aqua science engineers inc.

August 31, 1998

WORKPLAN
for a
SOIL AND GROUNDWATER ASSESSMENT
at
Oliver Rubber Company Plant I
1200 65th Street
Oakland, California

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
2411 Old Crow Canyon Road, #4
San Ramon, CA 94583
(925) 820-9391

INTRODUCTION

This submittal outlines Aqua Science Engineers, Inc. (ASE's) workplan for a soil and groundwater assessment at Oliver Rubber Company's (OLIVER) Plant I facility located at 1200 65th Street in Oakland, California (Figure 1). The proposed site assessment activities have been designed to investigate for the presence of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in soil and groundwater beneath the site building. This issue was raised during a meeting conducted on August 26, 1998 between Ms. Susan Hugo of the Alameda County Health Care Services Agency (ACHCSA), Mr. Tom Palmer of Standard Products, Mr. Dave Kuhre of OLIVER, and Mr. David Allen of ASE. This meeting was conducted to identify and determine the remaining issues at the site, if any, that required further assessment prior to gaining a No Further Action Letter from the ACHCSA that would enable the ACHCSA to allow the site to be developed for residential usage.

BACKGROUND INFORMATION

The site has been used since the 1950's primarily as a rubber tire tread manufacturing plant. Virgin materials were combined and processed using various mixing machines, milling machines, and conveyors. The rubber product was then either extruded into strip form or molded into tire treads at Oliver's Plant II across Vallejo Street. The entire floor of the production area is reportedly a minimum of 12-inches thick. In areas surrounding large milling machines, the concrete is reportedly up to 24 to 36-inches thick. The milling machines and conveyor system sat on pedestals above shallow concrete pits. A cooling water system was incorporated within the production area to keep the machines operating at controlled temperatures. This cooling water was then recycled and reused. Chemicals were added to the cooling water to reduce the levels of scaling in the cooling tower, to reduce algae, and to control the pH.

The compound of interest used during the production of the rubber for tire treads is a heavy petroleum hydrocarbon, much like liquid tar at elevated temperatures. The product most commonly used by Oliver was RAFFEX 120. The RAFFEX 120 was stored outside the plant in a subgrade concrete vault, which was heated with steam to maintain the liquid consistency of the product. The RAFFEX was then pumped inside the building to the process area. Zinc Stearate was also used during the extrusion of the rubber product to inhibit the product from adhering to itself as it was stacked onto pallets. Various lubricating oils and greases were used in the milling and mixing machines. Spent lubricating oils and greases were

drummed, profiled, and shipped off-site for recycling. Safety solvent cleaning stations were used at the facility during maintenance activities.

Beginning in January 1998 and completed during the week of March 16, 1998, the plant was decommissioned and cleaned by Mid-American Machine, Inc. and DECON Environmental Services, respectively. All plant manufacturing equipment was removed and either shipped to various Oliver plants on the east coast or scrapped as metal salvage. Pressure washing liquids used to clean the building were collected and disposed of off-site. The scope of work for this plant closure was discussed and agreed upon by members of Oliver staff and Mr. Amir Gholami of the Alameda County Health Care Services Agency (ACHCSA) during his visit to the plant on November 20, 1997.

As the decommissioning and cleaning processes were taking place, ASE was on-site to inspect for potential integrity failures in the concrete floor and pits. Pits without obvious cracks were filled with concrete. Pits that had exit pipes or cracks near the edges of the pit were earmarked for future assessment activities to be conducted adjacent to the pits.

In April 1998, nine (9) soil borings were drilled inside the building to depths ranging from 2.5-feet below ground surface (bgs) to 6-feet bgs. Selected soil samples were analyzed for RAFFEX, oil & grease (O&G), and zinc. Low levels of RAFFEX were identified in the soil samples ranging from 3.1 parts per million (ppm) to 40 ppm. 260 ppm O&G was identified in one soil boring; O&G was not detected in the remaining borings at concentrations greater than the detection limit. 18 ppm zinc was identified in the only soil boring for which zinc was analyzed. Three (3) soil borings were drilled outside the building in respect to the former RAFFEX tank vault. One of these borings (BH-10) was drilled to 3-feet bgs near the piping manifold; only 7.5 ppm RAFFEX was identified in this soil sample. The other two borings were drilled outside approximately 8-feet west (downgradient) of the former vault (BH-11 & BH-12), near the railroad tracks/spurs. These borings were drilled to a total depth of approximately 12-feet bgs in order to collect grab groundwater samples. Soil samples collected from these two borings contained 74 ppm and 20 ppm RAFFEX. The grab groundwater samples contained 1.2 ppm and 4.6 ppm RAFFEX in the water. Complete details of the pit inspections and sampling activities conducted in April 1998 can be found in the ASE report titled "Report of Soil and Groundwater Assessment, ASE Job No. 3231", dated April 30, 1998.

In July 1998, ASE drilled five soil borings in the railroad tracks/spur area downgradient of the former RAFFEX tank vault. The only VOC concentration detected in the soil during this assessment was 0.0076 ppm 1,1-dichloroethene in the soil sample collected from 15.5-feet bgs in boring BH-14. No SVOCs were detected in any of the soil samples analyzed. Only very low concentrations of VOCs, below California Department of Toxic Substances Control (DTSC) maximum contaminant levels (MCLs) for drinking water, were detected in the groundwater samples collected during this assessment. The highest phenol concentration was 11 ppb which exceeded the DTSC recommended action level of 5 ppb. However, the DTSC MCL is based on an odor and taste threshold in chlorinated tap water systems, not risk to human health. The US EPA health advisory concentration for phenol in drinking water is 4,000 ppb, which is well above the highest concentration of phenol detected.

PROPOSED SCOPE OF WORK (SOW)

OLIVER, ASE, and the ACHCSA reviewed detailed architectural drawings for a proposed Live-Work residential development at the subject site on August 26, 1998. The drawings were supplied by a potential buyer of the property. Due to the potential for a modification in the use of the property, from industrial to residential, Ms. Susan Hugo requested the following additional assessment activities within the building on site in order to assess the potential for exposure of contaminated soil and or groundwater by future construction workers and residents on the property. The boring locations proposed for this assessment have been strategically placed to (a) assess the area beneath the proposed "reflecting pool" as detailed in the potential buyer's drawings, (b) an area near the former RAFFEX tank vault, and (c) in areas where proposed support columns will be installed for the future live-work building. Based on the afore-mentioned information, ASE's proposed SOW is as follows:

1) Obtain a subsurface drilling permit from the Alameda County Public Works Agency (ACPWA).

2) Using a Geoprobe hydraulic sampling rig, drill four (4) 12-feet deep soil borings at the site, one inside the building near the location of the proposed reflecting pool, one outside in the future parking lot near the former RAFFEX tank vault, and two inside the building in approximate areas of footings (see Figure 2). Collect soil and groundwater samples from the borings for analysis.

3) Analyze one soil and one groundwater sample from each soil boring at a CAL-EPA certified environmental laboratory VOCs by EPA Method 8240 and SVOCs by EPA Method 8270.

4) Backfill the borings with neat cement.

5) Prepare a report detailing the methods and findings of the assessment activities. The report will include tabulated analytical results, drawings, and recommendations for remediation as necessary.

Selected details of the assessment are presented below.

TASK 1 - OBTAIN NECESSARY PERMITS

ASE will obtain a drilling permit from the ACPWA. ASE will also notify Underground Service Alert (USA) to have underground utility lines marked in the site vicinity.

TASK 2 - DRILL SOIL BORINGS AT THE SITE AND COLLECT SOIL AND GROUNDWATER SAMPLES FROM THE BORINGS

ASE will drill four (4) soil borings on-site at the locations shown on Figure 2. The borings will be drilled using a Geoprobe or similar type drill rig. The drilling will be directed by a qualified ASE geologist. Undisturbed soil samples will be collected continuously for subsurface hydrogeologic description and possible chemical analysis. The samples will be described by the ASE geologist according to the Unified Soil Classification System. The samples will be collected in brass or acetate tubes using a drive sampler advanced ahead of the boring as the boring progresses. Each sample will be immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, secured with duct tape, labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples will be placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-EPA certified analytical laboratory.

Soil from the remaining tubes not sealed for analysis will be removed for hydrogeologic description and will be screened for volatile compounds with an organic vapor meter (OVM). The soil will be screened by emptying soil from one of the tubes into a plastic bag. The bag will be sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons have been allowed to volatilize, the OVM will measure the vapor through a

small hole, punched in the bag. These OVM readings will be used as a screening tool only since these procedures are not as rigorous as those used in an analytical laboratory.

A groundwater sample will also be collected from the borings. Drilling will be halted at the water table and a Powerpunch or similar type device will be utilized to collect groundwater samples from the borings. The groundwater samples will be contained in (a) 40-ml volatile organic analysis (VOA) vials without headspace, and preserved with hydrochloric acid, and (b) 1-liter amber bottles. All samples will be labeled with the site location, sample designation, date and time the samples were collected, and the initials of the person collecting the samples. The samples will then be cooled in an ice chest with wet ice for transport to a state-certified analytical laboratory under chain-of-custody.

All sampling equipment will be cleaned in buckets with brushes and a TSP or Alconox solution, then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums for future disposal by the client.

TASK 3 - ANALYZE THE SOIL AND GROUNDWATER SAMPLES

The soil sample selected for analysis will be based on evidence of contamination, such as odors, staining, or OVM readings. If no evidence of contamination exists, then the soil sample collected from just above the water table will be analyzed. Along with the afore-mentioned soil sample, one groundwater sample from each boring will be analyzed at a CAL-EPA certified environmental laboratory VOCs by EPA Method 8240 and SVOCs by EPA Method 8270.

TASK 4 - BACKFILL THE BORINGS WITH NEAT CEMENT

Following collection of the soil and groundwater samples, the boreholes will be backfilled with neat cement placed by tremie pipe.

TASK 5 - PREPARE A SUBSURFACE ASSESSMENT REPORT

ASE will prepare a report outlining the methods and findings of this assessment. The report will be submitted under the seal of state registered civil engineer or geologist. This report will include a summary of all work completed during this assessment including tabulated soil and groundwater analytical results, conclusions and recommendations. Copies of the analytical report and chain of custody will be included as appendices.

SCHEDULE

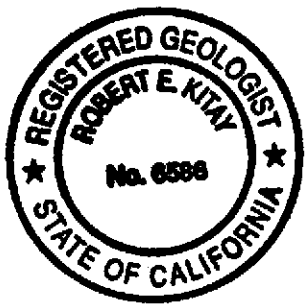
ASE plans to begin field activities immediately upon approval of this workplan by the ACHCSA. Drilling is tentatively scheduled for September 2, 1998.

Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

David Allen, R.E.A.
Senior Project Manager



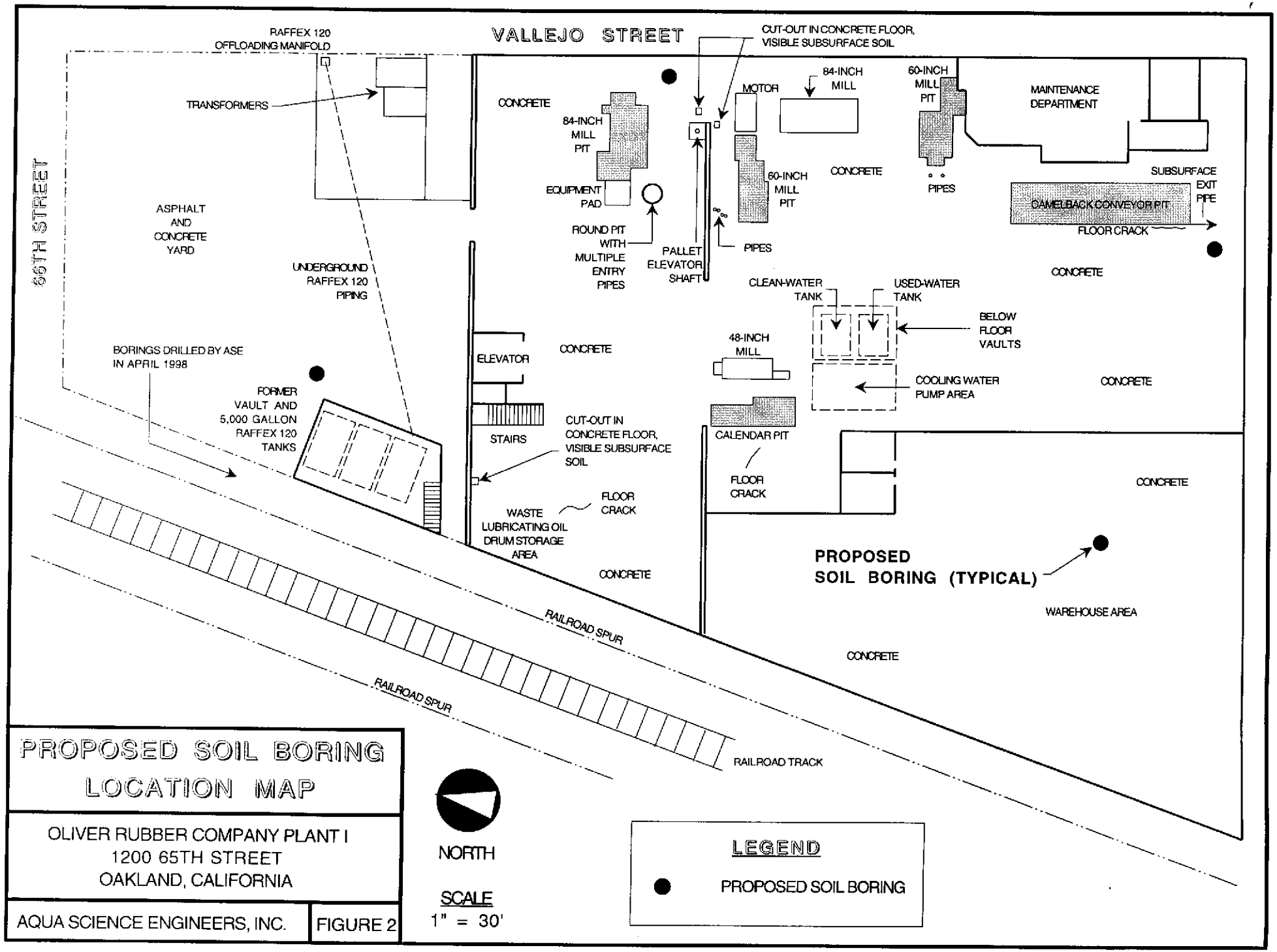
Robert E. Kitay, R.G., R.E.A.
Senior Geologist

cc: Ms. Susan Hugo, ACHCSA
Mr. Tom Palmer, Standard Products Company
Mr. David Kuhre, Oliver Rubber Company

SITE LOCATION MAP

OLIVER RUBBER COMPANY PLANT I
1200 65TH STREET
OAKLAND, CALIFORNIA

Aqua Science Engineers | Figure 1



PROPOSED SOIL BORING LOCATION MAP

OLIVER RUBBER COMPANY PLANT I
1200 65TH STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 2