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JUL 24 2001

July 20, 2001

Mr. Barney Chan
Alameda County Health Care Services Agency
Environmental Health Department
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: *Work Plan to Excavate Impacted Soil*
Former Chevron Station #20-6145
800 Center Street
Oakland, CA
Delta Project No. DG26145C.4C03

Mr. Chan:

At the request of Chevron Products Company and Mr. Hollis Rodgers, Delta Environmental Consultants, Inc. Network Associate Gettler-Ryan Inc. (GR) proposes to excavate impacted soil at the subject site. The purpose of the proposed work is to remove soils that have been impacted by petroleum hydrocarbons from the vadose and smear zones in the vicinity of the former USTs, dispenser island, hydraulic lift, and sump. This work is being proposed in lieu of a previously proposed air sparge system. The excavation work plan was requested by Alameda County Environmental Health Department (ACEHD) in a letter dated May 17, 2001.

The scope of work described in this Work Plan is intended to comply with the State of California Water Resources Control Board's *Leaking Underground Fuel Tanks (LUFT) Manual,* the California Regional Water Quality Control Board's *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites*, and ACEHD guidelines.

Site Description

The subject site is a vacant lot located on the northeast corner of Center and Eight Streets in the City of Oakland (Figure 1). The subject site is situated in an area of mixed residential, commercial, industrial and transportation uses. Topography in the site vicinity is flat. The nearest surface water body appears to be the Oakland Inner Harbor, situated approximately 2,200 feet to the south.

This site was first developed as a service station in 1932. Four 1,000 gallon underground fuel storage tanks (USTs) and one waste oil UST, apparently installed in 1932 when the station was built, were reportedly removed in 1973 when the station was closed. During removal of the dispenser island, sumps, hydraulic hoist, building foundations, trash enclosure, yard lights and remaining asphalt in September 2000, another gasoline UST and a waste oil UST were discovered. These were removed in May 2001. Locations of pertinent site features are shown on the attached Figure 2.

Summary of Previous Environmental Investigations

Three subsurface investigations have been performed at the subject site. Subsurface Consultants Inc. drilled five soil borings (1 through 5) in 1989. Groundwater Technology Inc. drilled three soil borings (SB-1 through SB-3) and installed four groundwater monitoring wells (MW-1 through MW-4) in 1995. Pacific Environmental Group (PEG) advanced nine GeoProbe borings (P-1 through P-9) and installed three additional groundwater monitoring wells (MW-5 though MW-7) in 1996, then installed five soil vapor points (SV-1 through SV-5) in 1997. Locations of the wells and borings are shown on Figure 2. PEG proposed an air sparge remedial system in May 1998, but the system was never installed.

Quarterly monitoring and sampling at the site began in 1995, with a total of 22 sampling events to date. TPHg and benzene have been consistently detected in wells MW-1 and MW-3. Methyl tert butyl ether (MtBE) has been detected in wells MW-1, MW-3 and MW-4 by EPA Method 8020, but does not appear to have been confirmed by EPA Method 8260. Historical monitoring data indicate that groundwater flow is toward the southwest. Depth to groundwater beneath the site fluctuates from 7 to 12 feet below ground surface (bgs). The lowest levels are usually observed during the third quarter.

Proposed Scope of Work

Impacted soil beneath the site has been delineated. The main area of impact is in the vicinity of the former gasoline USTs and dispenser island, along the western property boundary adjacent to Center Street. Impacted soil has also been identified in small pockets of limited lateral extent in the vicinity of the former hydraulic lift and the former sumps. GR proposes to excavate impacted soil in these areas. The excavated soil will be removed for disposal at a properly licensed facility. On completion of excavation, the pits will be backfilled with clean imported fill material and compacted. The proposed lateral extent of the excavations is shown on Figure 2. A GeoProbe rig will be used to collect soil samples from these areas to further define the area of impacted soil and to profile the soil for disposal prior to excavation. Well MW-1 is situated within the proposed excavation and will be abandoned prior to excavation. A replacement well will be installed following completion of excavation and backfilling activities. To implement this scope of work GR proposes the following six specific tasks:

? ? Well depth 13.73'

Task 1. Well Abandonment

Well MW-1 will be abandoned by pressure grouting under permit from the Alameda County Public Works Department (ACPWD). Neat cement will be placed in the well casing using a tremie and pump. Approximately 10 to 15 pounds per square inch of pressure will be applied to the grout in the well. The well casing will be removed to approximately 12 feet below ground surface during subsequent excavation activities.

Task 2. GeoProbe Borings

Under permit from the ACPWD a GeoProbe rig (or similar push technology) will be used to advance borings in the area of the proposed excavations. The purpose of the borings is to constrain the lateral extent of the excavation and to profile the soil in place prior to excavation. The actual number of

need to specify depth of sample

borings, number of samples collected, and the analyses performed on the samples will depend on field conditions and disposal facility requirements. GeoProbes do not generate waste materials. Because we anticipate the soil be excavated within two weeks after completion of the profile sampling, the boings will not be backfilled with neat cement.

Task 3. Soil Excavation

Following completion of the well abandonment and pre-profiling tasks, the soil within the designated areas will be excavated by a California-licensed contractor. Proposed limits of the excavation are shown on Figure 2. Actual limits of the excavation will depend on GeoProbe data. Excavation activities will be monitored by a GR geologist. The pits will extend vertically to groundwater, which we anticipate will be encountered at approximately 12 feet bgs. Soil samples will be collected at the furthest extent of the excavation. Because the UST and dispenser island excavation will extend to the property line at the back of the sidewalk along Center Street, this wall of the excavation will be shored, so soil samples will not be collected from this wall of the excavation. Soil samples will be analyzed as described below in Task 4. Sample collection and handling procedures are attached.

should have sample coverage in this area

Excavated soil will be loaded directly into trucks and hauled to an appropriate disposal facility by a California-licensed hazardous waste hauler. Magnesium peroxide (Oxygen Releasing Compound (ORC) or similar product) will be placed in the pit prior to placement of the backfill. The ORC should help stimulate the natural degradation of dissolved hydrocarbons in the groundwater beneath the site. Following completion of excavation activities, the pits will be backfilled with clean imported fill material and compacted.

— any scale of amt?

Task 4. Analysis of Soil Samples

Confirmation soil samples will be submitted under chain-of-custody for analysis by a California-licensed Hazardous Waste Testing Laboratory. Samples from the former gasoline UST/dispenser island excavation will be analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) and as diesel (TPHd), and for the compounds benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tert-butyl ether (MtBE) by DHS LUFT methods. Samples from the former hydraulic hoist pit will be analyzed for Total Petroleum Hydrocarbons as hydraulic oil (TPHho) and as motor oil (TPHmo) by DHS LUFT methods. Samples from the former sump area will be analyzed for TPHg, TPHd, BTEX, and MtBE. + VOCs (8240) + TPHmo, metals + SVOCs.

Task 5. Replacement Well Installation

Is this o.k. w/ pit?

Upon completion of excavation and backfilling activities, a replacement groundwater monitoring well (MW-1A) will be installed in the immediate vicinity of previously destroyed well MW-1. The well will be installed by a California-licensed well driller. Drilling activities will be monitored by a GR geologist. The well boring will be drilled to 20 feet bgs with 8-inch diameter hollow-stem auger. A GR geologist will monitor the drilling activities. Because the well will be installed in the

immediate vicinity of former well MW-1, the well boring will not be logged, and soil samples for description or chemical analysis will not be collected.

The well will be constructed with 2-inch diameter Schedule 40 PVC and 0.02-inch machine-slotted well screen. The screened interval will extend from 5 to 20 feet bgs. Lonestar #3 sand will be placed over the entire screened interval, and will extend approximately 1 foot above the screen. The sand will be followed by hydrated bentonite, then neat cement. A vault box and waterproof well cap will protect the top of the well casing. Proposed construction details for the well are shown on Figure 3.

Drill cuttings will be stored at the site pending receipt of chemical analytical data and disposal. The drill cuttings will be stockpiled on and covered with plastic sheeting. Soil samples will be collected from the drill cuttings for disposal characterization. Integrated Wastestream Management (IWM) will transport the soil stockpile to an approved disposal facility. Steam cleaning rinsate waste water will be stored at the site in properly labeled drums pending disposal.

The newly installed well will be surveyed to MSL by a California-licensed surveyor, and the horizontal coordinates of the well will be measured. The well will be developed after being allowed to stand a minimum of 72 hours after placement of the well seal. The well will then be included in the regularly scheduled monitoring and sampling program. Well development and steam cleaning water will be transported by IWM to McKittrick for disposal.

Task 6. Reporting

Destruction of well MW-1 will be presented in a letter report immediately after completion of the pressure grouting activities. A second report documenting excavation of impacted soil, placement and compaction of import material, and results from the confirming soil samples from the pit walls will be presented in a second report. This second report will also include documentation of the replacement well. Both these reports will be submitted to Chevron Products Company and Mr. Hollis Rodgers for their use and distribution.

Project Staff

Mr. Stephen J. Carter, a Registered Geologist in the State of California (R.G. No. 5577), will provide technical oversight and review of the drilling and well installation work. Mr. Greg Gurss, Senior Project Manager, will supervise implementation of field and office operations. GR employs a staff of geologists, engineers, and technicians who will assist with the project.

Schedule

Implementation of the proposed scope of work will commence immediately upon receipt of regulatory and Cleanup Fund approval. GR will obtain a permit for the destruction of well MW-1 immediately, and destruction activities will commence as soon as a driller can be scheduled. Soil samples for disposal characterization will be collected as soon as a GeoProbe rig can be scheduled. Excavation activities will be scheduled after the soil has been profiled and accepted at the disposal facility, the excavation work

has been bid out, and an excavation contractor selected and scheduled. We anticipate that excavation and backfilling activities can be completed by the end of September. Replacement well MW-1A should be installed by the end of October.

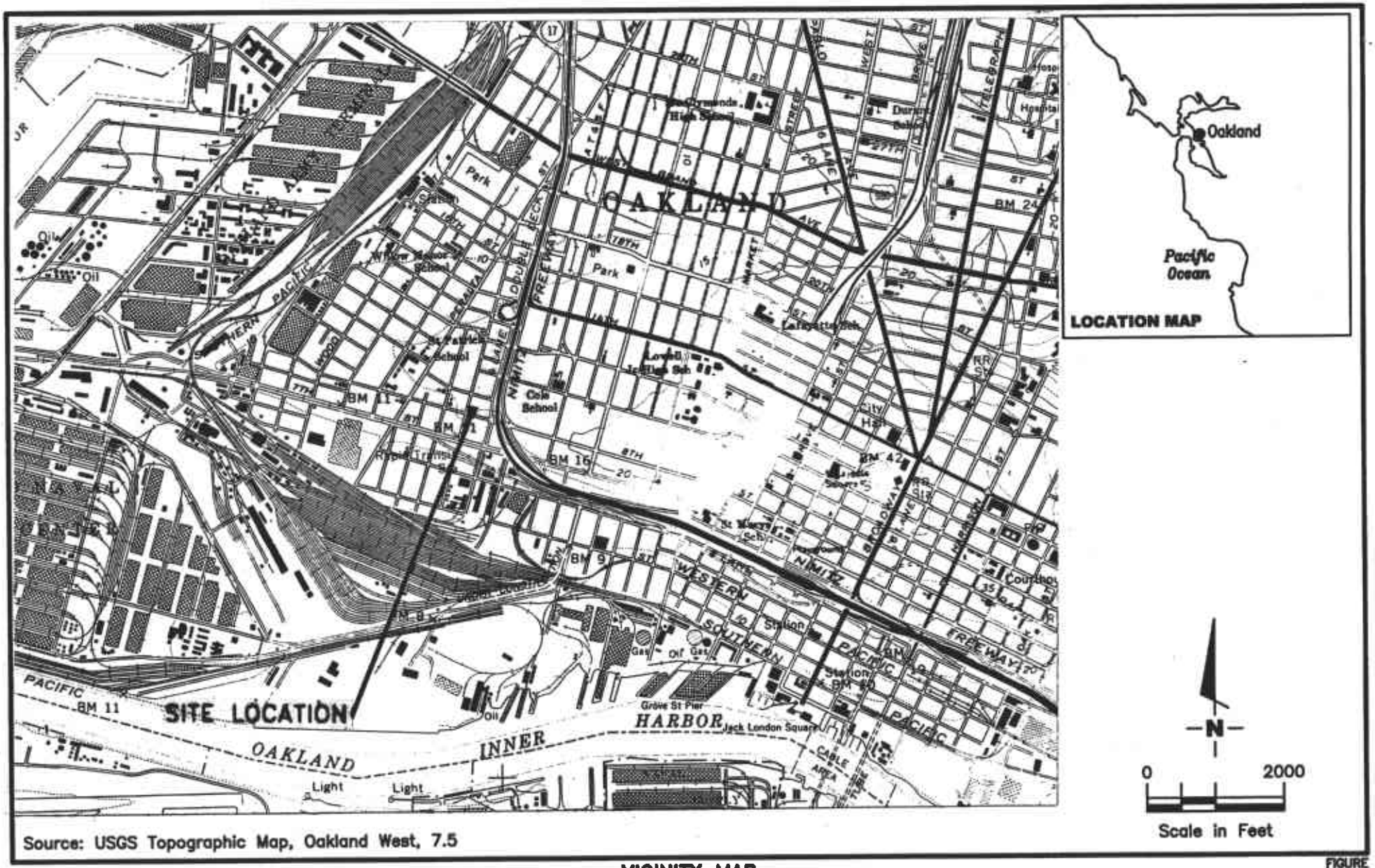
Please call us at 916.631.1300 if you have questions regarding this Work Plan.

Sincerely,
DELTA ENVIRONMENTAL CONSULTANTS, INC.
Network Associate GETTLER-RYAN INC.

Stephen J. Carter, R.G. 5577
Senior Geologist

Attachments: Figure 1. Vicinity Map
Figure 2. Site Plan
Figure 3. Proposed Well Construction Detail
GR Field Methods and Procedures

cc: Mr. Hollis Rodgers, c/o Victor Brown, 580 Grand Avenue, Oakland, CA 94610
Mr. Tom Bauhs, Chevron Products Company, P.O. Box 6004, San Ramon, CA 94583
Mr. Terrell Sadler, 618 Brooklyn Avenue, Oakland, CA 94606
Ms. Sandi Nichols, Washburn Briscoe & McCarthy, 55 Francisco Street, Suite 600, San Francisco, CA 94133
Mr. Jim Brownell, Delta Environmental Consultants, Inc., 3164 Gold Camp Drive, Suite 200, Rancho Cordova, CA 95670-6021



Source: USGS Topographic Map, Oakland West, 7.5

Gettler - Ryan Inc.
6747 Sierra Ct., Suite J
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VICINITY MAP
Former Signal Oil Service Station No 20-6145
800 Center Street
Oakland, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
347492		12/00	

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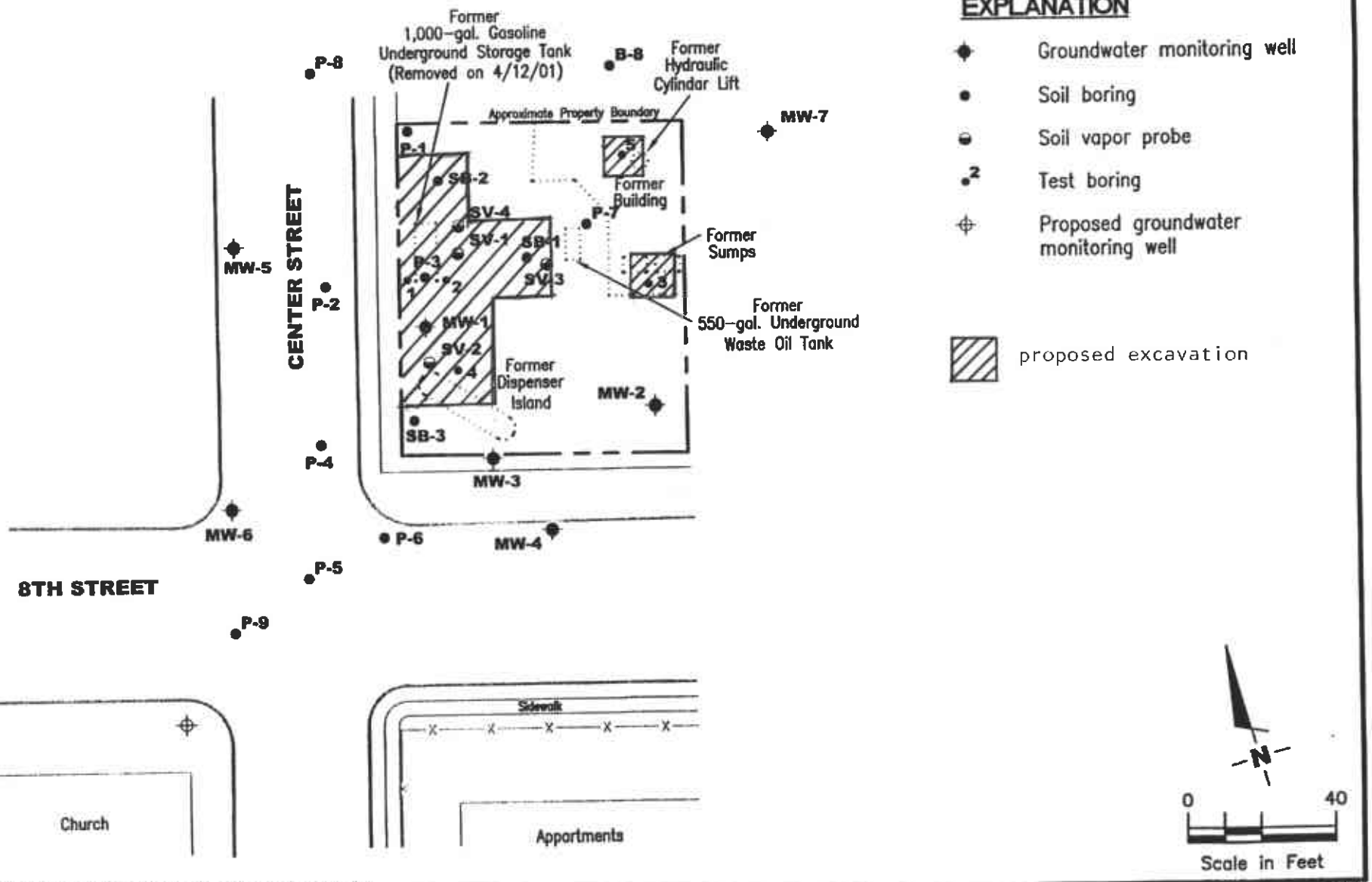

Source: Figure modified from drawing provided by RRM engineering contracting firm.

FIGURE 2

SITE PLAN
Former Chevron (Signal Oil) Service Station No 20-6145
800 Center Street
Oakland, California

GETTLER - RYAN INC.
6747 Sierra Ct., Suite J
Dublin, CA 94568
(925) 551-7555

PROJECT NUMBER
DG26145C.4C01

REVIEWED BY

DATE
5/01

REVISED DATE

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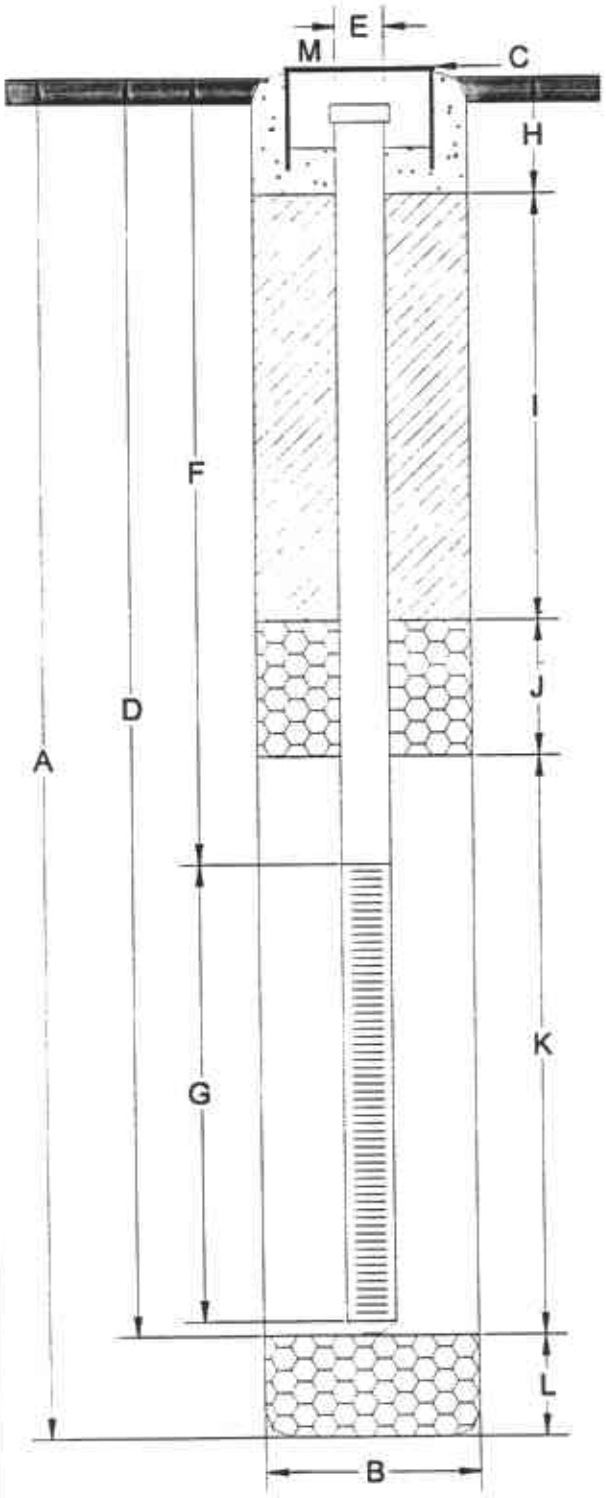
WELL CONSTRUCTION DETAIL



A Total Depth of Boring: 20 ft.

B Diameter of Boring: 8 in.
Drilling Method: Hollow-stem auger

C Top of Casing Elevation: ft.
☐ Referenced to Mean Sea Level
☐ Referenced to Project-Datum

D Casing Length: 20 ft.
Material: Schedule 40 PVC

E Casing Diameter: 2 in.

F Depth to Top Perforations: 5 ft.

G Perforated Length: 15 ft.
Perforated Interval from: 5 to 20 ft.
Perforation Size: 0.02 in.

H Surface Seal from: 0 to 1 ft.
Seal Material: Concrete

I Backfill from: 1 to 3 ft.
Backfill Material: Neat Cement

J Seal from: 3 to 4 ft.
Seal Material: Bentonite

K Gravel Pack from: 4 to 20 ft.
Pack Material: #3 Lonestar Graded Sand

L Bottom Seal: None ft.
Seal Material: None

M Water-resistent vault box, locking expandable well cap, and lock

Note: Depths measured from initial ground surface.

FIGURE
3

Proposed well Construction Detail
Former Chevron Station #20-6145
800 Center Street
Oakland, California

GETTLER - RYAN, INC.
6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
346492.02		05/25/01		

GETTLER-RYAN INC.

FIELD METHODS AND PROCEDURES

(UST and Piping Removal Sampling)

Site Safety Plan

Field work performed by Gettler-Ryan Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Samples

Collection of soil samples from underground storage tank (UST) pits is performed in accordance with the California State Water Resources Control Board's *Leaking Underground Fuel Tank (LUFT) Field Manual* (October 1989), the Central Valley Regional Water Quality Control Board's *Tri-Regional Board Staff Recommendations for Preliminary Investigation And Evaluation Of Underground Tank Sites* (August 10, 1990), and local agency guidelines.

Soil samples are collected from the wall or base of the excavation with a hand-driven sampling device fitted with a 2-inch-diameter, clean brass tube or stainless steel liner. If safety considerations preclude collection of the samples with the drive sampler, the excavating equipment is used to bring soil from the pit wall to the surface, where a sample tube is filled by driving it into the soil in the excavator's bucket. After removal from the sampling device, sample tubes are covered on both ends with Teflon sheeting, capped, labeled, and place in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory.

If it is necessary to collect a sample of groundwater standing in the excavation, the grab groundwater sample is collected by lowering a new, clean disposable Teflon bailer into the pit from a safe position along the pit wall. Once filled and retrieved, the groundwater in the bailer is carefully decanted into the appropriate containers supplied by the analytical laboratory. If required, preservative is added to the sample bottles by the laboratory prior to delivery. The samples are then labeled and place in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory.

Field Screening of Soil Samples

A PID is used to perform head-space analysis in the field for the presence of organic vapors from soil samples. This test procedure involves placing a small amount of the soil to be screened in a sealable plastic bag. The bag is warmed in the sun to allow organic compounds in the soil sample to volatilize.

The PID probe is inserted through the wall of the bag and into the headspace inside, and the meter reading is recorded in the field notes. An alternative method involves placing a plastic cap over the end of the sample tube. The PID probe is placed through a hole in the plastic cap, and vapors with the covered tube measured. Head-space screening is performed and results recorded as reconnaissance data only. GR does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.