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March 12, 1991

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Charles Lawler *President*
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Subject: **Contaminated Site Interim Report
and Technical Work Plan for Migration Control
4919 Tidewater Ave., Oakland, CA 94612**

94601

INTRODUCTION

During the removal of four underground fuel storage tanks from the DiSalvo Trucking property at the subject site in Oakland, CA, diesel fuel contaminated soil and ground water was encountered. A considerable quantity of floating free product was pumped out and removed from the excavation area directly following the removal of the underground tanks. Also removed contiguous to the excavation of the tanks was a system of hydrant lines networked between the truck loading docks and fuel pumping station. Specific data concerning the tank and hydrant line removals can be found in reports generated by Geo-Environmental Technology (GET) dated April 27, 1989 and June 15, 1989.

SITE HISTORY AND WORK PERFORMED TO DATE

Upon removal of the tanks, free product was discovered in the excavation areas. Samples collected from the excavation area revealed that the contaminate was diesel fuel. Approximately 20,000 gallons of free product and 20,000 gallons of water were pumped out of the tank pits by GET. This was followed by the excavation of approximately 1800 cubic yards of diesel contaminated soil. The contaminated soil was stockpiled on site and has henceforth been successfully biologically treated by GET. A report of this process can be found in a submittal by GET dated February 28, 1991. The decontaminated soil was used for fill material at the northern and eastern portions of the lot. Following the tank and hydrant removal, a subsurface investigation was conducted at the site by GET. This investigation involved installing 19 bore holes concentrating on the areas where the hydrant piping had been previously located. Results of this subsurface investigation can be found in a submittal by GET dated June 15, 1989. A product recovery sump/well was constructed and installed at the northwestern corner of the excavation area. This well was equipped with a skimming system designed to remove the floating hydrocarbon product from the water.

A product recovery pumping system was constructed by Clean Environment Engineers of Emeryville, CA and installed to handle the free product removal from the product recovery sump. This system was operational for a period of time from approximately April 1989 to August 1989 after which the system was shut down and has not since been employed. The reason that the system was discontinued is that the free product in excess of 10 to 12 inches had re-developed in the well area and the skimming system was not capable of handling this thick of a free product layer. Therefore, the system was discontinued until a more appropriate remediation system had been developed to deal with the thick floating layer. The excavation area was backfilled, compacted and resurfaced with asphalt pending further remedial action planning.

OVERVIEW AND CONCLUSIONS

It appears that as of this time, soils contaminated by diesel in the areas immediately below and surrounding the tanks have successfully been removed. Extremity samples revealed no contamination. Further site investigation revealed several additional areas or pockets of contamination that exist in the hydrant line areas extending between the tank pit and main building. According to tests performed by GET it is unlikely that the plume has migrated off site. We suspect however, that there is still a considerable amount of free diesel product in the immediate vicinity. We have developed a plan for the further removal of free product and continuing site investigation. This plan is presented here fore

PROPOSED MIGRATION CONTROL PLAN

The following represents a proposed plan of action for initial migration control and free product recovery from the subject site. Basically, the plan involves installing a series of trenches located in areas corresponding with concentrations of petroleum hydrocarbons. Please refer to the site map in Figure 2 for trench details and locations. It has earlier been determined that there is a predominate layer of bay mud common to the site which begins at a depth of approximately 5 to 6 feet and extends perhaps to a depth of 15 feet or greater. This bay mud has proven to be an effective barrier preventing vertical migration of this diesel product. The 24 inch wide trenches would be dug through the surface into the bay mud clay layer and graded sloping from the pockets of contamination to the central collection well - located near the center of the lot. We propose to excise and widen the main collection well and dig it down in depth to 10 to 15 feet into the saturated zone. Figure three depicts the well construction details and proposed installation.

The trenches then will provide effective channels for the diesel free product to run from the pockets of contamination - into the collection well where it can be recovered. We propose to backfill these trenches with drain rock material to permit free flowing of the contaminates through them. Base rock will be compacted to the surface and the top of the trenches resealed so that the trucking operation can continue their operation without interruption during the initial cleanup phases.

FREE PRODUCT REMOVAL

The initial phases of free product removal will involve a simple process of siphoning the free product layer into 55 gallon drums. The initial capture can be done without the necessity of creating a cone of depression in the collection well. We have calculated that a significant amount of free product still exists in these surrounding pockets. We are expecting a natural migration layer of up to 12 inches. This siphoning process will be employed until the floating product layer has been reduced to less than one-half of an inch. During the second phase of free product removal we would employ an automatic skimmer to further reduce the floating product layer. The automatic skimmer system proposed (and presently on site) is manufactured by Clean Environment Engineers and is capable of reducing the free product layer to downwards of an eighth of an inch. At this stage of product removal, we will begin creating a cone of depression in the collection well by pumping down the water from the base of the well. This depression will encourage additional free product to flow from the surrounding pockets of contamination into the recovery well. A split phase pump would be used to siphon the additional free product into waiting 55 gallon drums on site.

PRODUCT DISPOSAL

All free product collected on site will be disposed to a proper Class 1 facility or sent to a refinery for treatment. The diesel-tainted water will be processed through a biological degradation system. This system is designed to biologically degrade the diesel contaminates after which the cleaned water will be used for irrigation or other beneficial alternatives. Details of this system will be forwarded in a future TWP along with the necessary permit requirements and/or waiver requests.

MONITORING WELL INSTALLATIONS

We propose the installation of three ground water monitoring wells on site located as depicted on the site map Figure 2, attached.

These wells will be used to establish and verify the proper ground water gradient and to monitor potential off site migration of the contamination plumes. Well Number 1 will be located furthest down gradient between the DiSalvo property and adjacent P.G. & E. facility located to the east of the subject site. The other two wells will be located outside of the known contamination areas to depict the extremities of the plume.

Additional grab samples of the water will be taken in various areas corresponding with each of the "hot spots" as depicted on the site map. Samples will be taken quarterly, utilizing a backhoe to dig shallow wells into the ground water (less than 4 feet in depth). The samples would be tested for the presents of petroleum hydrocarbons as diesel and the results used to monitor the success of the migration control program.


DOCUMENTATION AND REPORTS

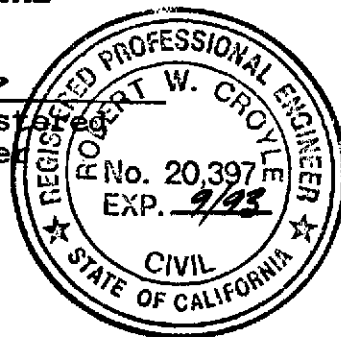
Quarterly reports will be written on the progress during each phase of the proposed plan and submitted to the Regional Water Quality Control Board and the Alameda County Department of Environmental Health. These reports will be generated by a certified professional, whose stamp will appear on all documentation. The reports will contain soil and water sampling results, disposal certification for the free product removal, water well gradient study information and other data pertinent to this project.

We respectfully submit this plan and proposal on this 12th day of March 1991 for your review and acceptance. Please contact me if I can be of any assistance or if you have any questions regarding this project.

Very truly yours,


Stuart G. Solomon, President
GEN-TECH ENVIRONMENTAL


Robert Croyle, Registered
Professional Engineer
No. 20397



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March 12, 1991

FIGURE 1

TRENCH CONSTRUCTION DETAIL

existing grade

ac paving

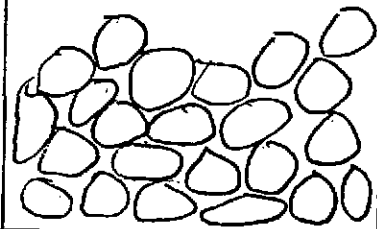
6"

class II base rock

12"

3" drain rock typical

varies



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SCALE:

APPROVED BY:

DRAWN BY **DBG**

DATE: **3-28-91**

REVISED

TRENCH DETAIL

4919 Tidewater Avenue Oakland, California

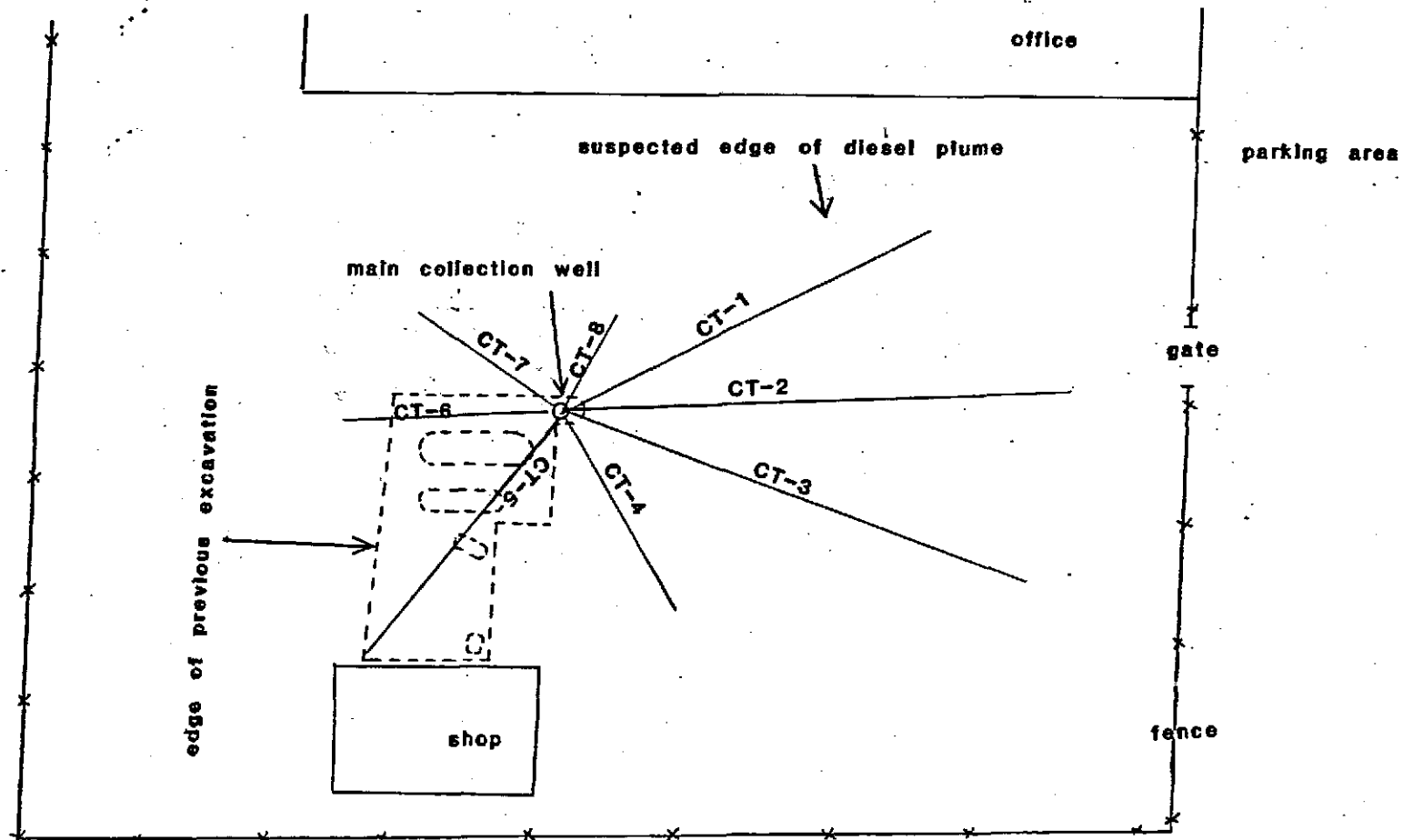
DRAWING NUMBER

TD-1

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FIGURE 2
SITE MAP DETAIL



edge of previous excavation

collection trenches will vary in length
 from approximately 30' to 130'
 with a slope of .02% per foot
 towards the collection well

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SCALE:	APPROVED BY:	DRAWN BY DBG
DATE: 3-28-91		REVISED

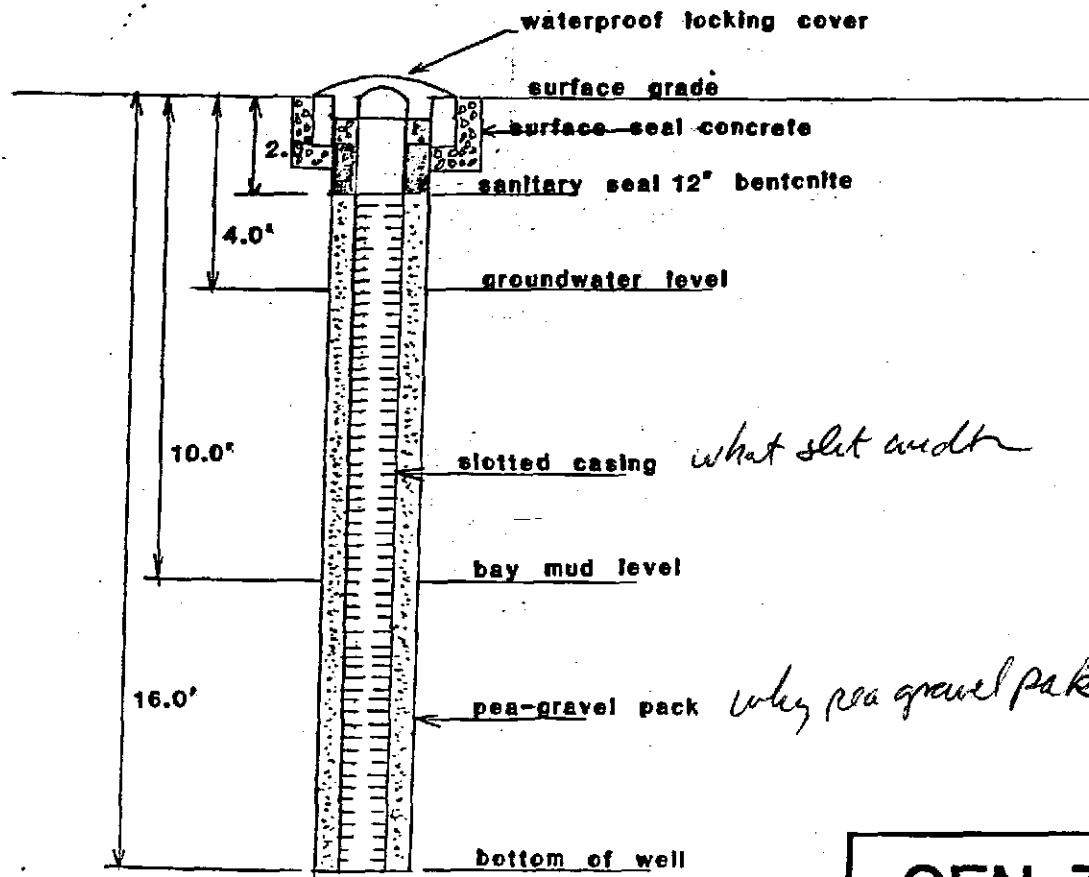
SITE and TRENCH PLAN

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FIGURE 3
WELL CONSTRUCTION DETAILS



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PRODUCT RECOVERY WELL

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