SCOPE OF WORK
PHASE I & II
GROUND WATER SAMPLING AND WELL INSTALLATION
FOR
Mr. FRED HOUSTON
AMERICAN CITY TRUCK STOP
3060 HOUSTON PLACE
DUBLIN, CALIFORNIA
CQ-90-018

This work plan presents the proposed Scope of Work to conduct a supplemental site investigation of subsurface contamination and a remedial planning study for the former American City Truck Stop located at 3060 Houston Place in Dublin, California. The Scope of work herein was based on the results of the preliminary site investigation work completed to date to determine the extent of hydrocarbon contamination in the subsurface soil and ground water.

The intent of this investigation is to :

1) obtain additional information to conduct the 5-step investigation process as required by the RWQCB,
2) define the nature and extent of ground water contamination, and
3) develop an appropriate, and cost-effective, course of action for remediation.

BACKGROUND

Following the removal of four underground storage tanks (UST's) at the site, a preliminary assessment of subsurface contamination was undertaken in September 1989. Analysis of soil and ground water samples collected from the tank excavation area indicated the presence of detectable concentrations of petroleum hydrocarbons.

To determine the extent of subsurface contamination, three ground water monitoring wells were installed in September 1989. Ground water was encountered at a depth of about 11 feet and the flow direction was determined to be towards the south/southeast. Hydrocarbons were detected at levels higher than the established State drinking water standards in all three wells. Hydrocarbon contamination of the subsurface soil was found to be limited to the subsurface zone above the shallow aquifer (capillary fringe).

SCOPE OF PROPOSED WORK

The proposed subsurface investigation will be conducted in accordance with the applicable regulations and guidelines of the Alameda County Department of Environmental Health (ACDEH) and the Regional Water Quality Control Board (RWQCB).

Each part of the proposed scope of work is described below.

Review of Available Information and Acquire Necessary Permits:

Collect and review available information and reports related to any past or ongoing subsurface investigation at the site and nearby sites to determine the nature of the hydrocarbon contamination at these sites and the potential relationship of these sources to the subject site. Prior to commencement with the supplemental investigation, all acquired permits will be obtained and field activities will be coordinated with the appropriate agencies. This will include locating underground utilities and interferences that may be encountered during drilling or field activities.

Initial Ground Water Monitoring and Sampling:

Since the last ground water sampling event was conducted in December 1989, samples will be collected and analyzed for the specific constituents before initiating any investigation work. The results of this sampling round will also be used as part of the review of available information. The results of the monitoring of the ground water will be used to determine the hydrological parameters necessary for future remediation and investigation (i.e, flow direction and gradient).

Install Additional Ground Water Monitoring and/or Recovery Wells:

Based on the results of the above, we are proposing to install a minimum of one ground water monitoring well at the appropriate locations to verify or confirm the extent of the ground water contamination. The proposed wells will be constructed of 4-inch diameter pipe and perforation. The existing and/or proposed onsite 4-inch wells would be used as recovery wells, if necessary, depending on the results obtained from future studied (aquifer tests).

Wells will be drilled using a 10-inch CME 55 or 75 hollow stem auger in accordance with standard procedures and requirements of regulatory agencies. All necessary permits will be acquired for the wells before commencement with drilling activities. Ground penetrating radar (GPR) survey, geophysical methods, or standard applicable procedures to determine the location of underground utilities prior to drilling will be implemented.

During drilling, soil samples will be collected at 5-foot intervals beginning at 5 feet below grade and terminating at the capillary fringe of the first saturated zone encountered. Samples will be collected from the saturated zone for analysis of physical properties to determine aquifer characteristics. Soil samples will be collected through a split-spoon sampler lined with brass sleeves. The split-spoon sampler will be advanced in the subsurface by means of 140-lb hammer having a 30-inch free fall distance, where blow counts per foot will be recorded. The samples recovered for chemical analysis will be sealed airtight with teflon tape and plastic caps, then placed immediately in a cooler with ice.

Each ground water monitoring well will be completed to a depth of 20 feet below the top of the first saturated zone encountered. Each well will be constructed of clean, 4-inch diameter, schedule 40 PVC pipe with 0.020-inch perforations, and the required gravel pack packs and seal.

Well design and construction will be in accordance with the ACDEH and RWQCB guidelines. The top of each well shall be secured with locking caps and christy boxes finished flush with the ground surface.

Develop, Sample, and Survey Monitoring Wells:

The additional monitoring wells will be properly developed, monitored, and sampled, in accordance with the ACDEH and RWQCB guidelines. Water samples will be collected form each well and placed in sterile containers for transportation to a State-certified laboratory for analysis.

Analyze Soil and Ground Water Samples:

Soil and ground water samples will be transported to a State-certified laboratory for analysis following proper chain of custody procedures.

Soil samples will be analysed for Total Petroleum Hydrocarbons (TPH) as gasoline and diesel with benzene, toluene, ethylbenzene, and xylene (BTEX), and total oil and grease (TOG) by appropriate EPA and DOHS methods.

Ground water samples will be analysed for TPH as gasoline and diesel with BTEX and TOG using the appropriate EPA and DOHS methods. All samples will be analysed on a standard two week turnaround time.

Analyze Data and Laboratory Results:

Upon completion of the sample analysis and background research, a detailed evaluation of results and available information will be conducted to determine the extent of and nature of subsurface contamination following the 5-step investigative process of RWQCB. This will include:

- Interpretation of geologic and hydrogeologic information and analysis of aquifer characteristics.
- Preparation of ground water level contour maps, geologic cross sections, and hydrocarbon concentration maps.
- Definition of hydrocarbon contamination plume.
- Assessment of potential short- and long-term impacts of contamination and the beneficial uses of ground and subsurface water.
- Development of appropriate remediation plan, including interim measures to minimize potential environmental impact.

The appropriate course of action will be developed based on evaluation of technical, economical, environmental, and legal factors. Either one or both of the following strategies will be considered:

1) Conduct further site characterization and monitoring to adequately define the nature and extent of subsurface contamination.
2) Conduct a feasibility study and develop a remedial plan.

Prepare Report:

A report presenting the findings, conclusions, and recommendations will be prepared and submitted to the appropriate regulatory agencies. The format of the report will follow the 5-step investigative process and the suggested outline of the RWQCB.

Winning Action Investment Company will be responsible for the proper transportation and disposal of drill cuttings, spoil, well development materials, and well purge water. NSI will assist with the proper storage and labelling of waste materials generated during the drilling and sampling operations.

A Site-Specific Safety Plan will be developed for this project which will cover all field procedures and activities related to the site investigation work. The Site Safety Plan (SSP) will be in compliance with applicable requirements of the California Department of Health Services and the Federal and State Occupational Safety and Health Administration (OSHA and Cal-OSHA).