

June 18, 1998

Ms. Jo Ann Stewart
General Manager
Good Chevrolet
1630 Park Street
Alameda, California 94501

**Subject: Work Plan For Preliminary Remedial Risk Assessment for
Good Chevrolet, 1630 Park Street, Alameda, CA**

Dear Ms. Stewart:

Geo Plexus, Incorporated is pleased to present this Work Plan to perform a Preliminary Remedial Risk Assessment for the subject property which would include advancing three (3) gas collection probes at the site to obtain soil gas measurements within and exterior to the existing building, collection of ground water samples form the existing monitoring wells, and performing a Tier-II ASTM Risk-Based Corrective Action (RBCA) assessment for the project site.

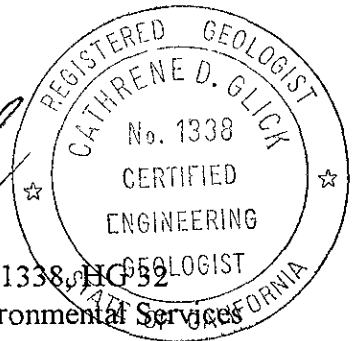
One copy of this Work Plan has been forwarded to:

Ms. Eva Chu
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

It has been a pleasure to be of service to you on this project. Questions or comments regarding the attached Work Plan should be addressed to the undersigned.

Respectfully submitted,
Geo Plexus, Incorporated

Cathrene Diane Glick
Cathrene Diane Glick, CEG 1338, HG 52
Director, Geologic and Environmental Services



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ENVIRONMENTAL
PROTECTION
AGENCY

**WORK PLAN FOR
PRELIMINARY REMEDIAL RISK ASSESSMENT
FOR
GOOD CHEVROLET
1630 PARK STREET, ALAMEDA, CA**

Prepared for:

Good Chevrolet
1630 Park Street
Alameda, California 94501

June 18, 1998

**WORK PLAN FOR
PRELIMINARY REMEDIAL RISK ASSESSMENT
FOR
GOOD CHEVROLET
1630 PARK STREET, ALAMEDA, CA**

1.0 SITE DATA REVIEW

The project site is an automobile dealership and service center located at 1630 Park Street in the City of Alameda, in Alameda County, California as indicated on Figure 1.

A 300 gallon waste oil storage tank and a 500 gallon underground gasoline storage tank were reportedly removed from the property by Petroleum Engineering, Inc. in October, 1986. A subsurface investigation including installation of three ground water monitoring wells (see Figure 2) was performed by Groundwater Technology, Inc. in January, 1987 (Groundwater Technology, Inc. Report Dated April 29, 1987).

The three monitoring wells have been monitored to evaluate the ground water conditions and to establish the direction(s) of ground water flow at the project site. The monitoring determined that the direction of flow beneath the site varies from a northwesterly direction to a northeasterly direction throughout the year. The quarterly sampling has also detected Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds at various concentrations throughout the year.

A supplemental investigation was performed by Geo Plexus which included advancing 7 soil borings across the parking area of the property. This investigation identified high concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylene) in the immediate vicinity of the former underground storage tanks at depths of 5-12 feet below the ground surface. The borings identified concentrations of Total Petroleum Hydrocarbons as gasoline as high as 15,000 parts per million (ppm) decreasing to 1,000 ppm within 30-feet from the former tanks (lateral direction) and decreasing to 1,800 ppm at the down-gradient property boundary.

Two additional ground water monitoring wells were installed by Geo Plexus in April, 1994 to further characterize the down-gradient water conditions. The findings of the initial ground water samples indicated a significant increase in concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds down-gradient of the property.

The ground water levels recorded to date reflect fluctuations ranging from 3 to 13 feet below the ground surface and indicate that ground water generally flows in a northwest direction.

A Remedial Investigation was performed by Geo Plexus in April, 1997 which included advancing eight (8) subsurface exploratory geo-probes at locations which were immediately "up-", "down", and "cross-gradient" from the former underground storage tanks. Grab ground water samples were also obtained from the probes for analytical testing. The findings of the investigation indicated that gasoline contaminated soil remain in-place at the project site and is confined to depths ranging from 7- to 11-feet below the ground surface and is of limited extent.

The concentrations of Benzene in the soil exceed the ASTM RBCA Tier-1 RBSL's for contaminant leaching to ground water and gas migration to indoor air. Similarly, the concentrations of Benzene in the ground water exceed the Tier-1 RBSL's for ground water ingestion and gas migration to indoor air; however, the concentrations are below the Tier-1 RBSL's for gas migration to outdoor air. It was concluded that the site conditions did not warrant active ground water remediation.

2.0 PROPOSED SCOPE OF INVESTIGATION

The scope of work for the current investigation action includes:

- (1) advancing three (3) gas collection probes at the site to obtain soil gas measurements within and exterior to the existing building;
- (2) collection of tedlar bag gas samples from each probe from depths of 3- and 8-feet;
- (3) performing analytical testing of the air bag samples for gasoline, volatile aromatic, and volatile organic compounds;
- (4) collection of ground water samples from the existing monitoring wells for analytical testing;
- (5) performing analytical testing of the ground water samples for gasoline, volatile aromatic, and volatile organic compounds;
- (6) performing a Tier-II ASTM Risk-Based Corrective Action (RBCA) assessment for the project site; and
- (7) preparation of a report presenting the findings of the investigation.

3.0 PROPOSED FIELD INVESTIGATION ACTIVITIES

3.1 GAS COLLECTION PROBES

Three (3) gas collection probes will be advanced at the locations indicated on Figure 3. The probes would be advanced using a portable pneumatic drive assembly. Drilling and sampling equipment used for advancing the exploratory probes would be thoroughly steam cleaned before drilling begins and between each boring to prevent the introduction of off-site contamination and cross contamination between borings.

Soil gas samples will be obtained at depths ranging from ~~3-~~^{only} and ~~8-~~ feet below the ground surface and would be immediately sealed in the tedlar bags and properly labeled including: the date, time, sample location (boring number and depth interval), and project number. The samples would be placed in a cooler maintained at 4°C with water ice immediately for transport to the laboratory under chain-of-custody documentation.

The probes would be grouted with a neat bentonite-cement slurry mixed at the project site.

No, do not put on ice Use Summa canisters

3.2 SOIL GAS ANALYTICAL TESTING

The air samples will be submitted to and tested by McCampbell Analytical, a State of California, Department of Health Services certified testing laboratory. Analytical testing would be scheduled and performed in accordance with the State of California and Alameda County protocols. The samples would be tested for:

- Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015;
- Volatile Aromatics (BTEX) and MTBE by EPA Method 8020; and
- Volatile Halocarbons by EPA Method 8010;

3.3 GROUND WATER MONITORING WELL SAMPLING

Free product measurements would be obtained utilizing a product/ground water interface probe or through the use of an acrylic or teflon bailer lowered into the well to obtain a surface water sample. Depth to water measurements would be also be recorded at this time using an electronic water level probe.

Prior to sampling the wells, a minimum of four well volumes would be purged from the well through the use of a positive displacement bladder pump or teflon bailer. Electrical conductivity, temperature, and pH of the ground water would be recorded throughout the purging process. The purging activities would continue until the electrical conductivity, temperature, and pH of the discharged water have stabilized. The water developed from the monitoring well would be contained on-site pending receipt of the laboratory test results. The samples would be placed on ice immediately for transport to the laboratory under chain-of-custody documentation.

3.4 GROUND WATER ANALYTICAL TESTING

The ground water samples will be submitted to and tested by McCampbell Analytical, a State of California, Department of Health Services certified testing laboratory. Analytical testing will be scheduled and performed in accordance with the State of California, Regional Water Quality Control Board, and Alameda County Department of Environmental Health guidelines. The samples will be tested for the following:

- Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015;
- Volatile Aromatics (BTEX) and MTBE by EPA Method 8020; and
- Volatile Halocarbons by EPA Method 8010;

4.0 REMEDIAL ACTION THRESHOLD CRITERIA

Various agencies have published criteria and guidelines related to investigation and remediation of soil and ground water contaminated with petroleum compounds. This section addresses the documents and guidelines which were considered applicable to the project site and addresses the technical approach used to develop evaluation criteria for the project site.

The following standards and/or guidelines were used to evaluate the known site conditions and to assist in determining the threshold limits:

- **State of California Leaking Underground Fuel Tank Field Manual**
This document provides regulatory agencies with guidelines in dealing with leaking fuel tank problems. The manual is intended to assist in assessing fuel leaks, by providing a framework for determining required investigation of sites and of cleanup levels, of screening sites, and for determining remedial actions. It provides general guidance, and is not a standard or specific guideline.
- **State of California Regional Water Quality Control Board Tri-Regional Guidelines**
These documents present recommendations for the initial investigation of Underground Storage Tank (UST) releases and tank removal processes. The reports describe fuel leak indicators, and present the requirements for site investigations (soil and ground water).
- **California Code of Regulations - Title 22**
Presents environmental health standards for the classification and management of hazardous waste. The document also establishes drinking water standards, waste treatment standards, and threshold limit concentrations for hazardous materials.
- **Resource Conservation and Recovery Act**
Provides framework for federal regulation of hazardous waste and controls the generations, transportation, treatment, storage, and disposal of hazardous waste. RCRA established the "cradle to grave" aspect of hazardous waste management and disposal.
- **ASTM E-1739-95 Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites**
Provides a decision making process for the assessment and response to subsurface (soil and ground water) contamination based on risk to human health and environmental resources. The Risk-Based Corrective Action (RBCA) process recognizes the variability in complexity, physical and chemical characteristics and risk to human health and environmental resources of sites and utilizes a tiered approach to match appropriate assessments and remedial activities in consideration of more cost-effective remedial action.
- **EPA SW846**
Provides sampling and analytical testing methodology for solid waste.
- **Federal OSHA and CAL OSHA guidelines**
Documents provide guidelines, standards, and regulations to protect workers from occupational hazards, including mandating training in various aspects of hazardous materials handling and exposure.

•NIOSH and ACGIH Threshold Limit Values

Documents present published information on health effects and standards or guidelines for protection of workers from exposure to various chemicals and compounds.

5.0 PROPOSED EVALUATION OF APPLICABLE CRITERIA

The principal guidance document applicable to estimating the human health and environmental risk of site contaminants is the ASTM Risk-Based Corrective Action (RBCA) document. The ASTM-RBCA document outlines general assessment criteria based on the risk of exposure to the contaminated soil (by off-gassing and/or direct contact), by the potential for contaminants to leach to the ground water, by off-gassing from ground water, and from ground water ingestion.

Although the Tri-Regional Guidelines and State of California Drinking Water Standards have been used a standard for petroleum hydrocarbon clean-up activities throughout the San Francisco Bay Area, the ASTM-RBCA criteria provide a conservative level of assurance that potential risks have been mitigated. Using the ASTM-RBCA approach, the following site conditions and assumptions will be used to assess the project site:

- (1) the project site is a commercial/industrial land use site and is surrounded by commercial and industrial properties;
- (2) the site is planned for continued commercial/industrial use and is not anticipated to be developed in the future for residential use;
- (3) ground water is at a depth of 3- to 13-feet below the ground surface;
- (4) the existing soil contamination does not extend beneath the existing building;
- (5) the ground water contaminant plume is located beneath paved open space areas and does not extend beneath the existing building; and
- (6) domestic ground water wells do not exist within 500-feet from the property.

Based on the above factors, use of a commercial cancer risk of 1×10^{-5} as outlined in the ASTM-RBCA document is considered to be conservative and applicable for the development of petroleum related evaluation levels for the project site. The risk-based analysis will require establishing Tier-II Evaluation Risk-Based Screening Levels (RBSL) for contaminants of concern.

To assess the potential health risk of the project site, a Tier II Risk Based Corrective Action analysis will be performed in accordance with the procedures presented in ASTM E 1739-95 using a commercially available, automated process known as "Tier 2 RBCA Tool Kit" published by Groundwater Services, Inc. using a "commercial" health risk of 1×10^{-5} as established and included the petroleum constituents known to be present.

6.0 REPORT

A report will be prepared to include a summary of the field investigation activities, to present the results of the analytical testing, and to present the Tier II ASTM RBCA analysis.

7.0 SCHEDULE

We anticipate that Alameda County will take from 1- to 3-weeks to review this Work Plan and we could mobilize for this project within two weeks of your approval and authorization to proceed and notice from the drilling contractor of the available drilling schedule following regulatory approval.

The subsurface exploration could be initiated within three weeks following notice of Agency review/approval of the Work Plan and Permits and is expected to be completed in 1-day.

We anticipate that the laboratory testing would be completed within two weeks following the investigation and that the RBCA evaluation and site characterization report would be completed within four weeks following receipt of the analytical test data.

Respectfully submitted,

Geo Plexus, Incorporated



GOOD CHEVROLET		
DATE	SCALE	DRAWN BY
10-9-92	1"=2000'	dgc
LOCATION MAP		
		Figure 1

ARROW INDICATES DIRECTION OF TRAFFIC FLOW

CENTER LINE

PARKING LANE

SIDEWALK

SIDEWALK

GOOD CHEVROLET SHOWROOM

WINNER FORD

APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

- ⊕ Monitoring Wells
- Borings Previous Studies
- ⊙ Borings Previous Study 1/97

GeoPlexus, Inc.

GOOD CHEVROLET		
DATE	SCALE 1"=20'	DRAWN BY dgc
		Figure 2

ARROW INDICATES DIRECTION OF TRAFFIC FLOW

CENTER LINE

PARKING LANE

SIDEWALK

SIDEWALK

GOOD CHEVROLET SHOWROOM

WINNER FORD

APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

GP PROPOSED GAS PROBES

- ⊕ Monitoring Wells
- Borings Previous Studies
- ⊙ Borings Previous Study 1/97

GeoPlexus, Inc.

GOOD CHEVROLET		
DATE	SCALE 1"=20'	DRAWN BY dcg
		Figure 3