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July 11, 1999

Mr. Don Hwang, Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Ste. 250
Alameda, CA 94502-6577
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Quality Control Plan for Soil Sampling:
Bolin's Service Garage, 6335 San Pablo Avenue, Oakland, CA -Stid 1685

RE: Ten year Follow-Up to the Approved Closure Which Took Place 4/11/88 & 5/23/88

Dear Mr. Hwang:

As per your request and pursuant to Title 23, CCR, Section 2722 (c), the following quality control plan is presented to satisfy your request dated April 2, 1999, for the above referenced closed site:

1. Statement of Scope of Work:

Two previously removed UST's (removed and closure secured in 1988) at 6335 San Pablo Avenue contained gasoline. One a 550 gallon tank, the other a 1000 gallon tank. Each were properly inserted, removed and the metal recycled. The soils originally

collected at the former locations, were analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G). **Additional analyses will be performed. These include benzene, toluene, ethyl benzene, xylene (BTEX), lead, and methyl-tert-butyl ether (MTBE).**

Pursuant to Title 23, CCR, Section 2722© the additional reports, sampling procedures, field methodology and laboratory analysis will be provided.

1. Beneath The Two Former Tank Sites:

At each of the two former tank sites, two soil samples will be collected from the locations, beneath where the tanks were originally bedded. This will produce 4-soil samples to be analyzed as per the above additional profile.

2. Beneath the Product Piping from The Former Tank Sites to the Former Dispensers:

Beneath every 20-feet of original product piping that extended from the tanks to the dispensers one sample will be collected. Therefore, at site #1, since the original piping was greater than 20-feet but less than 30-feet, two samples will be collected in the soil lens that is found beneath the piping. At site #2, the underground piping run was less than 10-feet, therefore, one soil sample will be collected.

3. Beneath the Two Product Dispensers:

Beneath each of the two product dispensers one soil sample will be collected and analyzed pulled from the soil lens that is found in the subsurface soil layer below the original location of the dispensers.

4. Groundwater Sample Within 10-feet of Site #2:

Due to the >2,400 ppm TPH-G that was found and removed under permit and manifest at site #2, a groundwater sample will be pulled within 10-feet downgradient of this site. An 8-inch diameter augured hole will extend to 4-feet below the original base of the former tank, a depth of approximately 14-feet. A two inch diameter schedule 40 well screen, fully perforated will be placed the full length of the boring. An 8-inch diameter round concrete box with concrete lid will be used for capping and access. After 24-hours a water sample will be collected in a sanitized glass beaker, sealed, visually characterized for coloration, sheen, and particulate contents, and immediately refrigerated and transported to the analytical laboratory for analysis within the 24-hour period.

The groundwater sample will be analyzed for benzene, toluene, ethyl benzene, xylene, (BTEX), lead, and methyl- tert-butyl ether. EPA analytical laboratory analysis methods to be employed are EPA 8020 [BTEX}, and EPA 7420 [lead].

The downgradient groundwater sampling well, will remain until laboratory tests reveal the characterization of the groundwater. Upon approval from the County, the well site will be permanently capped by filling with clean sand and grouting at the surface.

2. Site Location:

The site is the former repair shop formerly known as Bolin's Service Garage> Mr. Bolin was in the business of repairing vehicles. The former shop is located at the corner of San Pablo Avenue and 64th Street in North Oakland, near the Berkeley and Emeryville borders. The former business is accessed through 64th Street.

3. Background and Site History:

The owner operated a repair shop for 30-years, and the property has been in the family for at least this period of time. No other record of business activities is found, and the site is thought to have been largely vacant prior to the establishment of Mr. Bolin's business. The service garage had two UST's for gasoline, one a 550 gallon tank nearest the shop structure, and a second one located adjacent to a driveway. The owner had both tanks removed in 1988. The sale of gasoline was not part of the business services offered at Bolin's garage and the tanks were lightly used.

Upon removal and sampling >2,400 ppm TPH-G was found in soil sample hole #2 below the 1,000 gallon tank adjacent to the driveway. All contaminated soils were removed and transported to an approved landfill under manifest. Site closure was granted.

4. Site Description:

The immediate site is adjacent to a printing shop and a concrete saw cutting company. The site is bordered by San Pablo Avenue, 64th Street and to the west, Marshall Street. **[See the attached map.]** The map indicates where the original tanks were found, where the dispensers were located and where the piping to the dispensers were installed. One tank is within the general repair area, the other in a parking area for a neighboring business. As the latter is a full time operation, sampling in the second location will likely be performed on a Saturday to minimize disruption of the tenants business activity. All of these items were removed under permit, manifest, and the site received closure status from the County of Alameda Environmental Health

Services in 1988.

Noted on the map is a sewer line, that will be avoided during the sampling.

Since one water sample in requested within 10-feet down gradient of the one tank where contaminated soil was found, under permit excavated, and under manifest properly removed in 1988, the location of the monitoring well is noted on the drawing.

Other than the existing sewers, no known subsurface conduits or underground utilities are found in the areas where soil sampling will take place. We note that the site is flat and level, and much of it is paved with asphalt or concrete. Currently, the site is unused, as the owner has retired his business and only occasionally visits the shop. No structures from the original petroleum tanks are found.

5. Purpose of this Sampling:

The primary purpose of the soil sampling is a 10-year follow up with additional testing and analysis now required for benzene, toluene, ethyl benzene, xylene (BTEX), lead, and methyl-tert-butyl ether (MTBE). The original analysis was for Total Petroleum Hydrocarbons as Gasoline (TPH-G). Therefore, additional soil borings of the native soil must be collected for analyzed for the additional contaminants.

To our knowledge, there is no evidence of any existing subsurface soil contamination related to the old buried tanks, as the tanks, appurtenant product piping and dispensers, and all contaminated soil was fully removed in 1988, under manifest and permit.

The samples beneath the former tank sites should be to 8-feet below grade where the 550 gallon gasoline tank near the repair shop was located, 11-ft 8-inches [-+] below grade where the 1,000 gallon gasoline tank in the parking area was located, with 4-foot deep samples for piping and dispensers. We believe the depth of grade to groundwater will be less than 16-feet, and we do not expect groundwater to be found except in the area where a sixteen foot test well will be drilled. This will be located within 10-feet downgradient from the site where formerly soil contamination was found and removed.

6. Field Sampling Methodology:

The following quality control plan for field sampling methodology will be utilized to generate the samples required by the Environmental Health Services Department.

.1 Equipment: A hydraulically driven 8-inch diameter hollow stem full flight auger will be mounted to a hydraulic motor powered by a New Holland 51-horsepower Yanmar Diesel Engine. This work will be performed by Bay Area Structural, Inc. Of Oakland, California, a licensed General Engineering and Hazardous Materials Removal and Remediation Contractor licensed by the State of California to perform such work.

.2 Quality Control/Site Manager for Sampling: All samples will be collected under the supervision of David Benaroya Helfant, Ph.D., M.ASCE, who will serve as Quality Control Manager for the sampling. Dr. Helfant is formerly trained in Quality Control by the Army Corps of Engineers, and the United States Navy. Dr. Helfant has nearly 17-years of similar work in which has served as chief quality control officer and site safety officer on many environmentally sensitive investigation and clean-up projects, most notably the successful clean-up of the Navy's Monterey Presidio Fueling Facility, adjacent to a federally designated superfund site. He will provide monitoring and oversight for all activities required in the sampling requested based on the requirements of the Health Services Department of the County of Alameda.

.3 Characterization and Logging of Soil Samples: During the process of drilling for soils samples, the Quality Manager will visually observe, characterize and log soil spoils in 3-foot intervals. Visual analysis and sniff tests will performed ongoingly throughout the soil drilling process. At elevations below the former tank sites, product piping, and dispensers the samples will be The sampling locations are noted on the attached site plan. In order to diminish the possibility of cross-contamination, all augers will be steam cleaned prior to being brought to the site, and cleaned after each sample hole is completed. The locations of the samples will follow the recommendations of the County Health Environmental Services Department, such that two samples will be taken beneath each of the two former tank sites, and one sample will be pulled beneath each 10-foot length of underground piping. One sample will be pulled under each former location of two dispensers, and one ground water sampling well will be installed within 10-feet down gradient from tank # 2, where some soil contamination was previously found and removed.

The groundwater sampling well will be augured with an 8-inch hollow stem auger. A two-inch fully perforated well screen will be placed in the angered well hole, and it will be used to pull samples for laboratory analysis. Water samples will be placed in sterilized and refrigerated clear glass beakers, and brought in a refrigerated container, along with all soil samples, to the certified analytical lab within 24 hours of the sampling procedure. The water sampling well will be enclosed with a concrete 8-inch diameter Christy box and removable lid for future sampling, or for backfilling upon completion of lab analysis. Lids will be installed over the holes sampled beneath tanks

and piping and dispensers, so that upon completion of the laboratory analysis, those may be either reopened and reused, or backfilled with clean native material.

6. Quality Control Organizational Plan

.1 Quality Control Organization and Personnel: Chief Quality Control Officer David Benaroya Helfant, Ph.D., M.ASCE, also a Principal of SEISCO Engineering and Inspections, a full member of the American Society of Civil Engineers, and special inspector for the International Conference of Building Officials. Dr. Helfant is also formally trained in quality control through the Army Corps of Engineers. He has performed numerous responsibilities as chief quality control officer over the last 15 years. Dr. Helfant's resume and work experience regarding quality control and environmental issues is found attached in this plan.

Assisting Helfant in quality control management will be Alternate Assistant Quality Control Manager, Hugo Giron. Mr. Giron has served on numerous environmental hazardous materials removal and remediation projects over the last 10-years, and is fully certified under requirement 29 CFR 1910.120, CCR Title 8, 519 , has additionally received the 40-hour hazardous workers training and First Aid and CPR, as well as the 8-hour follow-ups. [Please see company profile experience for related projects.]

The chain of command, therefore, flows from the County health and Environmental Services Agency to Owner to the Quality Control Officer to the crew drilling foreman and to the laborers, though Quality Control is lateral to the Owner to maintain scientific neutrality. Helfant will be on-site during the preparatory, initial and follow-up stages of the work.

.2 Drilling will be performed by Bay Area Structural, Inc., Oakland, California. Actively working in a broad range of environmental, civil and structural projects, the company is licensed in 4-areas and certified by the State Contractors License Board in General Engineering, Hazardous Materials Removal and Remediation, Demolition and Structure Moving, and General Building. It maintains an active and vigorously enforced quality control, health, environmental and safety program.

.3 Three Phase Structure to Quality Control: Bay Area Structural employs the three-phase quality control plan as strategy and requirement developed by the Department of the Navy and utilized by all of the military defense departments, as well as the Army Corps of Engineers. The three-phase quality control structure includes a

.1 preparatory phase in which the key members of the quality control and sampling plan visit the site, discuss the requirements from the County, and mark the

areas wherein sampling will be taken. An

.2 **initial stage** is the actual stage of sampling, in which the requirements for sampling and sampling methodology are carefully monitored to follow the requirements in the quality control plan.

.3 A **follow-up** stage is also part of the quality control program, and incorporates a review of the work at completion and the disposition of the sampling and sampling holes and wells after sampling has been completed. The site will then be secured and ready for final closure upon completion of the analysis and presentation to the County Environmental Health Services Department.

7. **Certified Analytical Laboratory:** All samples will be analyzed by a fully certified analytical lab, under direction by Dr. Arestoo Khodai, Ph.D., laboratory director at the Nachtmann Analytical Laboratory, a Federal and State Certified Analytical laboratory in 1979.

Backfill will be postponed until sampling results have been fully logged, analyzed, received and reviewed by the County Health Services Department.

Upon completion of the sampling and analysis, a formal report, including the results, will be forwarded to Mr. Don Hwang of the Alameda County Environmental and Health Services Division for review.

8. **Attachments:**

.1 Personnel Qualifications: Quality Control Manager
.2 Contractor Experience Profile
.3 Site Map and Sampling Locations. Monitoring Well Section
.4 Typical Chain of Custody Report Form Sample

Solicitation Number: N62474-96-R-6085
Taxpayer Identification Number: 94-2821166

PERSONNEL EXPERIENCE FORM : QC MANAGER : SAMPLING

Name: David Benaroya Helfant Job Title: Construction Manager

Proposed Project Title: Quality Control Manager/Project Safety Manager

Years Experience with Proposing Firm: 15
Years Experience with Other Firms: 10

Education (Degrees, year, specialization)
Post Doctorate., 1983, Architect/Engineering, U.C. Berkeley.
Ph.D., 1977, Field & Quantitative Methodology, Community Development.
M.A., Philosophy and the Social Sciences, 1972
B.S., Industrial and Labor Relations, 1969

Active Registration
(year first registered & discipline)
1995, American Society of Civil Engineers-Full member
1987, Profession member, International Conference of Building Officials
California State Licenses: A-General Engineering, 1986; B-General Building, 1983; Hazardous Substance Removal and Remedial Action License, 1987; C-21, License Demolition Contractor

Health & Safety Training
40-Hour OSHA Hazardous Waste Operations Training (29 CFR 1910.120)
Annual 8-hour refresher, Hazardous Waste Operations
8-hour Hazardous Waste Operations Supervisor Training
CPR and Standard First Aid, current
CAL-OSHA Competent Person Designation, 1993

Experience and Qualifications:
Fifteen years as projects quality control manager for general engineering, building and environmental remediation projects. Certified as Construction Quality Control Manager through Army Corps of Engineers. Since 1992, worked as Quality Control Manager on several remediation projects for the Navy . With approval from ROICC also served as Health and Safety Manager. Chief program quality control and safety officer for all projects at Bay Area Structural, Inc. Previously, researcher at the Center for Environmental Design research, U. C. Berkeley. Personal holder of all state contracting licenses to engage in hazardous substance removal and remedial actions, general engineering and general building. Holds California State contractors license for demolition. Seventeen years direct experience in the civil engineering field as construction and quality control manager, project engineer, construction engineer, and structural designer.

"1. Factor 2(c) Please clarify the depth of experience in environmental construction an construction management for the following key personnel:"

Quality Control Manager: David Benaroya Helfant, ASCE

David Benaroya Helfant, during his nearly 20-years of experience as construction and quality control manager in the general engineering and environmental fields, has been personally responsible for:

1. Underground fuel storage tank removals, soil remediation and site closures.
2. Pipeline cleaning, removals, and replacements (fuel, water, sewer, gas)
3. Waste oil tank removals, soil remediation and storage system replacements.
4. Liquid natural gas tank decommissioning, pipeline removal and replacements.
5. Military facility demolition, lead contamination containment and removal.
6. Asbestos removal.
7. Mercury and PCB clean-up and removal.
8. Bacterial and infectious waste containment and removal.
9. Arsenic laden soil removal strategy.
10. Quality control: 7-mile settling basin-erosion and flood control

These environmental remediation projects have incorporated a host of technologies including:

1. Encapsulation
2. Contamination location and mapping.
3. Vacuuming, flushing, rinsing.
4. Excavation, blending, aeration, desorption, compaction.
5. Groundwater monitoring, sampling, dewatering.
6. Cofferdam design and construction.
7. Sludge profiling, waste concentration reduction.
8. Overexcavation, curtain wall enclosure, bentonite slurry walls, leak detection

The chemicals included in the above referenced projects included:

1. Total petroleum hydrocarbons (TPH)
2. Asbestos
3. Bacteria and medical waste
4. Benzene, toluene, total xylenes.
5. Lead
6. Mercury
7. Ethylbenzene
8. Nickel and chromium

U.S. ARMY CORPS OF ENGINEERS

TRAINING CENTER FOR PROFESSIONAL DEVELOPMENT
HUNTSVILLE, ALABAMA

CERTIFICATE

this is to certify that

David Benaroya Helfant

has completed the Corps of Engineers Training Course

CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS

Given at Sacramento, CA (LOCATION) November 19-20, 1996 (DATE)

Expires November 20, 2001
Verification (916) 557-7773

Director of CE Training Management

D. A. DENNIS
Chief, C-O Division, Sacramento District

CEHND FORM 586 (REVISED)
1 JULY 93

NAME:

ADDRESS:

PHONE:

PROJECT:

SAMPLER (signature):

ACAL SAMPLE NO.	COLLECTED Date/Time	SAMPLE IDENTIFICATION	NO. of Containers	ANALYSIS	REMARKS/ SAMPLE CONDITION ON RECEIPT

Relinquished by (signature): Date/Time | Received by (signature):

Relinquished by (signature): Date/Time | Received by (signature):

REMARKS

Relinquished by (signature): Date/Time | Received by (signature):

Received in Laboratory by (signature): Date/Time

FAX NO.

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