Richard W. Ely
Consulting Geologist
2138 Green hill Rd.
Sebastopol, CA 95472
707-824-4836

May 24, 2000

Mr. Don Hwang
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502-8577

Re: Workplan for Soil and Groundwater Investigation
Salle's Paint & Body Shop
1049 9th Avenue
Oakland, CA 94606

Dear Mr. Huang:

This letter is to confirm our phone conversation of May 24, 2000. Due to the presence of several underground utility alignments along the northwestern curb of 9th Avenue, the best location for Well MW-3 is in the sidewalk approximately 50 to 60 feet southwest of the former waste-oil tank location, and 40 to 50 feet southwest of the proposed MW-1 location (Figure 2).

The precise location may have to be adjusted in the field depending on the presence of underground utilities.

We have scheduled site work for July 14, 2000, pending approval of this Workplan by the ACHCSA. The report will be submitted within 30 days after receipt of the analytical results.

Sincerely,

Richard W. Ely

Richard W. Ely RG #4137
2138 Green Hill Rd.
Sebastopol, CA 95472
707-824-4836

cc: Dick Cochran
Kvilhaug Drilling & Pump

Richard W. Ely
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December 29, 1999

Ms. Juliet Shin
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502-8577

Workplan for Soil and Groundwater Investigation
Salle's Paint & Body Shop
1049 9th Avenue
Oakland, CA 94606

Dear Ms. Shin:

Mr. Richard Ely, Registered Geologist, has been retained by Mr. Dick Cochran to prepare this Workplan for a soil and shallow groundwater investigation near the location of a former waste-oil underground storage tank (UST) at 1049 9th Avenue, Oakland, California (site) (Figure 1). This investigation was requested by the Alameda County Health Care Services Agency (ACHCSA) in a letter to Mr. Cochran dated November 10, 1999.

Setting
The site is situated at an elevation of approximately 12-feet (ft) above Mean Sea Level in an area of apartment buildings and small businesses. The Oakland Inner Harbor (part of San Francisco Bay) lies 1100 feet to the south. The site is underlain by late Pleistocene age alluvial fan deposits of the Temescal Formation. These materials have moderate permeability and consist primarily of interfingering lenses of clayey gravel, sandy silty clay, and sand-silt-clay mixtures. The water table probably lies 5- and 10-ft depth and probably slopes southward towards the Inner Harbor.

UST Removal Activities
Walker's Hydraulics Inc. of Concord, California removed a 280-gallon UST for waste oil from the site on July 20, 1994. Touchstone Developments of San Francisco, California observed the tank removal and collected two soil samples from the excavation, and a four-fold composite sample from the spoil pile [WSP-1 (A-D)]. The two excavation samples were analyzed for Total Petroleum hydrocarbons as gasoline (TPHg) and TPH as diesel (TPHd) by Method 8015 (Modified); benzene, toluene, ethylbenzene and total-xylenes (BTEX) by Method 8020; Oil & Grease (O&G) by Methods 5520F; Semivolatile Organics (SVOCs) by method 8270; Halogenated Volatile Organics (HVOCs) by Methods 5030/8010; and Cd, Cr, Ni, Pb, and Zn by Method 6010.

Barney Chan of the ACHCSA witnessed the removal. The UST was located beneath the sidewalk on the 9th Avenue side of the building. The field activities and analytical results were presented in an Underground Storage Tank Removal Report dated August 3, 1994.

Soil sample WO-1-8.5' was collected from 8.5-feet (ft) below ground surface (bgs) at the bottom of the excavation, approximately 2-ft below the former UST bottom. Soil sample RF-3' was collected from 3-ft bgs on the building side of the excavation, approximately 2-ft below the remote-fill piping that extended from inside the building to the UST. The analytical results are compiled in Table 1 (attached).

PROPOSED SCOPE OF WORK

This Workplan is designed to investigate shallow soil and ground water conditions around the former waste-oil UST. The work is proposed to be done in two stages. The first stage will consist of collecting soil samples and a grab groundwater sample from below the sidewalk immediately southwest of the former UST excavation. The analytical results will be transmitted to the ACHCSA in a letter report.

If significant concentrations of contaminants are found in site groundwater, three soil borings will be constructed and converted into monitoring wells to assess the groundwater gradient and the impact to the shallow ground water. The soil borings will be drilled to approximately 20 feet depth. Figure 2 shows the proposed locations of the soil borings.

Task 1: Acquire Permits
Prior to beginning the field investigation, well permits will be acquired Alameda County Water District, and encroachment permits will be acquired from the City of Oakland Public Works Agency.

Task 2: Prepare Site Safety Plan
A site Safety Plan will be prepared that identifies the chemicals that may be encountered during the investigation, describes precautionary measures to be taken when in the presence of these chemicals, and contains a map to the nearest hospital.

Task 3: Initial Soil & Groundwater Sampling
Soil Sampling Procedures
Before drilling commences, Underground Service Alert will be notified so that all buried utilities near the proposed boring locations are located. A soil boring will be advanced at the location shown as MW-1 on Figure 2 using a direct-push sampling device to an approximate depth of 16 ft below ground surface (bgs). Relatively undisturbed soil samples will be collected 2-inch-diameter by 2-ft-long plastic sleeves. Soil samples from approximately 5-, 10- and 15-ft bgs will be submitted for laboratory analysis. The samples will be retained in a 6-inch long

segment of the plastic tube, capped, labeled, logged on a chain-of-custody form and placed in a chilled ice chest for transport to a State-certified laboratory.

Groundwater Sampling Procedures

A groundwater grab-sample will be collected from the soil boring within a temporary well screen. When the soil boring has been advanced to approximately 5-ft below the top of groundwater, a clean 1-inch-diameter PVC well screen will be inserted into the boring and allowed to partially fill with groundwater. A groundwater sample will be collected by lowering a clean, stainless steel bailer into the well screen. The sample will be transferred to laboratory supplied containers, labeled, logged on a chain-of-custody form and placed in a chilled ice chest for transport to the laboratory.

Following the collection of soil and groundwater samples, the soil boring will be abandoned by filling it with bentonite chips to 6-inches below grade and hydrating. The boring will be capped with asphalt pending the receipt of analytical results.

Task 4: Evaluate Initial Results

A letter report containing the laboratory data sheets for the first stage of sampling will be submitted to the ACHCSA within 7 days of receipt of the results. If groundwater- and soil-contamination concentrations are below established residential-area MCLs and are acceptable to the ACHCSA, Tasks 5, 6, 7, 9 and 12 of this Workplan will not be performed.

Task 5: Soil Borings & Monitoring Well Construction

Soil Borings

The soil borings will be drilled with a truck mounted drill rig using an 8-inch outside diameter hollow stem auger. Augers and other drill tools will be steam cleaned before drilling the boring to minimize the possibility of cross-contamination. The sampler will be decontaminated between each sample drive. Relatively undisturbed soil samples will be collected at approximately 5-ft intervals, at lithologic changes, and at the saturated zone with a modified California split tube sampler fitted with three internal 2-inch diameter by 6-inch-long clean brass or stainless steel liners. When a boring reaches the desired sampling depth, the sampler will be lowered through the augers to the bottom of the hole. A 140-pound, rig-operated hammer is used to drive the sampler 1.5 feet ahead of the auger. The MW-1 boring will not be sampled because the location will have been sampled during Task 3.

One soil sample from each interval will be collected for laboratory analysis, sealed and capped with aluminum foil and with plastic end caps (no adhesive tape will be used), labeled, logged on a chain-custody form, and placed in a cold ice chest for transport to a state-certified laboratory. A log will be maintained to describe the subsurface conditions encountered during drilling. Subsoil conditions will be classified by the Unified Soil Classification System and will be described using the Munsell Soil Color Charts.

All drill cuttings from the soil borings will be stored onsite in DOT 17H 55-gallon drums and labeled as to content. Equipment decontamination wash/rinse water will be stored on site in DOT 17H 55-gallon drums and labeled as to content. Disposal will be dependent on the results of laboratory testing.

Well Construction

Well construction is based on site-specific conditions and is determined in the field by the field geologist. However, the following standard procedures will be followed:

The wells will be screened to monitor the first water-bearing zone encountered. If high groundwater conditions exist, the top of the well screen may be set at static water level or below static water level.

Ten feet of well screen will be used in the wells (3-ft above static groundwater and 7-ft feet below static water). Monitoring wells will be constructed with flush-threaded, 2-inch diameter Schedule 40 PVC blank casing with 0.010-inch factory milled screen size. Number #3 or #2/12 sand will be used in the annular space around the well screen to approximately two feet above the top of the well screen. If high groundwater conditions exist, the sand may be placed zero to one foot above the top of the well screen. Two feet of bentonite pellets are used to separate the sand from the sanitary surface seal (grout). If high groundwater conditions exist, 1 foot of bentonite pellets may be used to separate the sand from the sanitary surface seal.

The grout (Portland cement with approximately three to five percent bentonite powder) is poured into the annular space above the bentonite pellets. If the surface seal is greater than five feet thick, grout consisting of cement mixed with three to five percent bentonite powder will be tremied or pumped into the annular space above the bentonite pellets to prevent the infiltration of surface water into the well. If the surface seal is 5-ft or less thick, the grout will be poured from the surface. The resulting seal will be checked for shrinkage within 24 hours and additional grout will be added, if necessary.

The monitoring wells will be locked with a cap and covered with a traffic-rated vault. The well ID will be clearly marked on the cap and vault.

Task 6: Well Development

The ground water monitoring wells will be developed not less than 48 hours after placement of the surface seal (grouting) to allow sufficient time for the cement grout to set. Well development consists of several cycles of surging (using a vented surge block) and over pumping of the well.

Prior to development, the depth to water and the total depth of the well will be measured. Development shall continue until the turbidity of the water is less than five NTUs, or when ten well volumes have been removed, whichever occurs first.

The groundwater removed from the wells during development will remain on-site in DOT 17H 55-gallon drums. The drums will be sealed and labeled with the contents and date.

Task 7: Well Sampling
Prior to sampling, each well will be checked for the presence of free-phase hydrocarbons using an interface probe, clear bailer, or tape with product detection paste. Product thickness (measured to the nearest 0.01 foot) will be noted on the sampling form. Water level measurements will be made using an electronic water level meter. The water level measurements will be noted on the sampling form.

Prior to sampling, each well will be purged of a minimum of five well casing volumes of water using a steam-cleaned PVC bailer, a new disposable PVC bailer, or a pre-cleaned sampling pump. Temperature, pH and electrical conductivity will be measured at least three times during purging. Purging will be continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do no exceed ±0.5 F, 0.1 or 5 percent, respectively).

The purge water will be stored temporarily on-site in DOT 17H 55-gallon drums pending analytic results. The drums will be labeled with the date, contents, and the field personnel initials, and telephone number.

Groundwater samples will be collected from the wells with new disposable PVC bailers. For samples to be analyzed for VOCs a bottom emptying device will be used to minimize loss of volatile components. The samples will be labeled to include sample ID, date, preservative, and the field person's initials. The samples will be placed in polyethylene bags and in an ice chest (maintained at 4 C with blue ice or ice) for transport under chain-of-custody to the laboratory.

Task 8: Laboratory Analysis
The soil and ground water samples collected will be used to ascertain the extent and level of possible petroleum hydrocarbon contamination. A California state-certified laboratory will analyze the sample using methods approved by the California Regional Water Quality Control Board (CRWQCB) and the Environmental Protection Agency (EPA). Soil samples from 5-, 10- and 15-ft bgs in each boring will be submitted for analysis. The laboratory will analyze the soil and water samples for TPHg (EPA Method 8015 Modified); TPHd (EPA Method 8015 Modified); BTEX compounds and methyl-tert-butyl-ether (MTBE) (EPA Method 8020); Halogenated Volatile Organic Compounds (EPA Method 8010); and Semi-Volatile Organic Compounds (EPA Method 8270).

Task 9: Site Survey
Following installation of the wells, the top-casing elevations and the elevations of the vault rims will be surveyed to Mean Sea Level with an accuracy of 0.01 foot by a licensed surveyor. Nearby cultural features will be included in the survey.

Task 10: Report
Upon completion of all field activities, a report presenting the findings of the investigation will be submitted to the ACHCSA. The report will include field procedures for well installation, field observations, results of analytical testing, a site map showing features relevant to the investigation, boring logs, well construction details, conclusions, and recommendations.

Task 11: Disposal of Wastewater & Soil
Soil from the borings and water from equipment decontamination and well sampling will be stored in DOT 17-H 55-gallon drums. Following receipt of analytical results of samples of these materials, disposal in accordance with State and local regulations will be arranged.

Task 12: Quarterly Groundwater Monitoring
Quarterly groundwater monitoring of the site wells will begin three months after the initial sampling event. The analytical methods used will depend on the results of the initial monitoring. The quarterly monitoring reports will be submitted to the ACHCSA by the first day of the second month of each subsequent quarter. Standard procedures for sampling and reporting will be followed.

SCHEDULE

We anticipate that site work will commence within 30 days after receiving approval of this Workplan from the ACHCSA. The report will be submitted within 45 days after completion of work at the site.

Sincerely,

Richard W. Ely

Richard W. Ely RG #4137
2138 Green Hill Rd.
Sebastopol, CA 95472
707-824-4836

cc: Dick Cochran

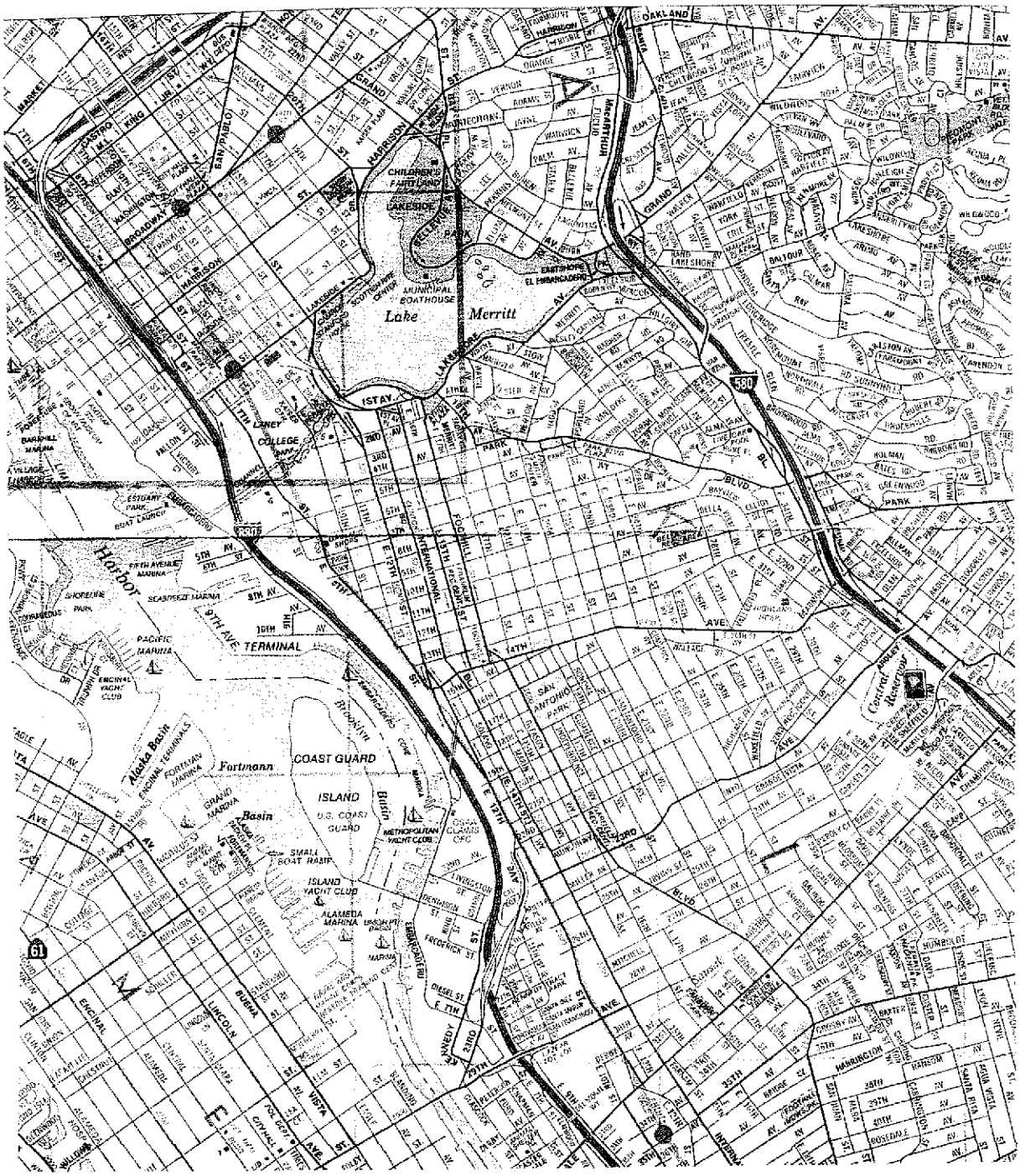
Table 1.

Soil Sample Analytical Results

1049 9th Avenue, Oakland, California

Analyte	WO-1-8.5' (mg/kg)	RF-3' (mg/kg)	WSP-1 (A-D) (mg/kg)
TPHg	590[1]	34[1]	200[1]
TPHd	3400[2]	210[2]	NA
O&G	6000	770	NA
TPH	NA	NA	12,000
Benzene	0.91	ND<0.025	0.08
Toluene	2.8	0.16	0.31
Ethylbenzene	3.0	0.093	0.52
Xylenes	26	1.9	3.9
Napthalene	9	ND<3	NA
2-methyl-napthalene	12	ND<3	NA
Trichloroethene	0.016	ND<0.005	NA
Tetrachloroethene	0.058	ND<0.005	NA
Chlorobenzene	0.48	ND<0.005	NA
Cd	ND<0.5	ND<0.5	ND<0.5
Cr	42	54	34
Ni	37	35	31
Pb	13	16	110
Zn	23	31	58

Notes:
Samples collected on July 20, 1994
mg/kg = Milligrams per kilogram
1 = Does not match typical gasoline pattern. Pattern is typical of mineral spirits.
2 = Does not match typical gasoline pattern. Pattern is typical of a mixture of mineral spirits and motor oil.
NA = Not analyzed.
ND = Not detected above the indicated concentration.



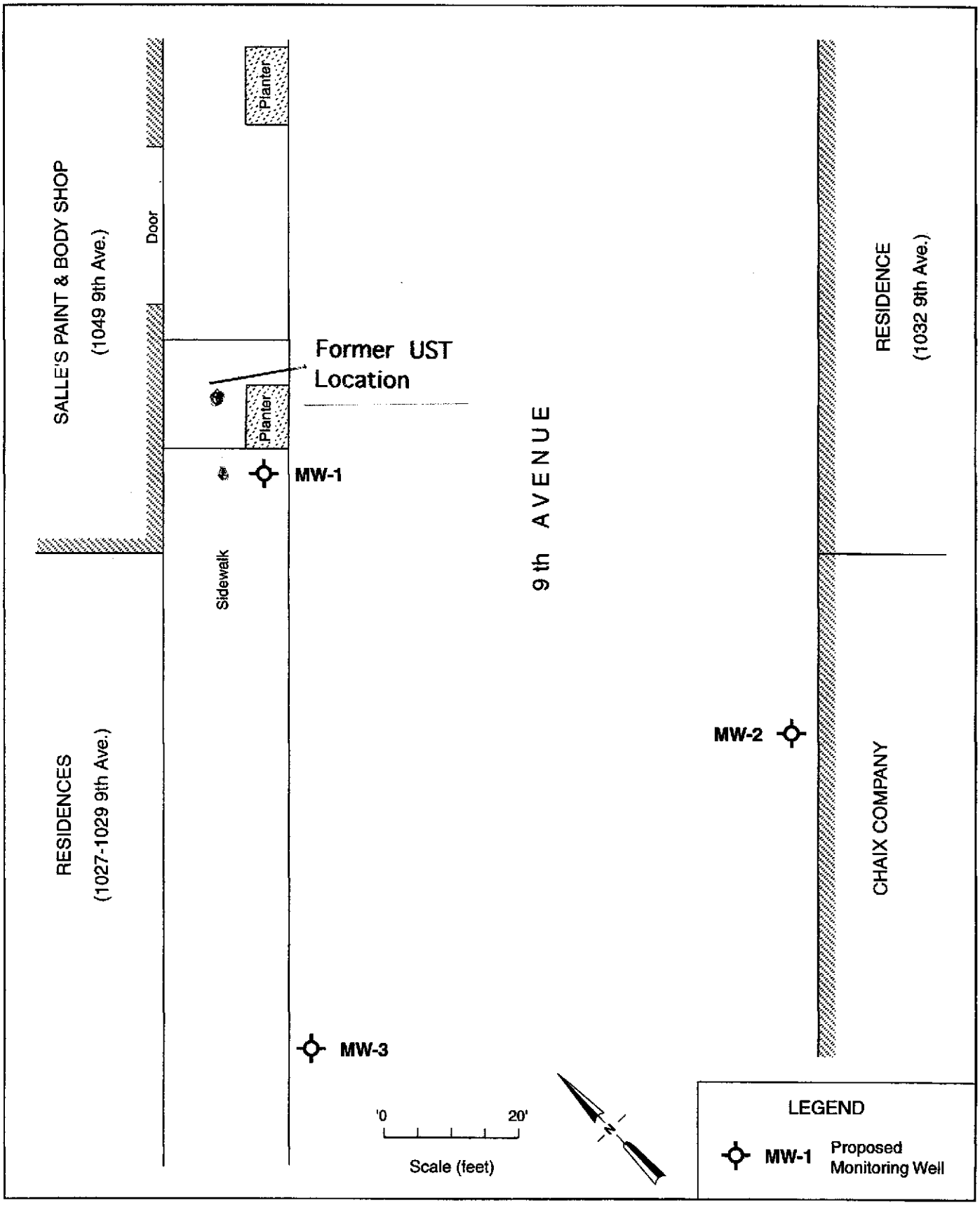
RICHARD ELY
REGISTERED GEOLOGIST

LOCATION MAP
1049 9th Avenue
Oakland, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
TRACE 165	R. Ely	December 1999	

(TRACE #165/RG/17Dec99)



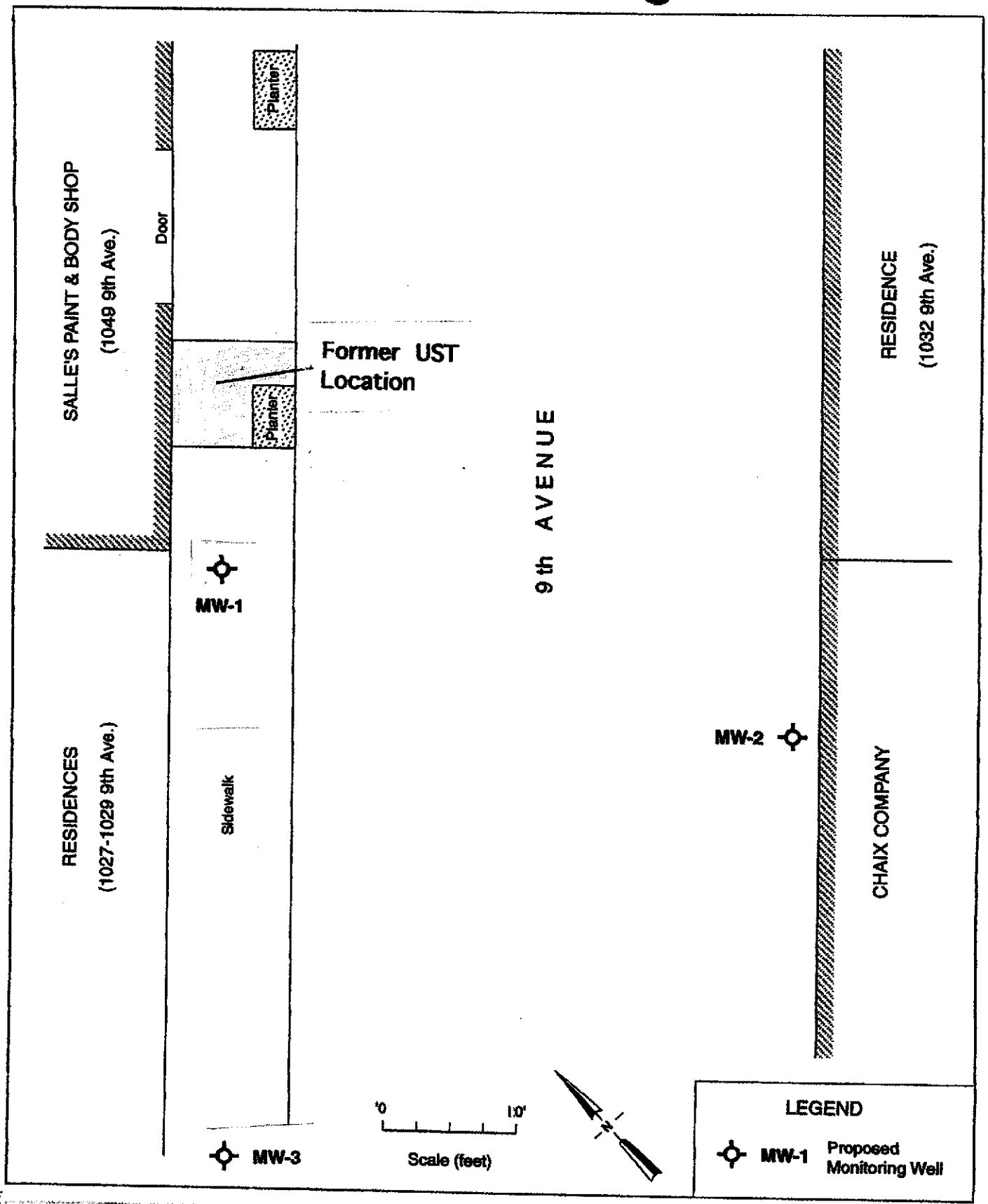
RICHARD ELY
REGISTERED GEOLOGIST

SITE PLAN
1049 9th Avenue
Oakland, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
TRACE 165	R. Ely	December 1999	

(TRACE #165/RG/20Dec99)



RICHARD ELY
REGISTERED GEOLOGIST

SITE PLAN
1049 9th Avenue
Oakland, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
TRACE 165	R. Ely	December 1999	MAY 2000

TRACE #165/RG/20Dec99