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August 3, 1993

Mr. Scott Seery
Alameda County Health Care Services Agency
Environmental Management Dept.
80 Swan Way, Room 200
Oakland, CA 94621

Re: Ray Lorge
SB 2004 (Underground Storage Tank Clean-up Fund)

Dear Mr. Seery:

I am writing in follow-up to your June 11, 1993 correspondence concerning the request for preliminary site assessment ("PSA").

As you will recall, Mr. Lorge previously received and submitted to Alameda County a report from a consultant, Chris French, which Mr. Lorge understood to satisfy Alameda County's PSA requirements. However, in light of your June 11, 1993 correspondence, Mr. Lorge has made a request for proposals from three different environmental consulting firms.

Enclosed for your review and approval is a proposal and contract for preliminary assessment to be performed at the subject property by Gen Tech Environmental. Kindly review the same and advise as to its content and acceptability in order that Mr. Lorge may satisfy the County's requirements for purposes of compliance and eligibility with the Underground Storage Tank Clean-up Fund.

Please contact the undersigned if you have any questions.

Sincerely,

Jeffory J. Scharff

JJS:af
Enclosure

cc: Ray Lorge (w/o enc.)
Chris Palmer (w/o enc.)
Rafat A. Shahid, Assistant Agency Director (w/o enc.)
Gil Jensen, Alameda County District Attorney's Office (w/o enc.)
Rich Hiett, RWQCB (w/o enc.)
Jim Ferdinand, Alameda County Fire Dept. (w/o enc.)
Blessy Torres, SWRCB (w/o enc.)

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Gen-Tech Environmental

1936 Camden Ave., Suite 1
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Contractor's Lic. #615869

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July 16, 1993
Project No. 9342

R. J. Quick Clean
2522 Castro Valley Boulevard
Castro Valley, CA 94546

Attn: Mr. Ray Lorge

Re: Groundwater Monitoring Well Installation Sampling
Proposed Scope of Work for Site at
2522 Castro Valley Blvd., Castro Valley, CA

Dear Mr. Lorge,

Gen Tech Environmental, Inc. (GTE) has prepared this scope of work for the above referenced site. The work is required by the Alameda County Health Care Services, Department of Environmental Health (ACHD) in their letter dated December 18, 1992, for releases from underground storage tanks. Previous work has occurred at this site, and is referenced at the end of this letter. The purpose of this work is to map to possible soil and groundwater contamination beyond the area of the excavated underground storage tanks.

BACKGROUND

The site had two underground storage tanks (700 and 1,000 gallon) at the rear of the property, which had been acquired by R. J. Quick Clean (**see Figure 1**). Reports regarding the tank closures were prepared by KTW Associates. The two tanks had apparently stored gasoline, and were estimated to be about 45 years old and apparently had been out of service for about 30 years. The tanks and attendent piping were removed. Samples of soil and groundwater in the

former tank vicinity revealed contamination. Contaminated soil was excavated and disposed offsite and the pits were backfilled with clean fill.

A Thrifty Oil service station bordering the opposite side of the site has a known leak. One monitoring well was installed to monitor possible movement plume movement toward R. J. Quick Clean.

A Preliminary Site Assessment was performed for the evaluation of Corrective Action for the site (French, 1992). That evaluation indicated that cleanup of impacted soil and groundwater could not be economically cleaned to yield equal water quality benefit given the site hydrogeology. A "monitoring only" was suggested as a possible approach. Further, ACHD surmises that plumes may be moving toward the R. J. Quick Clean site from a site uphill (to the west).

Technical Approach

Gen Tech Environmental, Inc. (GTE) proposes to investigate the site using exploratory soil borings, to collect soil samples and reconnaissance groundwater samples. Three groundwater monitoring wells are proposed to be installed at the locations shown on Figure 1. Previous site work has identified that only Total Petroleum Hydrocarbons as Gasoline (TPHG) and Benzene, Toluene, Ethylbenzene and Xylene (BTEX) are the contaminants on-site. This investigation program will chemically analyze for TPHG and BTEX using EPA Methods at a State certified analytical laboratory.

The data collected from these borings would be used to ascertain the concentrations and position of possible plumes arising from the former tank areas. The results would be presented to the ACHD in the appropriate report format. Given the limited Client resources, GTE feels that this approach is consistent with the Tri-Regional Guidance document prepared by the State Regional Water Quality Control Board staff, dated 10 August, 1990.

Scope of Work

GTE proposes the following scope of work;

Task 1.

Three exploratory borings will be drilled at the locations shown on Figure 1. All drilling and well installation will be done under approved ACHD permits, and according to the attached GTE protocols for soil sampling and

reconnaissance groundwater sampling (see Appendix A). Exploratory borings will be drilled using precleaned hollowstem flight auger. Soil samples will collected with split spoon samplers equipped with clean brass liners. The liners will be advanced by pushing or driving into undisturbed soil ahead of the drill bit. The sampler will be retrieved, and soil filled liners capped with Teflon® paper, capped, labeled, logged onto chain of custody forms and stored in a chilled cooler for transport to the laboratory. Soil samples will be logged using the Unified Soil Classification System under the supervision of a registered geologist. Each soil sample retained for laboratory analysis will be sealed in the metal liner, sealed with Teflon® paper and endcaps, labeled, logged onto a chain-of-custody form and packed on ice for shipment to the laboratory.

Each boreholes will be cased with Sch. 40 PVC threaded monitoring casing. The casing slots will be 0.020 inches and the annular space around the casing will be packed with 2/12 sand. Past experience has shown that this design is appropriate given the fined grained aquifer sediment and anticipated low yield. The casing will be lowered through the hollowstem and the annular space backfilled with the sand pack to a point about two feet above the top of the slots. A bentonite seal is placed atop the sand pack, and then grout sealed to the surface using a tremie. A traffic rated vault box with security device will complete the well. Depth to groundwater will be measured in all on-site wells to an arbitrary datum for this reconnaissance study, so an indication of flow gradient and direction can be measured.

Groundwater samples will be collected in laboratory prepared containers, with minimum headspace. Each well will be properly purged, and aquifers measured. A sample will be collected in the appropriate container, labeled, logged onto a chain-of-custody form and packed on ice for shipment to the laboratory. A groundwater sample will not be collected from the existed well used to monitor the Thrift site, since groundwater monitoring and sampling is already provided from that well.

Task 2. Up to three soil samples and three groundwater samples will be analyzed for TPHG and BTEX using EPA Methods 5030 and 8020. The analysis will be performed at a state-certified laboratory under a "normal" turnaround basis (ten working days).

Task 3. A letter report will be prepared and contain site map, potentiometric map, cross section, chemical data, field methods, narrative and conclusions will be included. The report will discuss the extent of contamination, and present recommendations.

If you have any questions, please call.

Sincerely,
Gen-Tech Environmental, Inc.

Christopher M. Palmer, C. E. G. 1262

REGISTERED GEOLOGIST
CHRISTOPHER M. PALMER
№ 1262
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

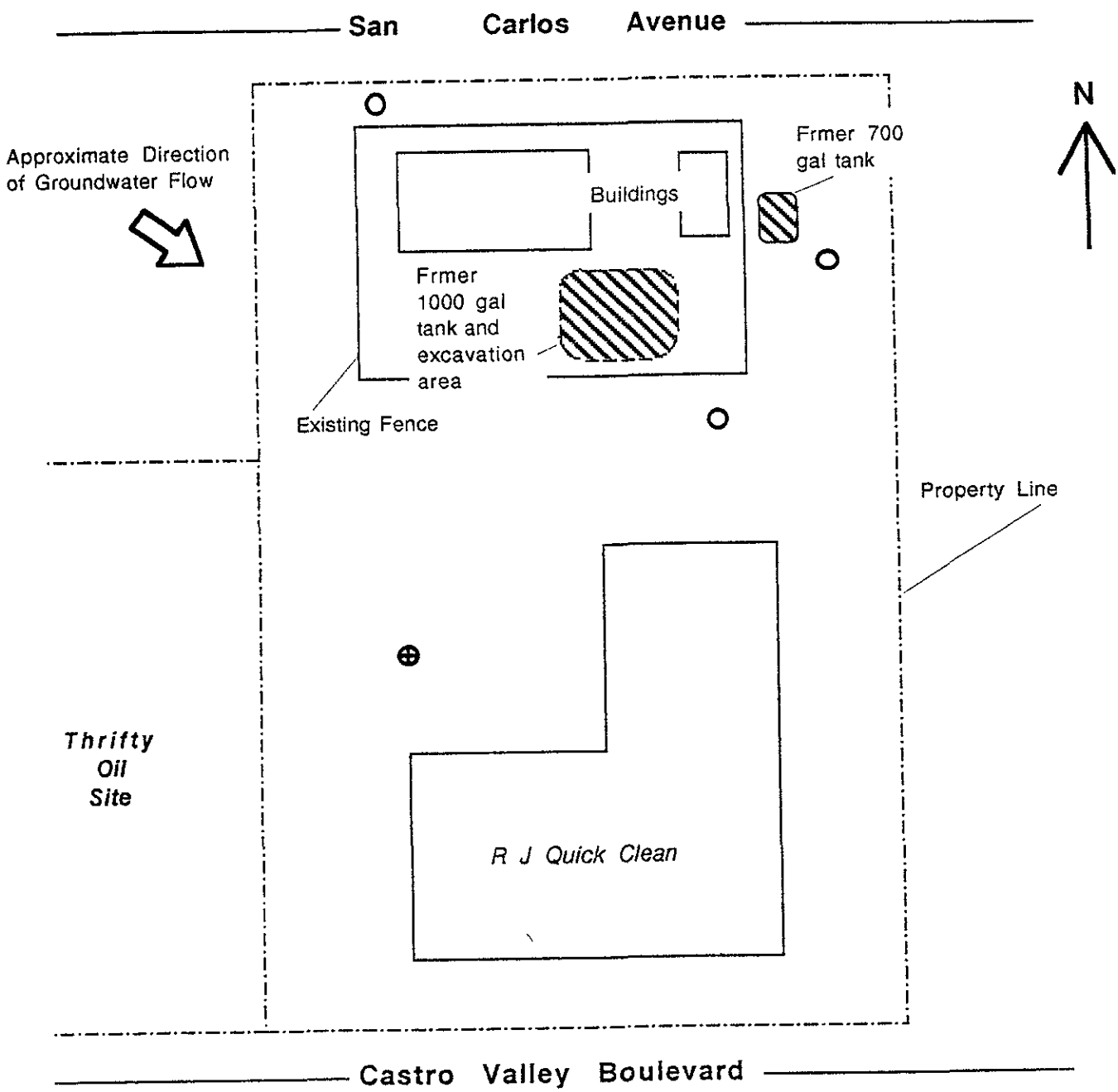
Attachments: Figure 1. Site Plan
Gen-Tech Drilling and Sampling Protocols
Cost and Contract

References

Alameda County Health Department, letter to Mr. Ray Lorge dated November, 24, 1992, STID 659, regarding Preliminary Site Assessment-2522 Castro Valley Boulevard/2517 San Carlos Boulevard, Castro Valley.

KTW Associates, Project 1231, Tank Closure Report No. 1 (1,000 gallons) and No. 2 (700 gallons), RJ Quick Clean, 2522 Castro Valley Boulevard, Castro Valley, dated March 8 and March 9, 1991.

Christopher M. French, RG, letter to Mr. Jeff Scharff, Preliminary Site Assessment and Preliminary Evaluation of Corrective Action Alternatives the 2522 Castro Valley Blvd. 2517 San Carlos Ave., Castro Valley, 14 pg.



○ Proposed Groundwater Monitoring Wells

⊕ Existing Monitoring Well

0 30

SITE PLAN
Proposed Well Locations
RJ Quick Clean
2522 Castro Valley Blvd.
Castro Valley, CA

Proposal No. 9342
Scale: 1' = 30
Date: July, 1993

FIGURE 1

GEN TECH ENVIRONMENTAL, INC.
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GEN TECH ENVIRONMENTAL, INC.
DRILLING, SEALING WELL CONSTRUCTION AND SAMPLING PROTOCOL

Last Rev. 4/5/93

Exploratory Boring Drilling and Sealing

Exploratory boring and well construction, and borehole sealing procedures follow guidelines recommended by the USEPA, California Regional Water Quality Control Board, and modified as required by City, local or water district agencies. Drilling is performed only under approved permits and boreholes are sealed upon completion.

Soil Sampling Procedures

1. Drive (or hydraulically push) soil sampling will commence at a depth of 5 feet below surface grade. The samples will be taken at 5 foot increments and at intervals of geologic interest or obvious contamination. Additional sampling and/or continuous coring may be done at the discretion of the supervising geologist. All logging will be done using the Unified Soil Classification System, together with pertinent geologic observations.

2. Soil sampling tools (split spoons, cores, etc.) will be disassembled, steam-cleaned or cleaned in soapy (TSP) water, rinsed with clean tap water and finally rinsed with or distilled water, and air-dried prior to taking each sample. The cleaned tools will then be reassembled with similarly cleaned, dry brass sample liners and carefully lowered into the hollow stem augers for the collection of the next sample. The drill rig will be decontaminated as needed and at the discretion of the logging geologist.

3. When sampling stockpile soils or during excavations, the soil sample will be collected by the following procedure; a clean brass liner will be pushed into the stockpile or soil in the excavator bucket. About two inches of soil will be brushed away and the liner pushed into the soil. The liner is then removed, sealed, labeled and logged onto chain-of-custody forms and packed in a chilled ice chest.

4. The soil samples in the lowermost of brass liners in the sampling tool (if in good condition) will be retained for chemical testing. The samples will be labeled and sealed in the field in their original liners. Sample liners ends will be sealed with aluminum foil, capped with clean cap plugs, and taped.

5. The remaining soil sample will be extruded from the other rings in the field and lithologically logged. Sampler shoe cuttings, drill rig response and bit penetration rate will also be logged. The cuttings and the soils samples not retained for chemical analysis will be placed in 55-gallon drums pending chemical analysis and off-site disposal.

6. All samples retained for chemical analysis will be stored on ice in a clean, covered cooler-box for transport to the Laboratory.

Reconnaissance Groundwater Sampling Procedures

1. Reconnaissance groundwater sample, handling, and storage will follow guidance documents of the Environmental Protection Agency and Regional Water Quality Control Board and local agency guidelines for the investigation.

2. Reconnaissance groundwater samples will be collected in the field in temporarily cased exploratory boreholes using clean Teflon or disposal bailers. The samples will be collected from temporarily cased exploratory boreholes. All sample containers will be properly prepared, sealed, labeled, and identified. Label information will include the date, sampler name, sampling time, and identification number, and the project name and number.

3. The sample will be delivered to a State Certified Laboratory within two days of collection. Samples will be kept on ice and/or refrigerated continuously for shipment to the Laboratory.

4. The sealed sample will only be opened by Laboratory personnel who will perform the chemical analysis.

5. The samples will be analyzed according to the approved EPA Method and storage for the requested analysis.

6. Groundwater sampling will begin 24 hours following well development, following the procedures detailed below for monitoring well sampling. Depth to water measurements are made to the nearest 0.01 foot a surveyed datum (project or known) and wells are checked for separate phase product. Boreholes are sealed following water sampling.

GTE Protocol

Monitoring Well Construction

1. The proper permits will be obtained from the appropriate agency or Water District, using a Well Inspector as required to be present to witness the installation of the annular seal. The soils borings will be drilled with a continuous-flight hollow-stem auger of at least 3 inches Inside Diameter (ID) and 6 to 8 inches Outside Diameter (OD). All augers will be thoroughly steam-cleaned prior to visiting the site. The augers will be steamed cleaned between borings at a location well away from the proposed borings or adequate clean auger will be available to complete all of the wells without reusing auger sections.

2. A geologic drilling log will be made of the materials encountered and sample depth for each boring. The soils/sediment lithology will be logged using the Unified Soil Classification System. The log will include field descriptions of the soil lithologic variations, moisture conditions, geologic data, and any unusual characteristics which may indicate the presence of chemical contamination.

3. The borings will be advanced to a depth of 45 feet if a saturated zone is not encountered (in absence of other depth specifications). If a saturated zone is encountered, the boring will advance no further than 15 feet below first encountered groundwater or 5 feet into the underlying clay aquitard. A seal will be placed in the overdrilled portion of the aquitard.

4. During the drilling operations, 55-gallon drums will be on site to contain potentially contaminated soils and rinse water.

5. Where borings are completed as groundwater monitoring wells, 2-inch ID schedule 40 PVC blank pipe will be used. Usual well screen selection will be 2 inch ID Schedule 40 PVC pipe with 0.020 inch machine slot. Sections will be threaded and screwed together; glues will not be used. Screens will extend 3-5 feet above first encountered groundwater. The annulus of the perforated section will be packed with clean #3 or #4 Monterey Sand, or equivalent, to a point about 2-feet above the screen interval. Final well design will be adjusted in the field to site specific subsurface conditions, and will be placed so as not to interconnect two possible aquifers. Screens will extend a nominal length above first encountered groundwater for floating product detection. A 1-2 foot thick bentonite seal will be placed on top of the sandpack. A cement annular seal which extends to the surface will be placed by tremie line from the bottom to top of the remaining annular space above the bentonite.

6. The top of the well casing will be locked to prevent contamination and tampering. Above-grade or at-grade well completion will depend upon the final well location. Above-grade completion will require a 6 inch diameter locking, steel protective casing and a Christy, or equivalent, traffic box and concrete pad.

Monitoring Well Development

1. Wells will be developed until the water is free of fine-grained sediments and/or until field measurements of pH, and electrical conductivity have stabilized. Approximately 4 to 10 well volumes of water will be removed during development of the well. Duration of development will be specific for each well and continue until the water clears and sand content is minimal or ceases.

2. Equipment inserted into the well during development will be decontaminated by washing or steam cleaning prior to and after its use. Development water will be collected in drums.

Monitoring Well Sampling

1. Depth to groundwater will be measured to the nearest 0.01 foot, and the well checked for presence of separate phase product. If present, the apparent thickness of the product will be measured. The well will not be sampled if separate phase product is present.

2. The standing well volume calculated, and 4 to 10 well volumes will be purged from the well prior to sampling. Measurements of conductivity, temperature and the pH of the water will be taken until parameters have stabilized to indicate that aquifer water is entering the well.

3. The groundwater samples will be collected using a Teflon Bailer. A field log will record sampling measurements and observations. Aquifer parameters which will be measured are; pH, temperature and electrical conductivity. Aquifer water is assumed to be entering the well when these parameters are measured within a 10% range. The sample will be collected when the well recovers to within 80% of the original depth to water measurement.

4. The bailer will be thoroughly steam-cleaned or cleaned with soapy (TSP) water, rinsed with tap water, and finally rinsed with deionized or distilled water prior to the collection of each sample. A separate clean bailer will be used to sample each individual well.

5. All water retained for chemical analysis will be placed in clean, borosilicate, 40ml VOA vial with a teflon cap, or clean amber glass one-liter bottles and other sample containers as appropriate for water sampling purpose and test parameters. Each sample vial or bottle is topped-off to avoid air space, and will be inverted to check for air bubbles, and filled to minimum headspace. Samples will be placed on ice, blue ice, or refrigerated at 4 degrees Centigrade at all times.

6. Water samples blanks of distilled water will be poured through the sampling bailer and placed in clean sample collection bottles or vials. One water sample blank will be taken for each set of water samples collected from each boring or well.

7. All sampling equipment will be decontaminated following each sampling event, prior to use the next monitoring well.

Sample Records and Chain of Custody

1. Sample records for each sample will contain information on sample type and source; Gen-Tech Environmental project number, sampler name, sampling date, location, Laboratory name, sampling method, and any significant conditions that may affect the sampling.

2. A signature Chain-of-custody and transference documentation will be strictly maintained at all times.

3. A copy of the Laboratory sample results and the completed Chain of Custody will be provided with the technical report.

Quality Control and Quality Assurance Objectives

The sampling and analysis procedures employed by GTE for groundwater sampling and monitoring follow quality assurance and quality control (QA/QC) guidelines set out in Federal, State and local agencies guidance. Quality assurance objectives have been established to develop and implement procedures for obtaining and evaluating water quality and field data in an accurate, precise and complete manner. In this way, sampling procedures and field measurements provide information that is comparable and representative of actual field conditions. Quality control is maintained by site specific field protocols and requiring the analytical laboratory to preform internal and external QC checks. The goal is to provide data that are accurate, precise, complete comparable and representative.

The definitions as developed by overseeing federal, state, and local agency guidance documents for accuracy, precision, completeness, comparability and representativeness are:

- **Accuracy** - the degree of agreement of a measurement with an accepted reference or true value.

- **Precision** - a measure of agreement among individual measurements under similar conditions. Usually expressed in terms of standard deviation.

- **Completeness** - the amount of valid data obtained from a measurement system compared to the amount that was expected to meet the project data goals.

- **Comparability** - express the confidence with which one data set can be compared to another.

- **Representativeness** - a sample or group of samples that reflect the characteristics of the media at the sampling point. It also includes how well the sampling point represents the actual parameter variations which are under study.