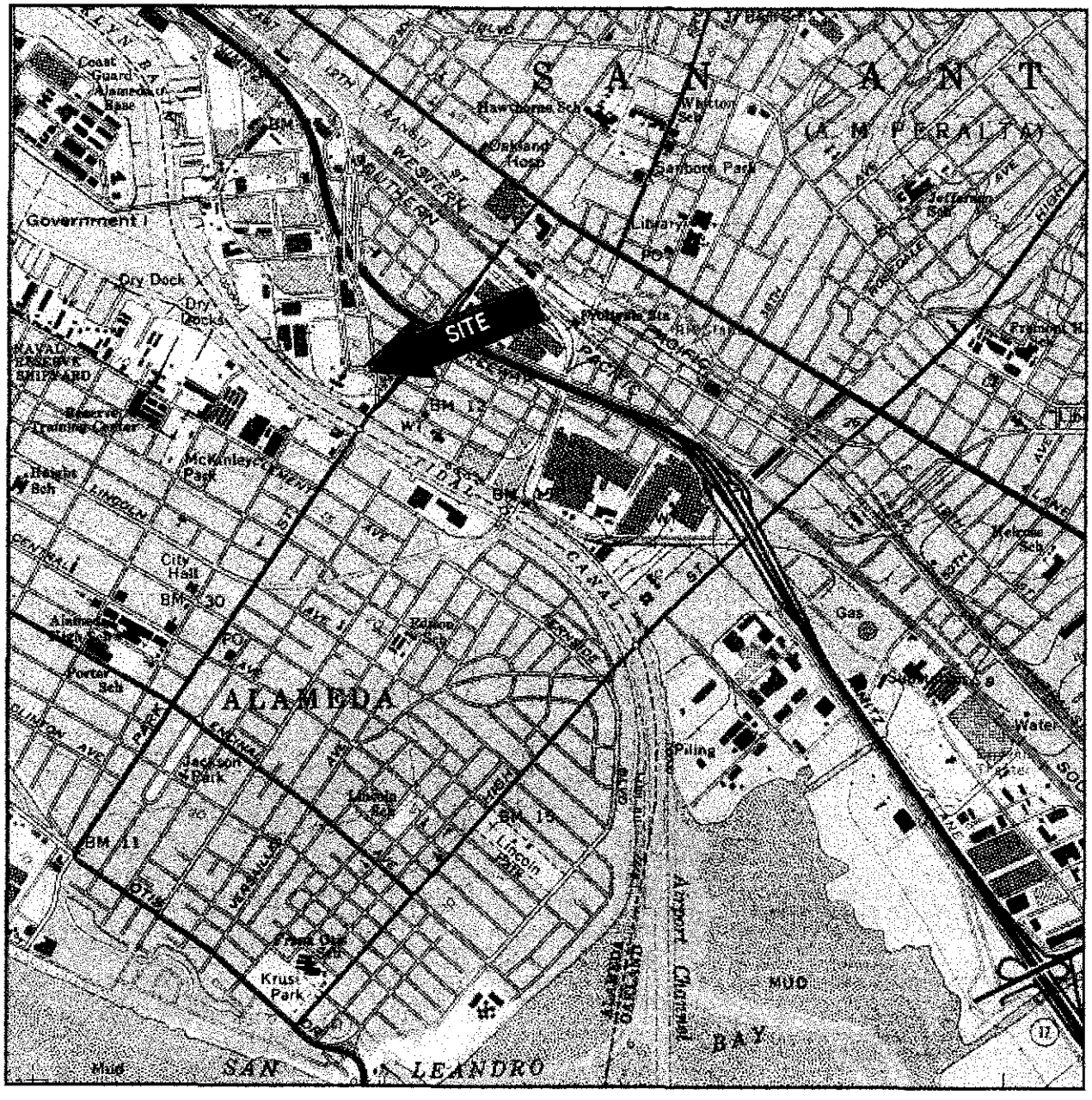
Aaron O'Brien
Staff Engineer/Project Manager

Jeffrey W. Hawkins, R.G.
Senior Scientist

Gary W. Keyes
Principal Engineer/Associate
Richmond, California Office Manager

Attachments: Figure 1 Site Location Map
Figure 2 Site Plan

cc: Bob Cochran, Chevron Products Company



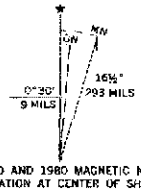
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET



UTM GRID AND 1980 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Reference: U.S.G.S. 7.5-minute Quadrangle Oakland East California, 1959 photorevised 1980.

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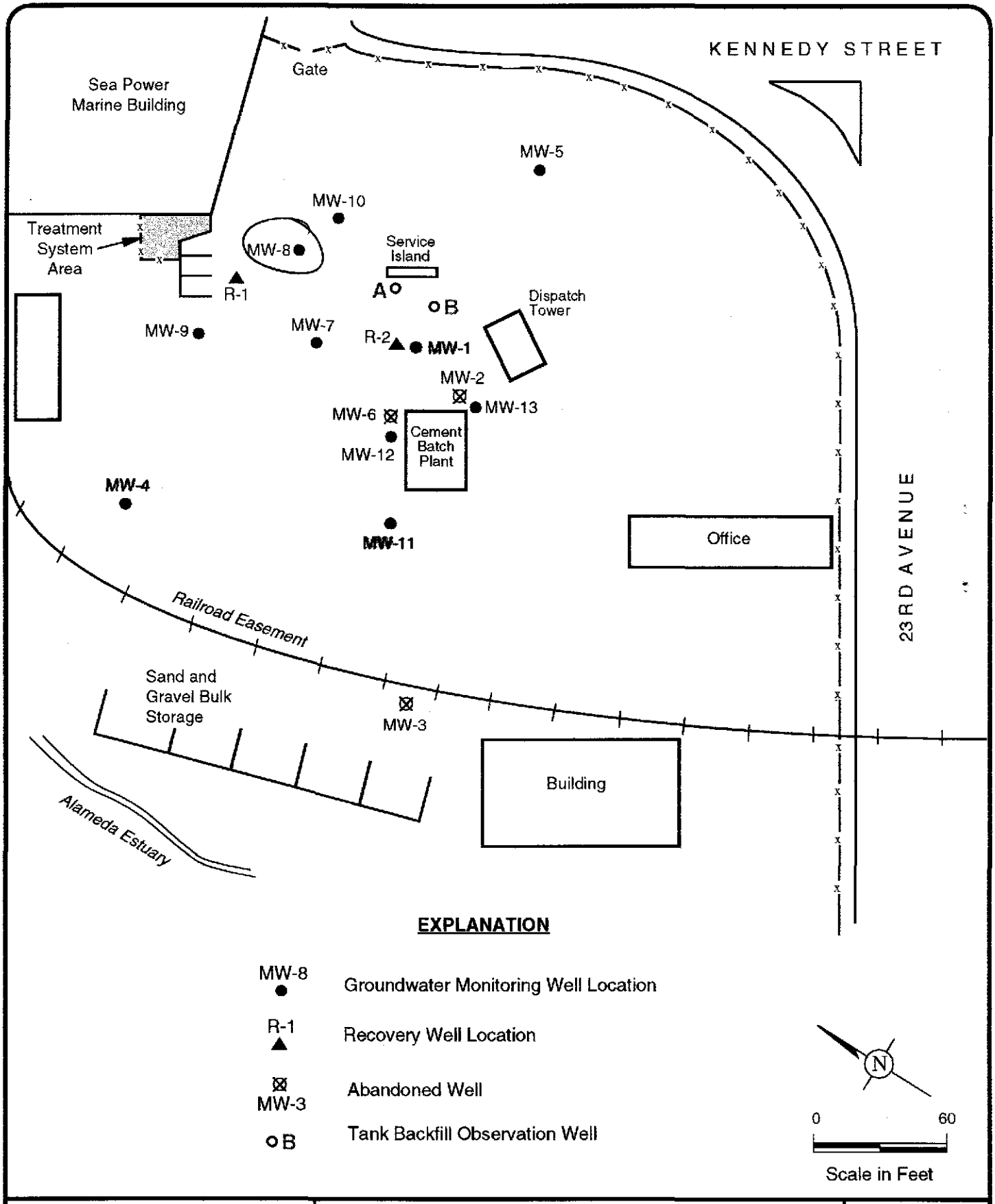
SITE LOCATION MAP
Lonestar Facility
333–23rd Avenue
Oakland, California

FIGURE
1



EXPLANATION

MW-8 ●	Groundwater Monitoring Well Location
R-1 ▲	Recovery Well Location
⊠ MW-3	Abandoned Well
o B	Tank Backfill Observation Well

N

0 60

Scale in Feet

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SITE PLAN
Lonestar Facility
333 – 23rd Avenue
Oakland, California

FIGURE
2

REVISION
7/30/96