

10-353



September 28, 1999

Alameda County  
Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Alameda County  
JUN 16 2003  
Environmental Health

Attention: Mr. Scott Seery

Subject: Work Plan for Soil and Groundwater Investigation  
Quik Stop Market No. 88  
20757 Lake Chabot Road, Castro Valley, California  
(CCI Project No. 12139-2)

Dear Mr. Seery:

Compliance & Closure, Inc. (CCI) is pleased to present this Work Plan to conduct a Soil and Groundwater Investigation at Quik Stop Market No. 88, located at 20757 Lake Chabot Road in the City of Castro Valley, Alameda County, California (Figure 1).

This Work Plan is in response to the Alameda County Environmental Health Services (Alameda County) letter dated August 18, 1999 requesting a Work Plan to investigate the extent of groundwater contamination detected during the installation of new fuel tanks in December 1998.

### Background

The subject site is occupied by Quik Stop Market No. 88, which engages in the retail sale of gasoline and convenience foods and products. In December 1998, two old gasoline underground storage tanks (USTs) were replaced by two new 12,000-gallon, double-walled, fiberglass USTs, located approximately 10 feet southeast of the former tank location ( Figure 2).

After the USTs were removed, the excavation was inspected. The bottoms of the USTs had been at a depth of approximately 12 feet and water was observed at the bottom of the eastern half of the excavation. Some of the soil had a grayish discoloration and a sheen was observed on the surface of the water. While the sidewalls and bottom of most of the excavation appeared to be a silty clay, fractured bedrock was encountered at the bottom of the eastern part of the excavation (nearest Lake Chabot Road).

Under the direction of Alameda County, an excavator was used to obtain samples from the bottom of the western part of the excavation. Soil was excavated to a depth of approximately one to two feet below the bottom of the excavation. Two soil samples were collected in native soil approximately 2 feet below the bottom of the tanks. The two soil samples (T-1-1, T-2-1) collected from the bottom of the western end of the excavation were reported to have very low concentrations of TPHg, ethylbenzene, total xylenes and methyl-t-butyl ether (MTBE) and were reported to be free of detectable benzene and toluene. The laboratory also reported one of the two water samples (GW-1) collected from the northeast side of the excavation to have detectable concentrations of TPHg 16,000 parts per billion (ppb), benzene at 4.6 ppb, toluene at 12 ppb, ethylbenzene at 250 ppb and total xylenes at 1,400 ppb. ~~Water sample GW-1 was also reported to have MTBE at 20,000 ppb.~~ Water sample GW-2 was reported to have TPHg at 400 ppb, ethylbenzene at 0.54 ppb, total xylenes at 4.5 ppb and MTBE at 6,700 ppb.

Based upon field observations and laboratory analytical results from the fuel tank replacement project, the Alameda County is requesting a Work Plan to conduct a Soil and Groundwater Investigation at the subject site.

## SCOPE OF WORK

CCI proposes to conduct a Soil and Groundwater Investigation at the subject site by installing three groundwater monitoring wells. The soil and groundwater samples collected from the monitoring wells will be analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene and xylenes (BTEX) and fuel oxygenates using EPA Test Method 8260.

### Well Installation

The three groundwater monitoring wells will be drilled with a truck-mounted, B-61 drill rig, using 8-inch outside diameter hollow stem augers, which will be cleaned prior to use. The borings will be advanced to the upper-most water bearing stratum, and advanced 10 feet into the aquifer or terminated in an aquitard underlying that stratum. A CCI geologist will log the borehole by collecting samples at 5-foot intervals, lithologic contacts of interest and areas of obvious contamination. Upon retrieval, the sampler will be disassembled into its component parts. One or more of the brass liners will be selected for chemical analysis. The ends of the selected liner(s) will be sealed with Teflon sheets, capped with plastic caps, labeled, logged on a chain-of-custody form and stored in a chilled chest containing ice for preservation in the field and during transport to the analytical laboratory. Each boring will be logged using the Unified Soil Classification System. Drill cuttings will be placed in approved Department of Transportation (D.O.T.) drums and left at the site pending laboratory analysis of the soil.

The monitoring wells will be constructed using 2-inch diameter, schedule 40 polyvinyl chloride

(PVC) well casings. ~~Ten to fifteen feet of screen will be used.~~ The final well design will depend upon subsurface conditions encountered. The annulus between each casing and borehole will be backfilled with 2/12 sand to about 2 feet above the screen interval. A bentonite clay spacer, at least 1 foot thick, will be placed above the sand pack, and cement grout will be pumped from above the bentonite to the surface. A watertight, locking, vault box will cap each well. The wells will be developed prior to sampling, and sampled according to CCI's Sampling Protocol. ~~The interval between development and sampling will be approximately 24 hours.~~ The wells will be developed by manually bailing the wells to: (a) remove residual silts and clays left from the drilling and (b) improve the hydraulic conductivity between the wells and natural formation. The well development water will be stored on-site in sealed, labeled drums (D.O.T, 17E) pending laboratory results.

Before groundwater sampling, a CCI sample technician will measure the depth-to-groundwater using an electric sounding tape and will field-check the wells for the presence of free-floating product by collecting a sample in a clear acrylic bailer. The wells will be purged of stagnant water prior to the collection of a sample. Normal field measurements, including pH, conductivity, and water temperature, will be taken periodically and recorded during the purging process. A sample will be collected when these parameters stabilize to within 10% of each other. At least three well casing volumes of groundwater will be purged from each well before sampling. Samples will be (a) collected in a clean Teflon bailer, (b) transferred to appropriate laboratory-supplied bottles, © labeled, (d) logged on chain-of-custody forms, and (e) placed in a chilled ice chest for transport to a state-certified laboratory. Once the laboratory results are known on the groundwater, the purge and sample water will be disposed of properly.

## SURVEYING

A licensed land surveyor will be retained to survey the monitoring wells accurately and to determine the elevation of each well casing. The survey ensures accuracy so that the plot plans will portray the data in a manner useful for determining groundwater flow direction. The survey will include both horizontal and vertical measurements. Elevation readings will be measured to the nearest 0.01 feet and corrected to mean sea level.

## Laboratory Analysis

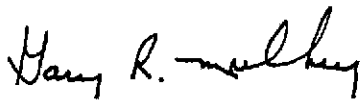
It is anticipated that the installation of the monitoring wells will generate between 6 and 9 soil and three water samples for analyses. These samples will also be analyzed for total petroleum hydrocarbons as Gasoline (TPHg) and benzene, toluene, ethyl benzene and total xylenes (BTEX) and oxygenates using EPA Test Method 8260. The samples will be analyzed on a normal (10 working days) turn-around time frame.

## REPORT PREPARATION

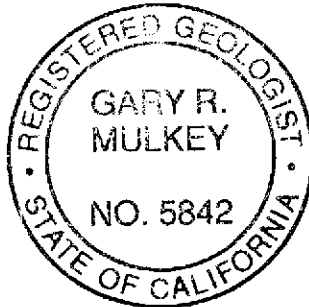
Upon receipt of the analytical test results, a written report of the monitoring well installations will be prepared and submitted to Quik Stop Markets. The report will include exploratory boring logs, well construction details, chemical data tables, site plan, cross-sections and narrative report, with conclusions and recommendations. The report will then be submitted to the Alameda County for its review and comments.

CCI is prepared to start work this project upon approval of the work plan and receiving authorization from Quik Stop Markets. CCI would appreciate any comments Alameda County may have regarding to this work plan. If you have any questions, please call us at (925) 426-5395.

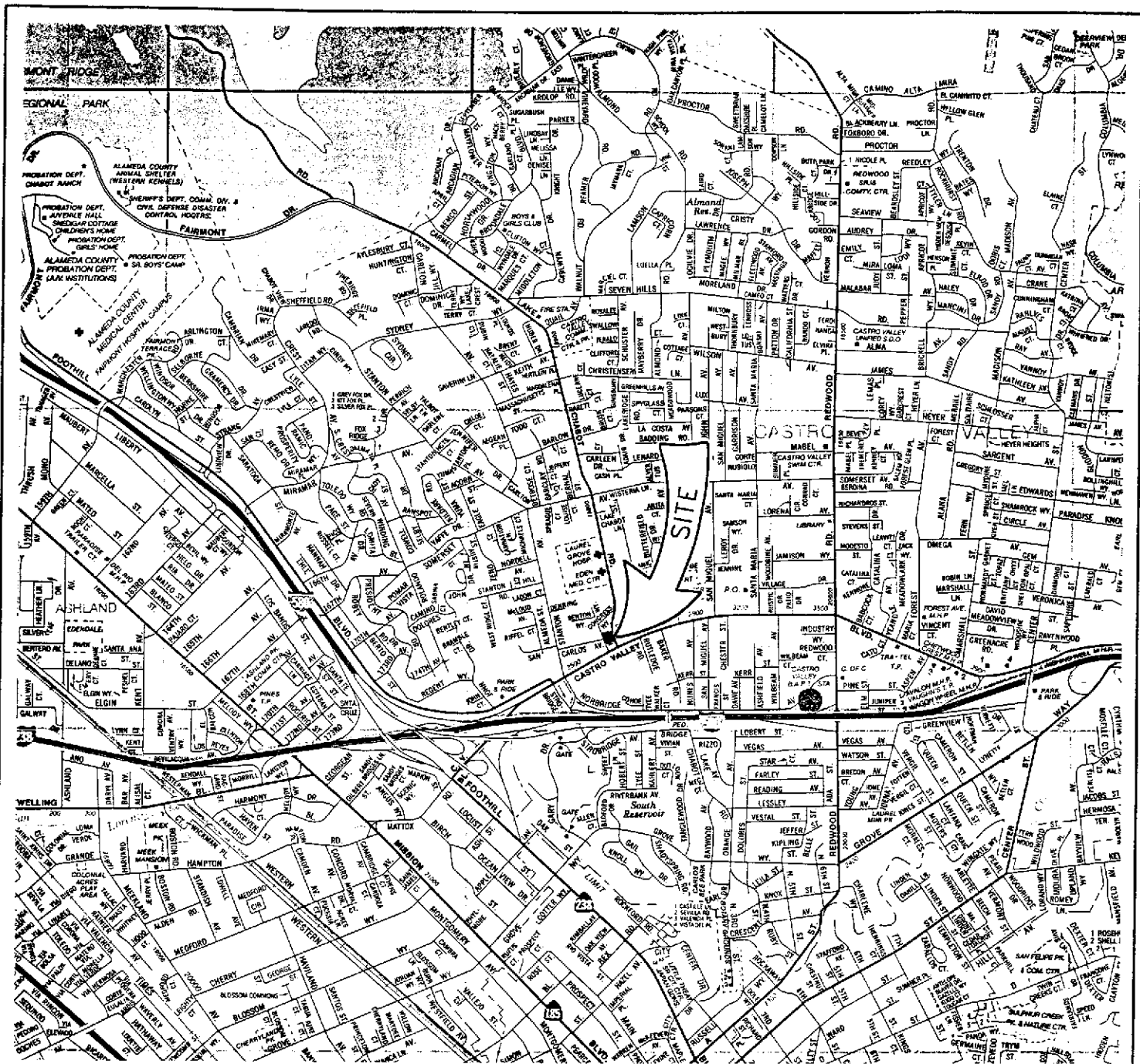
Sincerely,  
Compliance & Closure, Inc.



Gary R. Mulkey, R.G. 5842




cc: Mr. Mike Karvelot, Quik Stop Markets, Inc.



QUIK-88V

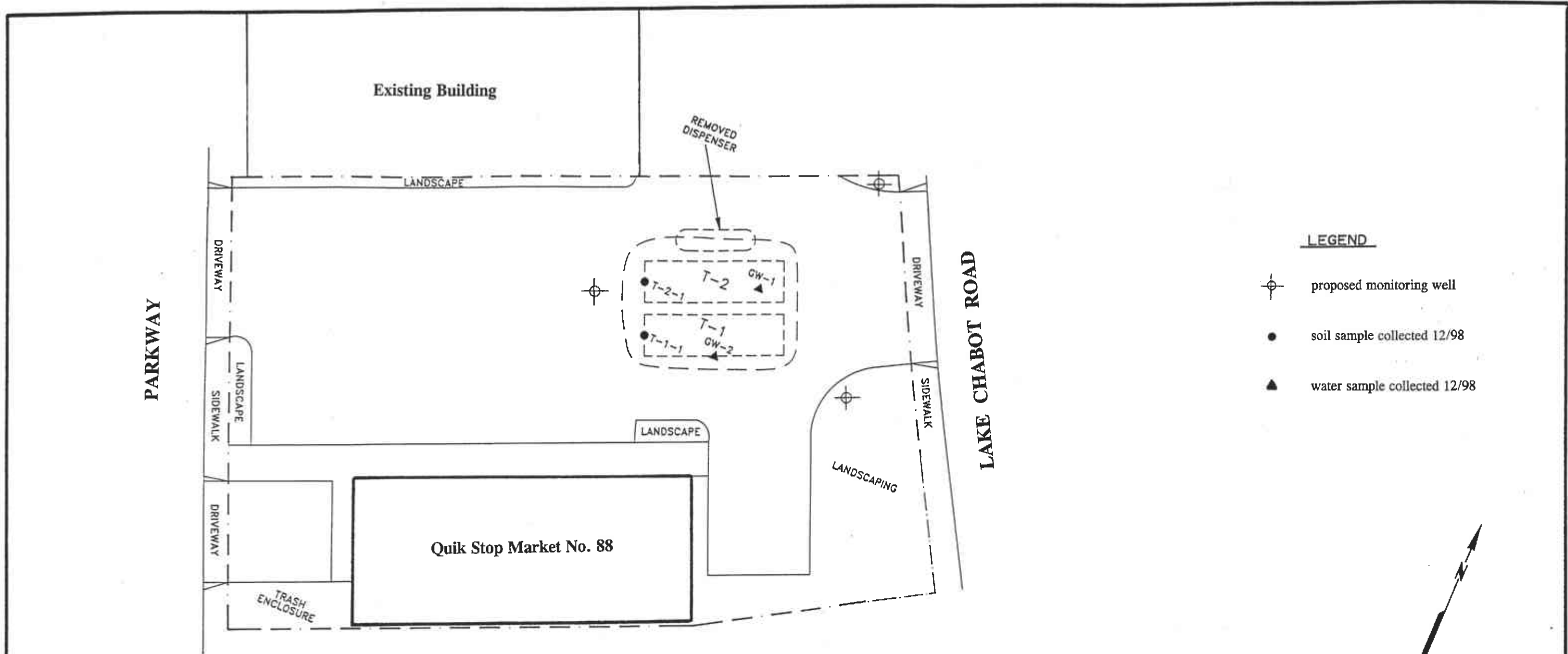
reviewed by:	RG
approved by:	RG
drawn by:	EC
job no.:	Quik Stop No. 88

**LOCATION MAP**  
 Quik Stop No. 88  
 20757 Lake Chabot Road  
 Castro Valley, California



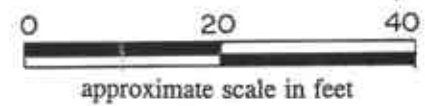
**Compliance & Closure, Inc.**

date: 03/11/99      drawing no.: Figure 1



**LEGEND**

- ⊕ proposed monitoring well
- soil sample collected 12/98
- ▲ water sample collected 12/98



REVIEWED BY: 	SITE MAP			
APPROVED BY: 	QUIK STOP NO. 88			
	20757 LAKE CHABOT ROAD		JOB #: 12139-2	DRAWN BY: GM
	CASTRO VALLEY, CALIFORNIA		DATE: 9/28/99	DRAWING #: FIG. 2