

## ARTESIAN ENVIRONMENTAL

September 15, 1998



Mr Robert Weston  
County of Alameda, Environmental Protection  
1131 Harbor Bay Parkway, Rm. 250  
Alameda, CA 94502-6700

**Re: Tank Removal and Soil Remediation Workplan**  
Est. 2,400 Gallon Fuel Oil Underground Tank  
Albany School High School Site  
603 Key Route Blvd.  
Albany, California  
Proposal #: 98-08-037-378

Dear Mr. Weston:

Artesian Environmental (Artesian) is pleased to present this workplan to perform a tank removal of at least one 2,400 gallon fuel oil underground storage tank and a soil remediation / over-excavation project at the above mentioned site. Artesian Environmental is licensed by the state as a well driller and general engineering contractor certified for hazardous waste and asbestos removal (A, B, C-57, Asb, Haz: #624461).

To ensure prompt and professional project completion, the project will be supervised on-site by a scientist or engineer under the direct supervision of a certified hydrogeologist. A detailed tank removal report certified by a registered geologist will be prepared documenting site activities. As required by Federal and State law, all field employees have the appropriate OSHA safety training and medical monitoring as described in 29 CFR 1910.120. Artesian's employees are protected by Worker's Compensation Insurance through the State Fund as required by applicable state law.

#### **SITE BACKGROUND**

During grading and school construction activities on August 30, 1998 at the subject property by Vila Construction, discovered an underground tank that had been marked on an early school architectural blueprint. The top of the tank was exposed to verify that the tank was present. Artesian was retained by Vila Construction to remove the underground tank and remediate impacted soils. Oversized site maps have been included with the permit application.

#### **PROCEDURES**

The following procedures for underground storage tank removal describe planning, field and post-field activities:

#### **PLANNING ACTIVITIES**

- 1) Obtaining notification and permits as needed, (including Permit Fees, Environmental Health and Fire Department), Public Works, BAAQMD, others) and notification of appropriate regulatory authorities.
- 2) Preparing Site Safety Plan
- 3) Notifying Underground Service Alert prior to excavation.
- 4) Arranging transportation and disposal of the tank and piping

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### **GENERAL FIELD ACTIVITIES LIST**

- 1) The scope of work assumes the tank is approximately 2,400 gallon capacity;
- 2) Inerting the tank with 15 pounds of dry ice per 1,000 gallon capacity;
- 3) Removing the tank and disposing of the tank as hazardous waste;
- 4) Obtaining soil and groundwater samples for certified analysis;
- 5) Backfill excavation with imported fill and compact, if needed, equal to removed tank volume;
- 6) Securing the area with fencing, if needed;

### **POST FIELD ACTIVITIES**

- 1) Analyze laboratory data
- 2) Prepare report of methods and findings, certified by a registered geologist

The above scope of work includes the supervision of the field work by a competent person, all personal protective equipment, safety plan, other equipment, sampling supplies and plastic sheeting. The soil and groundwater samples will be analyzed according to the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites (10 August 1990) laboratory test methodology.

### **DETAILED SCOPE OF WORK**

A. Artesian will provide tank removal notifications, workplans, safety plans, permits and letters of intent to the appropriate Air Quality Control District, the local Fire Department, and the Environmental Health Division of the County Health Department, and the State of California.

B. Artesian will advise Underground Services Alert (USA) that an excavation is planned. USA will have the utilities marked on public areas in the tank vicinity.

C. Artesian will monitor the Lower Explosive Limit (LEL) with a vapor measuring device.

D. Artesian will displace combustible vapors prior to removal of the tank by inserting approximately 15 lbs. of pelletized solid carbon dioxide (dry ice) into the tank for each 1,000 gallons capacity. The tank will be removed after levels are below 10 parts per million (ppm) or less than 15% oxygen, according to the local Fire Department guidelines. A city and/or county inspector will be on-site to monitor activities.

E. Artesian will obtain the necessary EPA Generator ID number as required for the transportation and disposal of all waste material accumulated during the cleaning and removal of the tank.

F. All waste material, including the tank, shall be handled and transported in accordance with Chapter 6.5, Division 20 of the Health and Safety Code and Title 22 of the California Administrative Code

G. Artesian will remove an underground storage tank and load for transport to a State Licensed Transport, Storage and Disposal (T.S.D.) Facility

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H. Artesian will store visually stained soils between plastic sheeting pending laboratory analysis. The number of laboratory analyses of the soil stockpile will be charged on a time and materials basis.

I. Artesian will collect the following samples:

- Two soil samples will be collected approximately 2 feet below the base of the tank, approximately 10-12 feet below ground surface.

- Four soil samples will be collected from each of the walls of the excavation. These samples will be collected approximately 7 feet below grade.

- Four point soils samples will be collected in the soil stockpile per every 100 cubic yards and composited in the laboratory.

- If groundwater is encountered in the excavation, one groundwater sample will be collected.

J. Artesian will arrange for State Certified Laboratory Analysis of required samples. Please note: the samples will be analyzed using a 5 day turn around, unless otherwise noted. Analyses includes; total petroleum hydrocarbons as diesel (TPH-d) by modified EPA Method 8015 and benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020.

K. This work will be performed according to all applicable Federal, State and Local regulations.

L. Artesian will provide a written report stamped by a registered geologist or engineer with the documentation of the field work, Polaroid photographs, laboratory analysis and conclusions. If laboratory analysis of the samples are below detection limits, then there would probably not be additional work on the property unless it is required by a State or Local agency.

**SOIL REMEDIATION ACTIVITIES**

The soil will be screened and segregated in the field based on staining and discoloration. In addition, Artesian will use a photo-ionization detector (PID) to detect the more volatile portion of the diesel. Artesian will document the soil removal process with field reports and photographs. After the removal of soil having obvious staining, odor or detectable levels of organic vapors as detected on a PID, confirmatory soil samples in the walls (4) and floor of the excavation will be selected. Additional samples will be selected on the recommendation of the project scientist or engineer and regulator. All sampling will be performed with a backhoe according to Standard Operating Procedures in the Attachments.

The site will be secured with a four-foot high fence. Soil stock piles will lie on and be covered with visqueen to prevent any escape of soil vapors. The soil pile areas will be constructed with a berm so as not to allow rain water run-off. Soil piles will be sampled with pre-cleaned stainless tubes, 6 inches long and 1.5 inches in diameter. Once the soil

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*Not required in absence of GWS in excavation or other indicators.*

sample is removed from the excavation, one sample will be collected for each 100 cubic yards of material. It is estimated that 4 soil samples will be collected and composited into one sample in the laboratory.

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Based on the planned redevelopment of the property, schedule of activities and estimated volume and concentration levels of the excavated soils, transportation and disposal at a licensed landfill appears to be the favored disposal option. The soil containing hydrocarbons will be transported by a licensed transporter under manifest procedures to the appropriate licensed landfill after the laboratory results are available. After obtaining regulatory agency approval, clean backfill will be placed in the excavation by others. The backfill will be brought up to grade.

### SCHEDULE

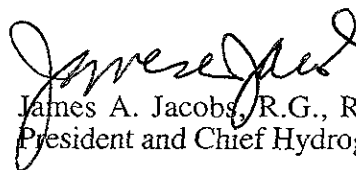
All work contemplated in this workplan will be completed within 20 working days from the date of commencement, providing there are no delays for obtaining permits.

Please call Artesian at (510) 307-9943 if you have any questions.

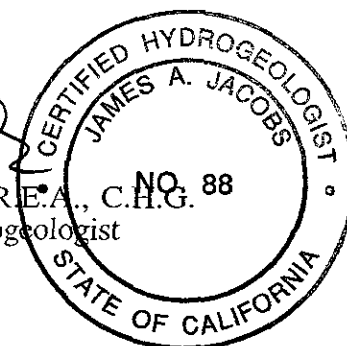
Sincerely,



David Dell'Osso  
Project Manager



James A. Jacobs, R.G., R.E.A., C.H.G.  
President and Chief Hydrogeologist



cc: Mr. Richard Vila  
Vila Construction  
590 S. 33rd St.  
Richmond, CA 94804

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## **ATTACHMENTS**

## Artesian Environmental Consultants

### Standard Operating Procedures

#### SOIL EXCAVATION AND SAMPLING

Excavated soil is screened and segregated in the field using a vapor analyzing device such as a photo-ionization detector (PID) or organic vapor analyzer (OVA). Documentation of soil removal activities include field reports and photographs. After the removal of soil having obvious staining, odor or detectable levels of organic vapors as detected on a PID or OVA, confirmatory soil samples in the walls and floor of the excavation will be selected at least every 20 feet laterally. Additional samples will be selected on the recommendation of the geologist and regulator. All sampling will be performed with a backhoe.

Soil samples for chemical analysis are collected in pre-cleaned, thin-walled tubes, typically 6-inches long and 2-inches in the outside diameter. After removing the top 2-inches of soil, the sample tube is pushed or driven with a wooden mallet into the native soil near the teeth of the backhoe bucket. The brass tube is immediately capped on both ends with Teflon tape, trimmed and hermetically sealed with plastic end caps. The samples are then labeled and placed in individual see-through zip-lock plastic storage bags. The samples are stored in an ice chest with crushed ice to maintain a constant temperature of 4 ° Celsius. A thermometer is kept in the ice chest to ensure that the proper temperature is maintained. The samples are then delivered under chain-of-custody procedures to a state-certified hazardous materials testing laboratory. The above mentioned procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOCs) prior to chemical analysis.

Artesian Environmental

Standard Operating Procedures

### COLLECTING ORGANIC VAPOR DATA FROM SOIL SAMPLES

Soil samples from drill cuttings, soil piles or tank excavations are placed with minimal disturbance into pre-cleaned standard soil sample collection jars. The jars are filled to approximately one half full. The soil samples are broken up to provided sufficient surface area to allow for volatilization. Aluminum foil is placed over the mouth of the jar. The jar mouth is then capped with the lid.

The jars are then placed out of direct sunlight and allowed to sit undisturbed for a minimum of twenty minutes; allowing time for the air in the headspace and soil to equilibrate.

An organic vapor analyzer (OVA) or photoionization detector (PID) is to be calibrated and the batteries checked prior to each use. After the headspace within the sample jar and soil vapor has equilibrated, the probe of the organic vapor analyzer or photoionization detector should be inserted into the jar, puncturing the aluminum foil. The presence of any organic vapor detected should be measured and recorded in parts per million (ppm).

The samples used for collecting organic vapor data are never submitted for analytical testing.

# UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488

MAJOR DIVISIONS		SYMBOL / GRAPHIC	DESCRIPTIONS
COARSE GRAINED SOILS (>50% by weight larger than #200 sieve)	GRAVEL AND GRAVELLY SOILS (more than 50% of coarse fraction is larger than the # 4 sieve)	Clean Gravels (little or no fines)	GW  Well Graded Gravels, Gravels - Sand Mixtures
		Gravels With Fines (appreciable amount of fines)	GP  Poorly Graded Gravels, Gravel - Sand Mixtures
			GM  Silty Gravels, Gravel - Sand - Silt Mixtures
			GC  Clayey Gravels, Gravel - Sand - Clay Mixtures
	SAND AND SANDY SOIL (more than 50% of coarse fraction is smaller than the #4 sieve)	Clean Sands (little or no fines)	SW  Well Graded Sands, Gravelly Sands
			SP  Poorly Graded Sands, Gravelly Sands
		Sands With Fines (appreciable amount of fines)	SM  Silty Sands, Poorly Graded Sand - Silt Mixures
			SC  Clayey Sands, Poorly Graded Sand - Clay Mixures
FINE GRAINED SOILS (>50% smaller than #200 sieve)	SILTS AND CLAYS (liquid limit less than 50)	ML  Inorganic Silts and Very Fine Sands, Silty or Clayey Fine Sands	
		CL  Inorganic Clays of Low to Medium Plasticity; Gravelly, Sandy or Silty Clays; Lean Clays	
		OL  Organic Silts and Organic Silty Clays of Low Plasticity	
	SILTS AND CLAYS (liquid limit greater than 50)	MH  Inorganic Silts, Micaceous or Diatomaceous Fine Sand or Silty Soils, Elastic Silts	
		CH  Inorganic Clays of High Plasticity, Fat Clays	
		OH  Organic Clays of Medium to High Plasticity, Organic Silts	
		HIGHLY ORGANIC SOILS	



Indicates First Water



Indicates Static Water



Indicates Analyzed Sample

bgs

below ground surface

PID

Photo-ionization detector readings



Asphalt



Concrete



Cement Grout