Workplan

CTTS, Inc.
toxic technology services

WORKPLAN FOR THE DELINEATION, CONTAINMENT AND REMEDIATION OF SOIL AND GROUNDWATER CONTAMINATION

19984 MEEKLAND AVENUE
HAYWARD, CALIFORNIA

Prepared For:

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SECTION 1 INTRODUCTION

The following is the proposed workplan for the delineation, containment, and remediation of soil and groundwater at 19984 Meekland Avenue in Alameda County near Hayward, California.

1.1 Scope Of Work

The purpose of this project is three fold:

1. Remediate on site contaminated soil,
2. Initiate a groundwater remediation program for contaminated groundwater located under the site,
3. Investigate the off-site groundwater contamination issue and make recommendations, if necessary, for further work.

1.2 Site Location

The subject site is located at the northeast corner of the intersection of Meekland Avenue and Blossom Way in the unincorporated area of Alameda County, near the City of Hayward (Plate 1).

1.3 Background

The subject site is currently owned by Durham Transportation. The corporate headquarters of this firm is located at:

Durham Transportation
9171 Capitol of Texas Highway North
Travis Building, Suite 200
Austin, Texas 78759

The Durham Transportation representative responsible for this project is Mr. David Delamotte, Senior Vice President, Facilities Fleet Services and Quality Systems.

The subject site has been investigated and routinely monitored since 1989. A great deal of information has been collected and reported to the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Materials Division. Throughout this document, reference will be made to previous reports where more detailed information can be obtained.

1.4 Site History

1.4.1 Business Activity Currently At The Site

The subject site is owned by Durham Transportation and is currently a vacant lot. On site operations ceased in 1989.

1.4.2 Previous Business Activity At The Site

According to Mr. Brad Austin, a long-time resident of the area who owns the adjacent property east of the subject site, the subject site was a family run service station in the 1940's. In the 1950's, a petroleum company built a larger station.

Alameda County Building Department files support Mr. Austin's information. Plate 2 is a site plan of how the subject site appeared in May of 1946. This plate is a re-creation of the County file map. It appears that the subject site was two parcels, with the house occupying the north side and the service station occupying the south side.

The County file also contained a site plan from 1954 describing a proposed service station. Plate 3 is a re-creation of this site plan. This proposed station was in fact the layout of the subject site as it existed until demolition in March 1990.

Harbert Transportation is believed to be the next owner of record. The property was used as a fueling and vehicle yard. Durham Transportation purchased the property from Harbert Transportation in 1986 using it as a fueling station and vehicle yard for buses. Durham Transportation shut down the yard in 1989.

1.4.3 Tank Activities, Tank Contents, and Tank Removal

1.4.3.1 Tank History

The station in 1946 (Plate 2) had two 1000 gallon fuel tanks located in the southwest region of the site. The contents of the tanks are unknown.

In the southeast region there was also an old lube rack which contained a sump. The County file contained a blueprint of the sump specifications, which indicated that it was a two-stage system.

The County file contained no information on the construction material of the tanks or the status of the original fuel tanks and sump from 1946.

The station in 1954 (Plate 3) had two fuel tanks; one 4,000 gallons in capacity the other 6,000 gallons in capacity. Both were constructed of single walled steel and were manifolded together. The typical contents of the tanks are unknown.

It was originally thought that tanks 1 & 2 (Plate 3) were installed in 1947, but in fact these tanks were installed in approximately 1954.

Tanks 1 and 2 remained in service until 1988. A third fuel tank (5000 gallon gasoline, single walled steel) was installed in 1972 and used until 1989.

During the time that the site was owned and operated by Harbert Transportation and Durham Transportation, the tanks were used exclusively for gasoline.

A waste oil tank (500 gallon, single walled steel) was located behind the service station building. This tank was removed in 1989, along with the three fuel tanks (Plate 3). The 1954 County site plan did not show a waste oil tank in this or any other location. The installation date of this tank is unknown.

1.4.3.2 Tank Removal

On August 9, 1989, the product lines to all four tanks were removed and the tops and sides of the tanks were exposed.

Tanks 1 & 2 were manifolded together. The unions on these tanks were loose. Upon opening the fill ports, no pressure was released from the tanks, nor was any visible product present. The pit walls around tank 1 were stained and colored green in some areas. A gasoline odor was present in the soil.

Tank 3 had a pressure release when opened and contained approximately 3 gallons of gasoline. The pit area around this tank had no visible staining.

The product lines to the three tanks were corroded. The tops of the three tanks had no visible holes, but had some corrosion.

The waste oil tank and the tank line were corroded. There was a distinct solvent odor near the tank, but there were no visible holes in the top of the tank or visible staining of the soil.

All four tanks were removed from the subject site on August 11, 1989.

The results of the tank inspection are as follows:

Tank 1 - Tank 1 had several holes, up to a 1/2" in size, near the base of the tank, at the fill pipe end. Other parts of the tank were corroded and locally deeply pitted. No other holes were observed. The excavation area of the tank had several areas of stained soil from both the side and base of the tank.

Tank 2 - Tank 2 was corroded and locally deeply pitted, especially along the welds. No holes were observed in the tank however. There were also areas of stained soil at the base of the excavation for tank 2.

Tank 3 - Tank 3 was in relatively good condition with minor corrosion. No evidence of significant soil staining was observed in the excavation for tank 3.

Tank 4 - Tank 4, the waste oil tank, was lightly rusted and had a small (approximately 1/4") hole near the bottom of the tank. Several additional holes were made during the tank removal, however, the tank was empty at the time. No evidence of soil staining was observed in the excavation from the waste oil tank.

1.4.4 Waste Removal

Under the ownership of Durham Transportation, any waste disposal attributable to activities at the subject site took place prior to 1989, which is beyond

the statutory file maintenance time of hazardous waste manifests. However, manifests for wastes removed from the subject site attributable to the tank removals and characterization of the site are presented under Appendix A.

1.4.5 Unauthorized Release Form

An Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report, dated November 11, 1989, was filed with Alameda County.

1.4.6 Previous Tank Testing Results

Tank tests were conducted on the three fuel tanks in April of 1988. The Horner "Ezy Chek" leak detection method was utilized. Data indicated that Tanks 1 & 2 had a leak in the piping. Tank 3 tested tight.

The report from Testing and Technology is presented as Appendix B.

1.4.7 Quantity Of Product Lost

It is unknown when product release began or how much product had been released prior to tank removal.

SECTION 2 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

2.1 Vicinity Description

The subject site is located at the northeast corner of the intersection of Meekland Avenue and Blossom Way in the unincorporated area of Alameda County, near the City of Hayward. The site is in a commercial area, surrounded by residential areas of both single family and multiple family complexes. At the four corners of the Meekland/Blossom intersection are the subject site, a liquor store, an auto repair shop, and a strip center with a grocery store, hair salon and comics/trading card shop. Both the liquor store and auto repair shop had operated at one time as gas stations. Fuel tanks have been removed from both locations. Plate 4 presents a one mile radius around the subject site. Plate 5 presents a vicinity map which includes businesses and residences around the subject site and locations of the wells associated with the subject site.

2.2 Hydrogeological Setting

The subject site is underlain by generally fine-grained alluvial fan and flood plain deposits derived from the hills located approximately two miles east of the site. The deposits are late Quaternary in age and overlie rock of the Franciscan Assemblage at an unknown but probably great depth.

Three to four feet of fill generally overlies the Quaternary deposits at the site. The fill consists primarily of a clayey to sandy gravel.

The native deposits underlying the fill consist of silty clay to clayey silt with minor and varying amounts of sand and gravel. Lenses of silty sand and gravel, approximately 3 to 4 inches thick, were encountered during well installations. No other significant bedding or stratification of the units was observed to the depth explored (40 to 45 feet) and the deposits are considered to be homogeneous for hydrologic considerations.

2.3 Site Map

Plate 1 presents the subject site as it currently exists. Included in this plate are the adjacent streets, tank excavation locations, and monitoring well locations. After repeated searches by USA, no underground utilities have been located.

Plate 3 presents the site as it appeared from 1954 to the time of demolition in 1990.

2.4 Soils Investigation

Soil conditions have been extensively investigated from the time of tank removal. The methods utilized include soil gas testing, visual inspection and sampling and analysis of soils from shallow trenches and soil borings installed as groundwater monitoring wells.

2.4.1 Tank Removal

Soil samples taken at the time of tank removal indicated that contamination exists at the bottom of the fuel tank excavation. Contamination is the most prevalent in the area where the manifolded tanks were situated. The highest levels of contaminates were found to be:

Gasoline	6178 ug/Gm
Benzene	12 ug/Gm
Ethylbenzene	67 ug/Gm
Toluene	83 ug/Gm
Xylenes	420 ug/Gm

Soil samples were collected from beneath each of the tanks. Two samples were collected from below the gasoline tanks, one from each end. One sample was collected from below the waste oil tank. Groundwater was not encountered in the excavations.

Samples were collected by excavating approximately two feet into native soil using a backhoe. A brass sample tube was driven into the soil brought up by the backhoe bucket. The sample tube was capped with teflon tap and plastic slip caps, labeled, and placed in an iced cooler for transportation, under chain of custody to a state certified hazardous waste laboratory for analysis.

The complete data report for the tank removal can be found in Toxic Technology Services Report 89-6 dated September 13, 1989.

The Phase II investigation that took place during 1990 consisted of soil gas testing, sampling and analysis of the on site wash rack sump, shallow test pits and the installation of five on site monitoring wells. The complete data report on the Phase II Characterization can be found as Toxic Technology Services Report 90-4 dated November 27, 1990.

2.4.2 Soil Gas Testing

NET Pacific, Inc., of Santa Rosa, California was contracted to perform soil gas testing as outlined in the workplan of April 6, 1990, which is on file with Alameda County. Testing was conducted from April 30, 1990 through May 3, 1990.

The soil gas results were used as a qualitative indicator of areas of contamination. Analyses requested were:

- Petroleum Hydrocarbons (gasoline) which was measured as Hexane,
- Volatile Halogenated Hydrocarbons by Method 8010
- Benzene, Toluene, Ethylbenzene and Xylenes by Method 8020

Samples were collected by pounding a 1 inch probe to the desired depth with a pneumatic hammer. The probe allowed for a sampling interval of up to 6 feet. A vacuum was drawn on each sampling hole and a soil vapor sample collected in an evacuated glass globe. Before the sampling probe was pulled out, the vapor

was monitored with a portable vapor analyzer. Samples were kept on ice until analysis.

Analysis was conducted on site via a mobile laboratory. The mobile lab is equipped with two gas chromatographs and three detectors; Flame Ionization Detector (FID), Hall Detector and a Photoionization Detector. Analytical standard curves and sample duplicates were run throughout the testing period.

After the sample was taken, each sampling hole was filled with concrete grout. A permit from Zone 7 was obtained for this work.

Plate 6 shows the soil gas testing locations. Volatile halogenated hydrocarbon levels were non-detected for all soil gas locations tested. Plate 6 also presents petroleum hydrocarbon values plotted for each location. Results indicate pockets of contamination, but give no clear-cut source or plume.

A complete analytical report from NET Pacific is presented as Appendix D of Progress Report #1, dated July 2, 1990.

2.4.3 Trenching Activities

On June 20, 1990, shallow exploratory trenching activities were conducted. This was prompted by additional information regarding the site. The 1946 site plan (Plate 2) shows a lube garage containing a sump in the southeast corner of the property and two 1000 gallon tanks in the southwest quadrant of the site.

Several unsuccessful attempts were made to get a soil gas sample in the southwest part of the site, where these tanks were located. At approximately six feet below grade, the probe struck an object or objects that were impenetrable. The decision was made to trench in this area.

Plate 7 shows the locations of the shallow trenches. No trench was greater than a depth of 5 feet. No staining or odor was detected from any of the trenches, so soils were put back in the respective trench.

Test Pit #1 was a 5 foot deep cut through the area where the old gasoline tanks were located as per the 1946 site plan (Plate 1). No tanks were located. The pit had been backfilled with construction debris presumably from the demolition of the original service station.

Test Pit #2 was a 5 foot deep cut in the southeast corner of the site. According to the 1946 site plans, this was the location of a lube garage which contained a two-stage, concrete sump. No sign of a sump was found in this trench.

Test Pit #3 was a 5 foot deep cut in the southeast corner of the site, approximately 5 feet south of Trench #2. In this trench was a concrete basin, thought to be one stage of the old two stage sump. A clay sewer pipe also ran north/south in this trench. The sewer pipe was dry and had not been used in some time. Attempts made to locate the other stage of the sump were

unsuccessful. It is assumed that it has been removed.

Test Pit #4 was a three foot deep cut on the west side of the concrete sump located on the north side of the property. This sump is from the service station built sometime after 1954. The purpose of this trench was to assess whether or not there are any lines leading from the sump to the west. No such lines were located. The soil in this area was composed of a top layer of fill, approximately a foot deep, the remainder being previously undisturbed native soil.

In summary, results from the shallow trenching activities indicate that the original gasoline tanks from 1946 had been removed and the pit filled with construction rubble. The original sump in the southeast corner of the site was found as evidenced by the concrete basin and the adjacent sewer pipe. This sump apparently was cleaned out and filled in with soil.

None of the areas trenched had odor or visible contamination.

On September 4, 1990, shallow trenches were excavated in specific locations on the subject site as per the amendment to the Phase II Plan (Plate 7). A minimum of one soil sample was taken from each trench. No significant contamination was found in any of the trenches.

Test Pits #5-#7 were excavated where the hydraulic lifts were located. The purpose of these excavations was to investigate shallow contamination from hydraulic oil. One sample from each trench was taken at the location of the bottom of the trench. No odor or staining was found in any of these trenches. Samples were analyzed for Total Oil and Grease, Total Petroleum Hydrocarbons as Diesel and Motor Oil and Stoddard Solvent. Data for Test Pits #5 and #6 were none detected. Data for Test Pit #7 are reported in Table 1.

Test Pit #8 was located through the waste oil sump that lead to the waste oil tank. At a depth of eight feet, a slight odor was detected. Samples were collected at depths of 2.5' and 8.0' and analyzed for Total Oil and Grease, Volatile Chlorinated Hydrocarbons, Total Petroleum Hydrocarbons as Gasoline, Diesel and Motor Oil, BTEX and Stoddard Solvent.

Test Pit #9 was on the east side of the washrack sump. The purpose of this trench was to investigate the outlet of the sump. The sump emptied into an old sewer line. There was no odor or staining detected. A soil sample was collected at 7.0' and analyzed for Total Petroleum Hydrocarbons as Gasoline, Diesel, Stoddard Solvent and BTEX.

Test Pit #10 was through the center of the waste oil tank excavation. The purpose of this trench was to confirm that this area is not a shallow source of contamination. A sample was taken at 7.5' and analyzed for Total Oil and Grease, Volatile Chlorinated Hydrocarbons, Total Petroleum Hydrocarbons as Gasoline, Diesel and Motor Oil, BTEX and Stoddard Solvent.

Refer to Table 1

Test Pit #11 was located between monitoring wells MW-3 and MW-6. A trench was placed in this location because a high soil gas reading was obtained in this area. The possibility of a shallow source of contamination had to be investigated. One sample was taken at a depth of 7.5' and analyzed for Total Oil and Grease, Volatile Chlorinated Hydrocarbons, Total Petroleum Hydrocarbons as Gasoline, Diesel and Motor Oil, BTEX and Stoddard Solvent. A slight odor was detected in this trench between 4' and 8'.

All test pits were backfilled with the respective soils that had been excavated. Table 1 is a summary of positive results from test pit sampling. Test pit logs and laboratory reports for the test pit samples are presented in Toxic Technology Services Report 90-4 dated November 27, 1990.

2.4.4 Soil Borings From Groundwater Monitoring Well Installations

On October 1, 1990, a boring, identified as B-1 (Plate 7) was placed to a depth of 25 feet in the area where the fuel tanks from the 1940's were located. This was done to evaluate this area as a shallow source of contamination. Soil samples were taken every 5 feet. Samples from 5 feet, 15 feet and 25 feet were sent to NET Pacific for analysis. After sample collection, the bore hole was filled with concrete to grade as required by Zone 7.

There are currently eight on site and two off site groundwater monitoring wells associated with the subject site. This includes MW-1 installed in 1986 by Applied Geosystems and nine wells installed under the direction of Toxic Technology Services dating from 1989 to 1992. Boring logs of each well and B-1 are presented under Appendix C. The boring logs provide soil strata information. Appendix D presents analytical data for all soils resulting from well installations and B-1.

2.5 Summary of Soils Investigation

It appears that the fuel tanks that were removed in 1989 were the primary source of contamination. A search was made for additional sources via the soil gas testing and the shallow trenching, but none were found.

Data from the soils investigation thus far indicates that there are two zones of contamination. These are the fuel tank excavation and the capillary fringe.

2.5.1 Fuel Tank Excavation

Data indicates that the tank excavation is contaminated from the approximate depth of the tank bottom (12 feet) to groundwater.

2.5.2 Capillary Fringe

Data from the soil gas testing and well installation borings indicate that in general, the soil throughout the subject site is contaminated from a depth of approximately 20 feet (the capillary fringe) to the depth of groundwater at

approximately 28 feet. Contamination includes low levels of gasoline petroleum hydrocarbons, Benzene, Toluene, Ethylbenzene, Xylenes and trace levels of halogenated hydrocarbons.

It appears that this lower soil contamination is a result of groundwater contamination permeating the soil in the capillary fringe zone and depositing contamination.

Appendix D presents in tabular form, an analytical summary of soil boring samples.

2.6 Groundwater Elevations

The groundwater gradient at the site is essentially flat. The elevation of the groundwater has been measured in the monitoring wells on site by surveying the elevation of the top of the casing and measuring the depth to groundwater using an electronic probe. The elevations are based on Alameda County benchmark BLO-MEEK located in the middle of the intersection of Blossom Way and Meekland Avenue. The depth to groundwater was measured in December of 1989, January of 1990, and then monthly since March of 1990.

The data are presented on Table 2. They indicate a very low westward to northwestward gradient. For the most part, the elevations to groundwater in the wells are within 0.1 feet and are about at the level of error in the measuring techniques. Therefore an exact gradient was not calculated. Table 2a presents the monthly odor and sheen observations recorded concurrently with the elevations to groundwater.

Figure 1 is a graphical representation of groundwater elevations over time. This indicates that the gradient is quite flat and that the water table fluctuates in response to the various seasons of the year.

Figure 2 presents a gradient contour of the site confirming the flatness of the subject site and the general regional gradient.

2.7 Abandoned Well

A water well was located at the northeast corner of the building and connected to a holding water tank inside the building by a galvanized surface pipe. This is presented on Plate 1. Previous attempts to activate the pump to sample the well were not successful.

Alameda County Public Works Department has no record of a well at the subject site prior to the 1986 installation of one monitoring well by Applied Geosystems. No data were available regarding the total depth, screened interval or condition of the well. Because of the potential that the well could act as a conduit for downward migration of the near surface contamination, it was decided that the well should be grouted and abandoned.

The grouting was done on December 12, 1989 by HEW Drilling, Inc.

The well head and surface piping was removed and the pump was then taken out of the well. The well was four inches in diameter with a PVC casing. the total depth of the well was measured at 67.9 feet to the ground surface. The top of the casing was approximately one foot below the ground surface.

The depth to standing water in the well was measured at 29.9 feet from the ground surface. The well was purged by bailing and a water sample collected. The initial bailer of water has no odor, sheen or product. After bailing approximately 2 gallons, a solvent odor was detected. The odor increased in intensity as more water was extracted from the well, however, the samples collected had no noticeable odor. The sample was shipped in a cooled ice chest to TMA/Norcal and analyzed for Volatile Halogenated Hydrocarbons, Total petroleum Hydrocarbons as gasoline and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX). Results are presented in Appendix E.

The well was pressured grouted using a tremie pipe starting from the bottom and continuing upward. The grout mix was one 90 pound sack of Lonestar Cement Type I & II per five gallons of water. A total of 22 sacks of cement were used to grout the well. The level of the cement grout was brought up to where it overflowed the top of the casing.

2.8 Groundwater Contamination

Groundwater has been monitored at the subject site on a quarterly basis. Data indicates that the contamination includes gasoline petroleum hydrocarbons, Benzene, Toluene, Ethylbenzene, Xylenes and trace levels of halogenated volatile hydrocarbons. Levels of contamination have consistently been the highest at MW-1, located approximately 10 feet west of the fuel tank excavation.

MW-8, the on site up-gradient monitoring well, has contained trace levels of halogenated, volatile hydrocarbons well below any regulatory limit. It appears that these contaminants are passing through the vadose zone and showing up in the groundwater.

Data from MW-10 and MW-11 indicate that groundwater contamination has migrated off site. However, levels of contamination in MW-10 seem to suggest the possibility of additional off site sources contributing to the contaminant plume. In the three sampling episodes that have included MW-10 and MW-11, both indicate that levels in MW-10 are substantially higher than MW-11. MW-11 is closer to the site and exhibits contaminant levels more in keeping with the closest on site well (MW-3). Yet, contamination levels in MW-10 have been among the highest values detected.

Appendix E presents all groundwater data obtained from quarterly monitoring, the abandoned well and the 1986 sampling of MW-1. Original lab reports, sampling information and Chain of Custody sheets are already on file with Alameda County. The data is presented in two formats; the first is all data for each well over time; the second is a graphical presentation of petroleum hydrocarbons as gasoline and Benzene values over time for each well.

2.9 Waste Storage And Disposal

After tank removal, the excavations were lined with plastic. Excavated soil was placed back in the respective pit and covered with plastic.

All contaminated groundwater and cuttings from well installations are placed in 55 gallon drums at the time of generation and after analysis are disposed under a hazardous waste manifest. Cuttings that are not a hazardous waste remain on site.

2.10 Underground Utilities

Several utility checks have been conducted by USA. To the best of our knowledge, there are no active on site underground utilities. During trenching operations, a clay pipeline, possibly an old sewer line was uncovered, however, the line was dry and appeared unused.

2.11 Unusual Conditions

The investigation thus far has not presented any situation that is particularly unusual or troublesome.

2.12 Permits

At the time of tank removal, a permit was obtained from Alameda County and the Eden Fire District. All well installations and the one well abandonment were conducted under permit by Zone 7 of the Alameda County Water District.

SECTION 3 PROPOSED REMEDIATION FOR ON SITE SOIL CONTAMINATION

3.1 Purpose

The proposed soil remediation for the site is to excavate approximately 450 cubic yards of contaminated soil from the fuel tank pit and waste oil tank pit and process it through a portable soil remediation unit designed for thermally treating hydrocarbon contaminated soils.

Excavated soil will be thermally treated to achieve a level of no more than 10 ppm of petroleum hydrocarbons. However the goal of treatment is to obtain levels of non-detectable with a detection reporting limit of no greater than 1 ppm. Treated soil will be placed back into the on site excavations. Clean fill will be brought in from off site to bring the excavations up to grade. The excavated areas will be paved with asphalt.

3.2 Method Description

Falcon Energy of Stockton, California operates a transportable soil burning unit for hydrocarbon contaminated soils. This unit is designed to remediate soil contaminated with light distillate petroleum hydrocarbons which include gasoline, diesel and a variety of other fuels. The system operates by rapidly volatilizing petroleum hydrocarbons from the soil and then thermally destroying them in the discharge air stream. The unit consists of a rotary dryer with feed system, discharge and combustion control systems, a dust collector, a modular thermal oxidizer and associated fuel and delivery systems.

The soil remediation unit can process approximately 25 tons per hour throughput depending on contaminant levels, moisture content and other variables.

The unit is designed for a maximum peak soil discharge temperature of 850 degrees Fahrenheit from the dryer and a maximum afterburner peak outlet temperature at 1850 degrees Fahrenheit. Operating setpoint maximums of 800 degrees Fahrenheit and 1800 degrees Fahrenheit respectively are recommended.

Soil in need of treatment is loaded onto the feed hopper which discharges the soil onto a variable speed feeder belt. The feeder belt conveys the soils to a vibrating screen and then onto a belt weigh scale which provides soil feed rate and total weights to the units's electronic control panel. The belt then feeds the contaminated soil into a counterflow rotary drum dryer where volatile compounds and moisture in the soil are evaporated by the heat which is supplied by the direct firing burner. Heat transfer to the soil in the rotary dryer is maximized by the veiling action of specifically designed lifting flights and patented combustion volume flights.

The heated, dry soil is then discharged into the mixer cooler. The evaporated volatiles and water, along with dust released by the drying process, are carried over the dryer's exhaust gases into a knockout box in the baghouse

where the large particles drop out in the gas stream. These precleaned gases are then routed through the baghouse. Dust collected from the knockout box and baghouse are carried to the dryer's mixer cooler and blended into the clean soil output. Output from the baghouse is routed through an exhaust fan into a modular thermal oxidizer/stack unit which reduces the hydrocarbon content of the gas stream.

The Falcon unit currently holds a permit to operate from the San Joaquin Valley Unified Air Pollution Control District. The unit is also recognized by the Bay Area Air Quality Management District. The BAAQMD however requires that Falcon Energy obtain a site specific operating permit prior to commencement of any project in that district.

Appendix F presents information on Falcon Energy's portable soil remediation unit.

3.3 On Site Soil Remediation

Soils from the fuel tank excavation and the waste oil tank excavation will be excavated and processed through the Falcon Energy portable soil remediation unit. Remediated soil will be placed on plastic and piled into 50 cubic yard portions. The piles will be marked as to time and date of treatment. These piles will then be sampled as described below and analyzed by a certified environmental laboratory to confirm the effectiveness of treatment. Piles that are clean will be placed back into the plastic lined excavations.

Soils to be treated are of two types, previously excavated soil and undisturbed soil.

3.3.1 Previously Excavated Soil

Soils that had been excavated in both the fuel tank area and the waste oil tank area at the time of tank removal, had been placed back into the respective excavations after the excavations had been lined with plastic. The levels of contamination over time have more than likely decreased, however this soil will be removed and processed through the portable soil remediation unit so that it can be placed back into the excavations.

3.3.2 Undisturbed Soil

The waste oil pit was essentially clean when samples were taken at the time of tank removal. Therefore the pit will not be over excavated, but a confirmatory sample will be taken from each side wall and the bottom of the excavation.

If data from the waste oil tank excavation indicates contamination, additional soil will be excavated until a 100 ppm hydrocarbon (or less) level is attained.

The fuel pit was significantly contaminated with gasoline and BTEX. This pit will be over excavated on the north, east and west sides. The south side of

the pit was clean and will not be over excavated for safety reasons. The bottom of this pit will be excavated to a depth of approximately 23 feet. Two soil samples will be taken from each sidewall and four will be taken from the bottom. Samples will be collected in brass liners and kept in a cooled ice chest until delivery to NET Pacific Laboratory, a state certified hazardous waste laboratory. Analytical parameters will be:

Total Petroleum Hydrocarbons, Gasoline (TPH-G)
Total Petroleum Hydrocarbons, Diesel (TPH-D)
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)

If at the time of excavation and sampling, it appears that excavation should continue, this will be done to the extent possible. Field measurements will be taken with a portable organic vapor analyzer to assist with this decision making. Field measurements will be confirmed by soil sampling and analysis.

If data from the fuel pit excavation indicates no detectable levels of contamination or levels less than 100 ppm of TPH-G, the excavations will be backfilled with the remediated soil, brought up to grade with clean fill and paved with asphalt.

If data from the fuel pit excavation indicates contamination over 100 ppm of TPH-G, Alameda County will be immediately notified. For safety reasons, the excavation will be too large and deep to remain open. The hole will be backfilled with the remediated soil. Further remediation of the soil contamination will addressed by the groundwater remediation.

3.3.3 Sampling And Analysis Of Remediated Soil

As stated earlier, remediated soil will be placed on plastic in 50 cubic yard portions and labeled as to time and date of treatment. To confirm that the remediated soil has been treated to 10 ppm TPH-G or less, each pile will be sampled in a manner similar to Regulation 8, Rule 40 of the the Bay Area Air Quality Management District. The sampling strategy is as follows:

> Each 50 cubic yard pile will be figuratively split into four equal sectors. A discreet sample will be collected from the center of each sector. Samples will be taken using a clean brass tube driven into the soil with a rubber mallet. The ends of the brass tube will be covered with teflon tape and plastic caps and taped. All samples will immediately placed on ice and transported to NET Pacific, a state certified hazardous waste laboratory. At the lab, each of the four samples will be analyzed for:
>
> Total Petroleum Hydrocarbons, Gasoline (TPH-G)
> Total Petroleum Hydrocarbons, Diesel (TPH-D)
> Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
>
> Results will be obtained within 24 - 48 hours of sampling. All piles that are 10 ppm of TPH-G or less will be placed back into the on site excavations.

3.3.4 Replacement Of Remediated Soil

Both the fuel tank and the waste oil excavations will be lined with plastic after data from sidewall and bottom samples confirm levels remaining in the pits, if any.

After verified clean (10 ppm TPH-G or less), remediated soil will be placed back into the excavations.

Because of the size and depth of the fuel tank excavation, the hole should filled as soon as possible. For this reason, verified clean remediated soil will be placed into the excavation starting from the southeast side. This side was clean at the time of tank removal. Replacement of soil will proceed to the northwest after sidewall and bottom samples are taken.

When soil replacement is completed, clean fill will be brought in from off site to bring the excavation up to grade. Both excavations will then be paved with asphalt.

3.4 Well Abandonment

The over excavation of the fuel pit will destroy the integrity of MW-1. Therefore, MW-1 will be abandoned according to regulations set forth by Zone 7 prior to pit excavation. This includes obtaining a permit from Zone 7 and abandonment of the well by pulling up the casing and grouting the boring.

MW-5 will be used to monitor the groundwater near the contaminated pit area.

3.5 Time Schedule

Figure 3 presents the proposed time/task schedule for the proposed soil remediation.

SECTION 4 PROPOSED REMEDIATION FOR ON SITE GROUNDWATER CONTAMINATION

4.1 Purpose

The purpose of the proposed on site groundwater remediation is to deal with on site groundwater contamination as a separate issue from off site groundwater contamination. Off site contamination has not yet been fully characterized. However, there is sufficient on site data to begin an on site remediation program. The treatment consists of groundwater pumped through a series of carbon canisters and discharged under permit to the local POTW.

4.2 Scope Of Work

4.2.1 Monitoring Well Installation In The North Corner

In general, the subject site has a strong chemical data base, however before beginning remediation, new information revealed that the adjacent neighbor to the northeast has been using a groundwater well monthly for several years. This could have an affect on the movement of the contamination in this direction. To this end, a two inch groundwater monitoring well will be installed as shown in Plate 1, purged, sampled and analyzed for the constituents listed below. This well would then be incorporated in the quarterly monitoring program.

4.2.2 Proposed Aquifer Tests

4.2.2.1 Slug and Recovery Tests

Slug and/or recovery tests may be performed in selected existing monitoring wells to estimate material properties, primarily hydraulic conductivity. Slug tests will involve the "instantaneous" introduction of water into the well and observations of subsequent declining water level. It is anticipated that distilled or deionized water will be used for these tests. An alternative to introduction of water may be raising of the water level in the wells by displacement with a rod or similar object. The rod would be decontaminated if used for multiple tests.

Recovery tests would involve the removal of water from the well and observation of subsequent rise in water levels in the well over time. Water would be removed from the well by bailing or pumping. Pumps and hoses would be decontaminated as discussed above. Bailers will be of the disposal type and used for only one well. Water derived from testing will be placed in 55 gallon drums and disposed of or treated on site.

4.2.2.2 Pump Tests

A pump test may be performed in Monitoring Well No. 6. The test will involve pumping of the well, observation of water levels in the pumping well and one or more nearby observation wells. Water derived from the pumping will be treated on site or disposed of as discussed above.

4.2.3 On Site Groundwater Remediation Program

In general, the groundwater remediation chosen for the subject site is to pump contaminated groundwater from MW-5, MW-6, MW-7 and MW-9 (Plate 8) and direct it through a three canister carbon bed system. Deposition of treated water would be into the sanitary sewer. A schematic of this system is presented as Plate 9.

Each extraction well will contain a dedicated pump and the output from each pump will be manifolded into a single pipe. Pumping rates will be determined by conducting a pump test. Extracted water will be directed through three 55 gallon canisters of activated carbon. Treated water will then be pumped into a 500 gallon holding tank. When water in the holding tank has been verified clean, through chemical analysis, it will be discharged into the sanitary sewer.

The system is designed such that if treated water does not meet the discharge requirements of the Oro Loma Sanitary District, the water can be redirected through the carbon until discharge requirements have been achieved.

Sampling ports will be located at each extraction well, before each carbon canister and before and after the holding tank.

A sanitary sewer discharge permit will be obtained from the Oro Loma Sanitary District before final deposition.

According to the Oro Loma Sanitary District discharge requirements dated January 3, 1991, the allowable limits for our subject site requirements are as follows:

BTEX.....	Non-detectable
Total Petroleum Hydrocarbons.....	15 mg/L

A copy of the Oro Loma Sanitary District Special Discharge Conditions are presented as Appendix G.

Discharge into the sanitary sewer will be controlled on site so that discharge will be at selected time intervals. These time intervals and flow rates will be negotiated with the Oro Loma Sanitary District prior to discharge.

The sampling schedule for the groundwater remediation is as follows:

First Week of Installation - Daily influent and effluent

Weeks Two through Four - Weekly influent and effluent

Weeks Five through End of Remediation - Monthly influent and effluent

Samples will also be taken between canisters 1 and 2 to check for breakthrough. This will occur weekly for the first six weeks and monthly thereafter. When breakthrough occurs, canister 2 will be moved to the number

one position, canister 3 will be moved to the number two position and the spent canister will be replaced with fresh carbon and placed in the number three position.

The groundwater remediation alternative is a closed system and does not involve air stripping of contaminants, therefore, no permit from the Bay Area Air Quality Management District (BAAQMD) will be required.

4.3 Time Schedule

Figure 3 presents the proposed time/task schedule for the proposed on site groundwater remediation.

It is recommended that the remediation of the groundwater below the site be initiated concurrently with on-going characterization of the off site groundwater contamination. If an off site remediation system is required, it would probably be set up and operated independently of the on site system.

Therefore, the is no reason to delay the on site work and in addition, it will provide valuable for a cost effective data design and operation of an off site system.

SECTION 5 PHASE I INVESTIGATION OF OFF SITE GROUNDWATER CONTAMINATION

Data obtained from MW-10 and MW-11, the off site groundwater monitoring wells indicates that there is contamination off site. However, the contaminant levels in MW-10 are considerably higher than in MW-11 or the down gradient on site wells. This raises the issue of other possible sources of contamination contributing to the off site problem.

In brief discussions with neighbors of the subject site, it was learned that several of the local properties had operated as gas stations at one time and had underground tanks. There is the possibility too that the car wash located on Blossom Way was at one time a petroleum distribution center. Any releases from this site could spread contamination down gradient and be present in MW-10.

Similarly, product releases to the groundwater from tanks located under Hank's Liquors (northwest corner of Meekland and Blossom) and Hoang's Auto Care (southwest corner of Meekland and Blossom) (Plate 5) could appear in MW-10.

The initial scope of work, is to conduct an intensive historical search of the area within a one-half mile radius of the subject site.

This includes the following steps:

1. An area reconnaissance in a one-half mile radius around the subject site.
2. A file search and personal interviews with the Alameda County inspectors for that area and the Eden Fire District inspectors.
3. A file search at the Regional Water Quality Control Board
4. A file search at the Alameda County Planning Department
5. A search of the known water wells in the area.
6. A historical aerial photograph search.
7. Interviews with some of the local residents.

This information would then be assessed and compiled into a report detailing the possible contributors, if any and specific steps to characterize the off site contamination.

SECTION 6 REPORTING

All activities involving the subject site will be reported to Durham Transportation on a monthly basis.

The reports will be in the format of progress reports which could include any or all of the following:

Introduction
Monthly Monitoring of Groundwater Elevations
Quarterly Monitoring Well Sampling and Analysis
Monthly Activities
Remediation Data
Summary and Conclusions

Each month, copies of progress reports will be forwarded to representatives of Alameda County and the Water Quality Control Board.

SECTION 7 SITE SAFETY PLAN

A site safety plan for this program is provided as a separate document.

TABLES

TABLE 1
SUMMARY OF RESULTS FROM
TEST PIT SAMPLING

Test Pit #7 - 9.0'	
Oil and Grease	57 mg/kg (ppm)
Total Petroleum Hydrocarbons (Motor Oil)	16 mg/kg (ppm)
Test Pit #8 - 2.5'	
Toluene	69 ug/kg (ppb)
Total Petroleum Hydrocarbons (Motor Oil)	20 mg/kg (ppm)
Test Pit #8 - 8.0'	
Toluene	17 ug/kg (ppb)
Test Pit #9 - 7.0'	
Toluene	24 ug/kg (ppb)
Test Pit #10 - 7.5'	
Toluene	5 ug/kg (ppb)
Test Pit #11 - 7.5'	
Toluene	34 ug/kg (ppb)

TABLE 2

GROUNDWATER ELEVATIONS (feet above MSL)
DURHAM TRANSPORTATION--MEEKLAND PROJECT

DATE	MW1	MW3	MW4	MW5	MW6	MW7	MW8	MW9	MW10	MW11
Jan-91	25.18	25.16	25.22	25.54	25.16	25.21	.	.	.	.
Feb-91	25.44	25.38	25.45	25.39	25.40	25.46	25.48	25.40	.	.
Mar-91	27.48	27.45	29.56	26.62	27.46	27.50	27.40	27.40	.	.
Apr-91	28.15	28.09	27.99	28.04	28.00	28.02	28.06	27.99	.	.
May-91	27.18	27.12	27.16	27.17	27.11	27.19	27.19	27.13	.	.
Jun-91	26.54	26.45	26.56	26.77	26.46	26.53	26.57	26.58	.	.
Jul-91	26.12	26.04	26.05	26.13	26.04	26.10	26.13	26.04	.	.
Aug-91	25.59	25.49	25.62	25.37	25.50	25.59	25.60	25.52	.	.
Sep-91	25.15	25.18	25.18	25.49	25.06	25.16	25.18	25.15	.	.
Oct-91	24.88	24.86	24.92	25.00	24.82	24.97	24.94	24.84	.	.
Nov-91	24.96	24.90	24.97	24.94	24.87	24.94	24.96	24.89	.	.
Dec-91	24.76	24.69	24.78	24.89	24.67	24.76	24.79	24.70	.	.
Jan-92	25.39	25.31	25.28	25.48	25.31	25.37	25.37	25.32	25.16	25.90
Feb-92	28.24	28.23	28.22	28.24	28.15	28.24	28.26	28.19	28.37	28.18
Mar-92	28.46	28.54	28.46	28.49	28.40	28.46	28.59	28.42	28.32	28.41
Apr-92	28.49	28.43	28.48	28.39	28.43	28.49	28.51	28.44	28.32	28.44
May-92	27.77	27.76	27.75	27.79	27.56	27.75	27.79	27.70	27.67	27.68
Jun-92	26.91	26.92	26.87	26.88	26.81	26.87	26.92	26.81	26.64	26.76
Jul-92	26.50	26.40	26.47	26.49	26.41	28.16	26.53	26.41	26.23	26.37
Aug-92	25.86	25.88	25.85	25.81	25.76	25.83	25.88	25.79	25.26	26.07
Sep-92	25.65	25.68	25.64	25.60	25.56	25.61	25.67	25.56	25.39	25.54

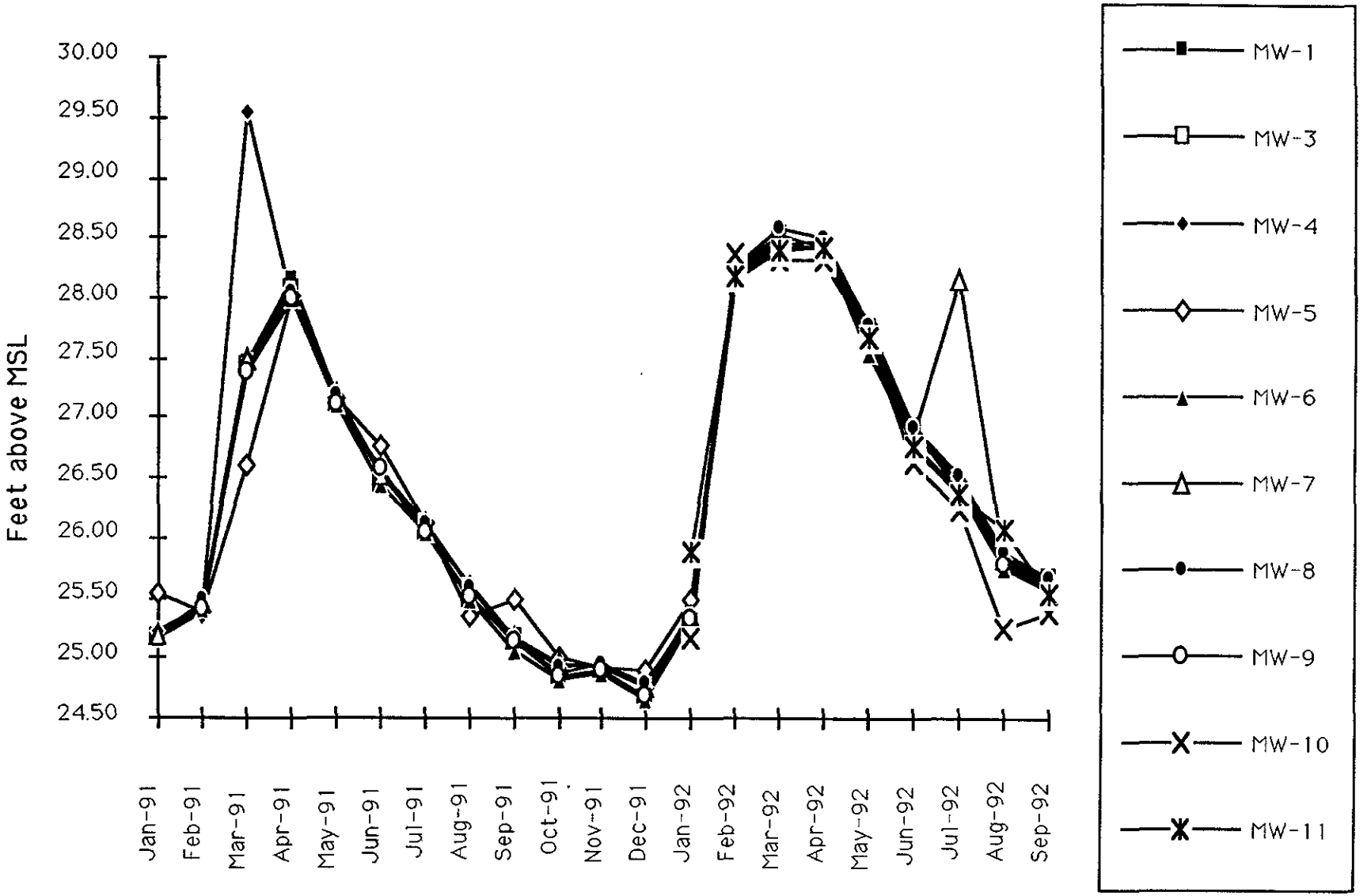
TABLE 2 a

GROUNDWATER ODOR AND SHEEN OBSERVATIONS
DURHAM TRANSPORTATION--MEEKLAND PROJECT

	MW1	MW3	MW4	MW5	MW6	MW7	MW8	MW9	MW10	MW11
Jan-91	O S	- -	- -	- -	o -	o -	. .	. .	. .	. .
Feb-91	O S	- -	- -	o -	o -	- -	- -	o -	. .	. .
Mar-91	X X	X X	X X	X X	X X	X X	X X	X X	. .	. .
Apr-91	O -	- -	- S	- -	- -	- -	- -	- -	. .	. .
May-91	- -	- -	- -	o -	- -	- -	- -	- -	. .	. .
Jun-91	o -	- -	- -	o -	- -	- -	- -	- -	. .	. .
Jul-91	O S	- -	- -	- -	o -	- -	- -	- -	. .	. .
Aug-91	O S	- -	o -	o -	o -	o -	- -	- -	. .	. .
Sep-91	O S	- -	- -	o -	o -	- -	- -	- -	. .	. .
Oct-91	O S	- -	- -	- -	- -	- -	- -	- -	. .	. .
Nov-91	O S	- -	- -	o -	o -	- -	- -	- -	. .	. .
Dec-91	O S	o -	- -	o -	o -	- -	- -	- -	. .	. .
Jan-92	O S	o -	- -	o -	o -	- -	- -	o -	o -	o -
Feb-92	O -	- -	- -	o -	- -	- -	- -	- -	O -	- -
Mar-92	O -	- -	- -	o S	- -	- -	- -	o -	o -	- -
Apr-92	o -	o -	- -	o -	o -	- -	- -	- -	o -	- -
May-92	O S	o -	- -	o -	- -	o -	- -	- -	o -	o -
Jun-92	O -	- -	- -	- -	- -	- -	- -	- -	O -	- -
Jul-92	O -	- -	- -	o -	- -	- -	- -	- -	- -	- -
Aug-92	O -	- -	- -	o -	- -	- -	- -	- -	- -	- -
Sep-92	O -	- -	- -	o -	- -	- -	- -	- -	o -	- -

O=Strong Odor o=Slight Odor S=Sheen -=None Present X= No Observation Made

FIGURES



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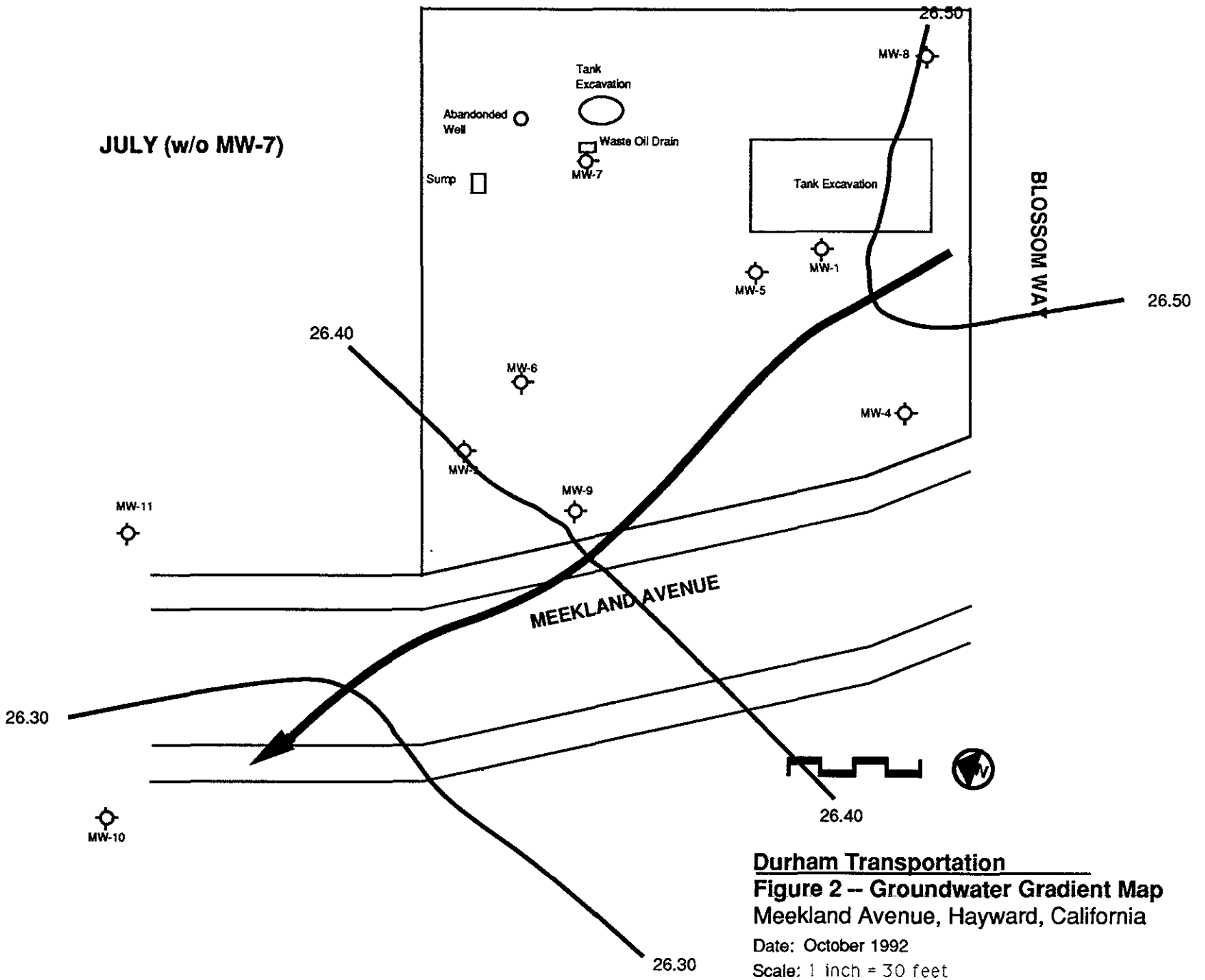
Groundwater Elevations

Durham Transportation
Meekland Avenue, Hayward, California

Figure
1



Durham Transportation

Figure 2 -- Groundwater Gradient Map

Meekland Avenue, Hayward, California

Date: October 1992

Scale: 1 inch = 30 feet

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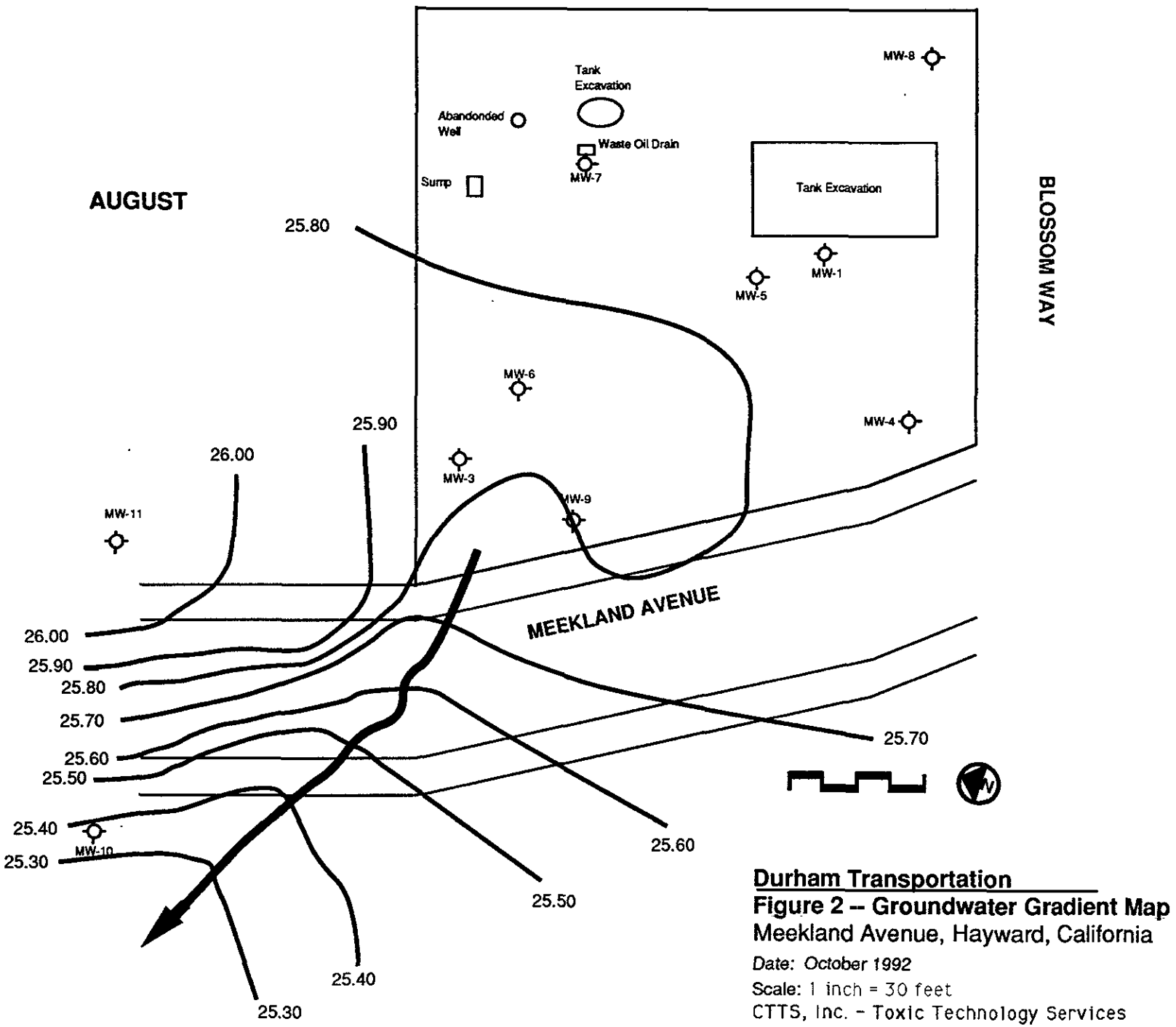


Durham Transportation

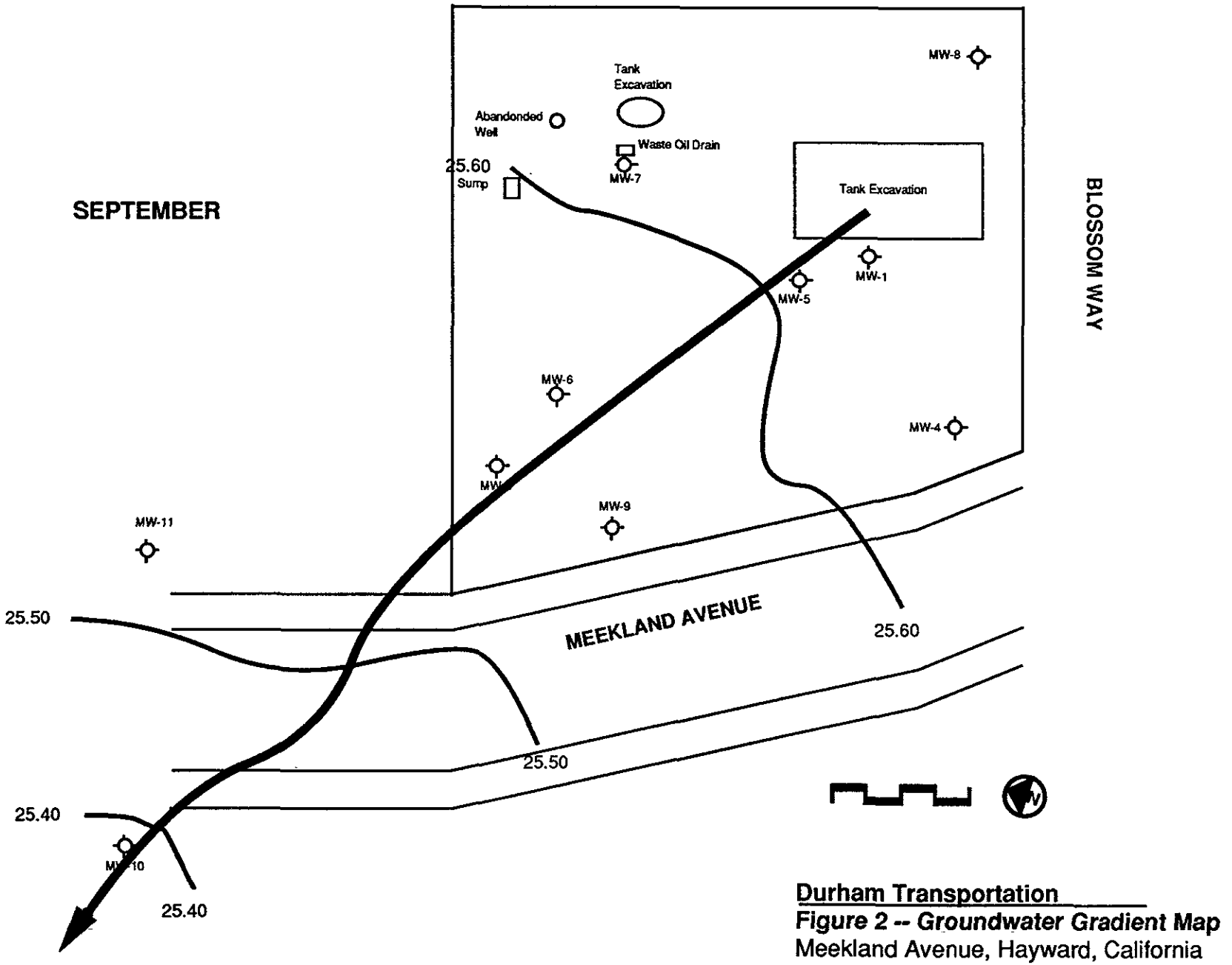
Figure 2 -- Groundwater Gradient Map

Meekland Avenue, Hayward, California

Date: October 1992

Scale: 1 inch = 30 feet

CTTS, Inc. - Toxic Technology Services



Durham Transportation

Figure 2 -- Groundwater Gradient Map

Meekland Avenue, Hayward, California

Date: October 1992

Scale: 1 inch = 30 feet

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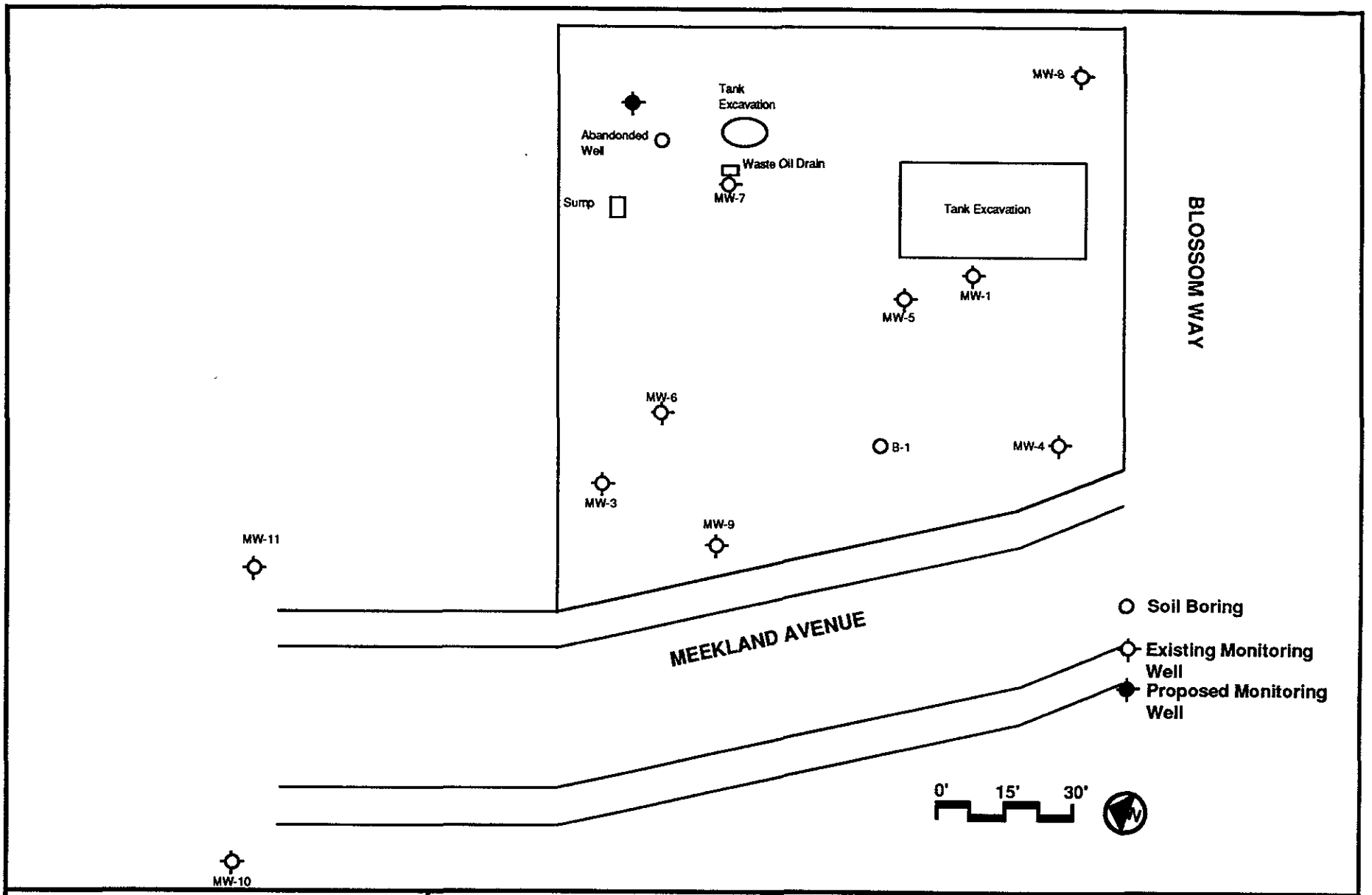
County Authorization to proceed

Weeks ---------->

Figure 3 Time Schedule

TASK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
I-Project Maintenance																																																					
Monthly Water Levels				•				•				•				•				•				•				•				•				•				•				•				•				•			
Monthly Report					•				•				•				•				•				•				•				•				•				•				•				•			
Quarterly Well Sampling			•												•												•												•												•			
Project Management																																							•															
Site Maintenance																																																					
II-Soil Remediation																																																					
Permits																																																					
Purchase Equipment																																																				
Excavation																																																					
Soil Remediation																																																				
Asphalt Excavations																																																				
III-On Site Groundwater Remediation																																																				
Permits																																																				
Purchase Equipment																																																				
Abandon/Install Wells																																																			
Surge Wells																																																				
Pump Test																																																				
Build Remediation System																																																				
Start Remediation								•																																												
Water Sampling								•••	•	•	•					•				•				•				•				•				•				•				•				•				•			
System Maintenance																																																				
IV-Off Site Groundwater Investigation																																																				
Historical Investigation																																																				
Report							•																																													

PLATES



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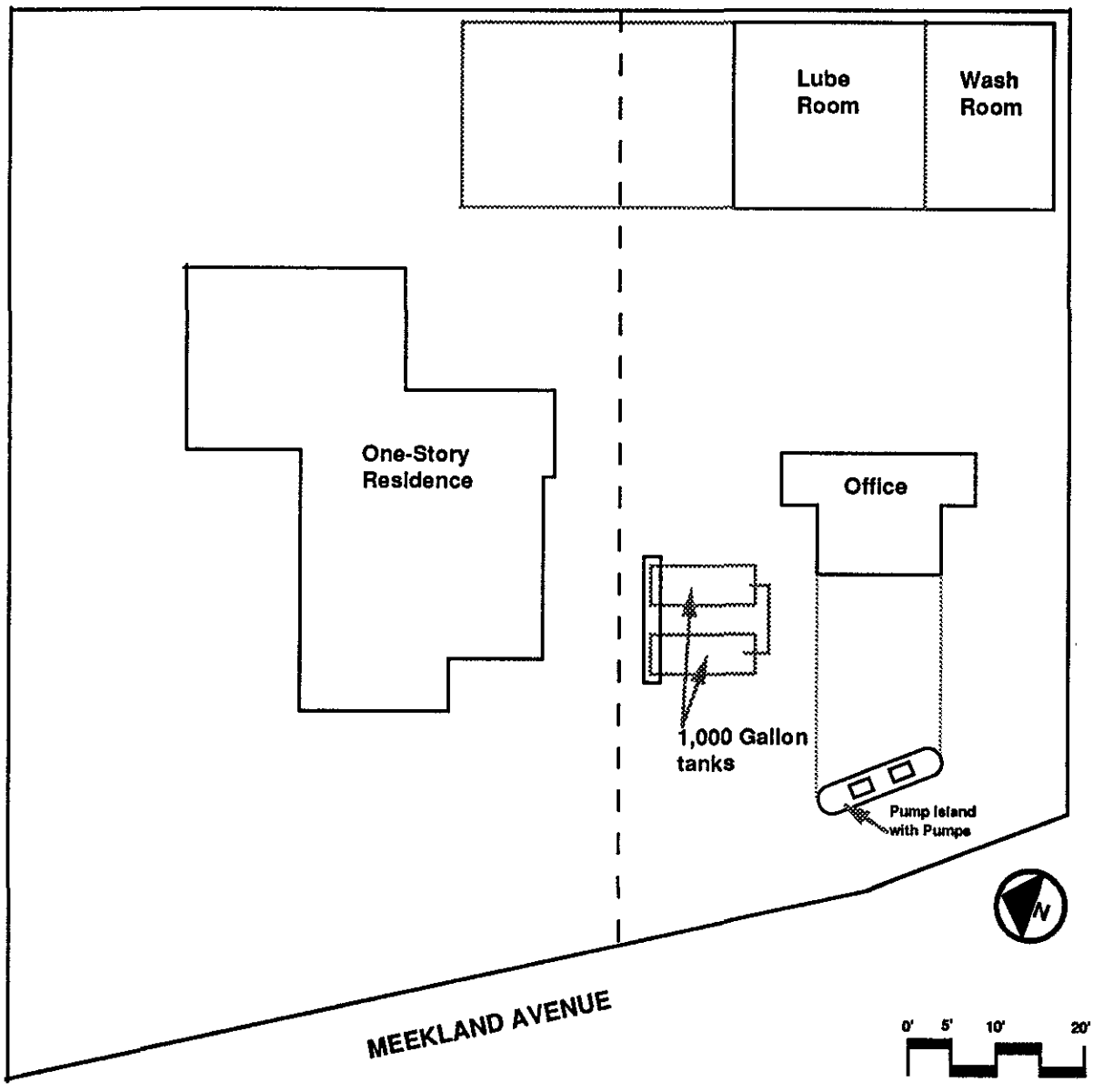
SITE PLAN (Current)

Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
1
1" = 30 '



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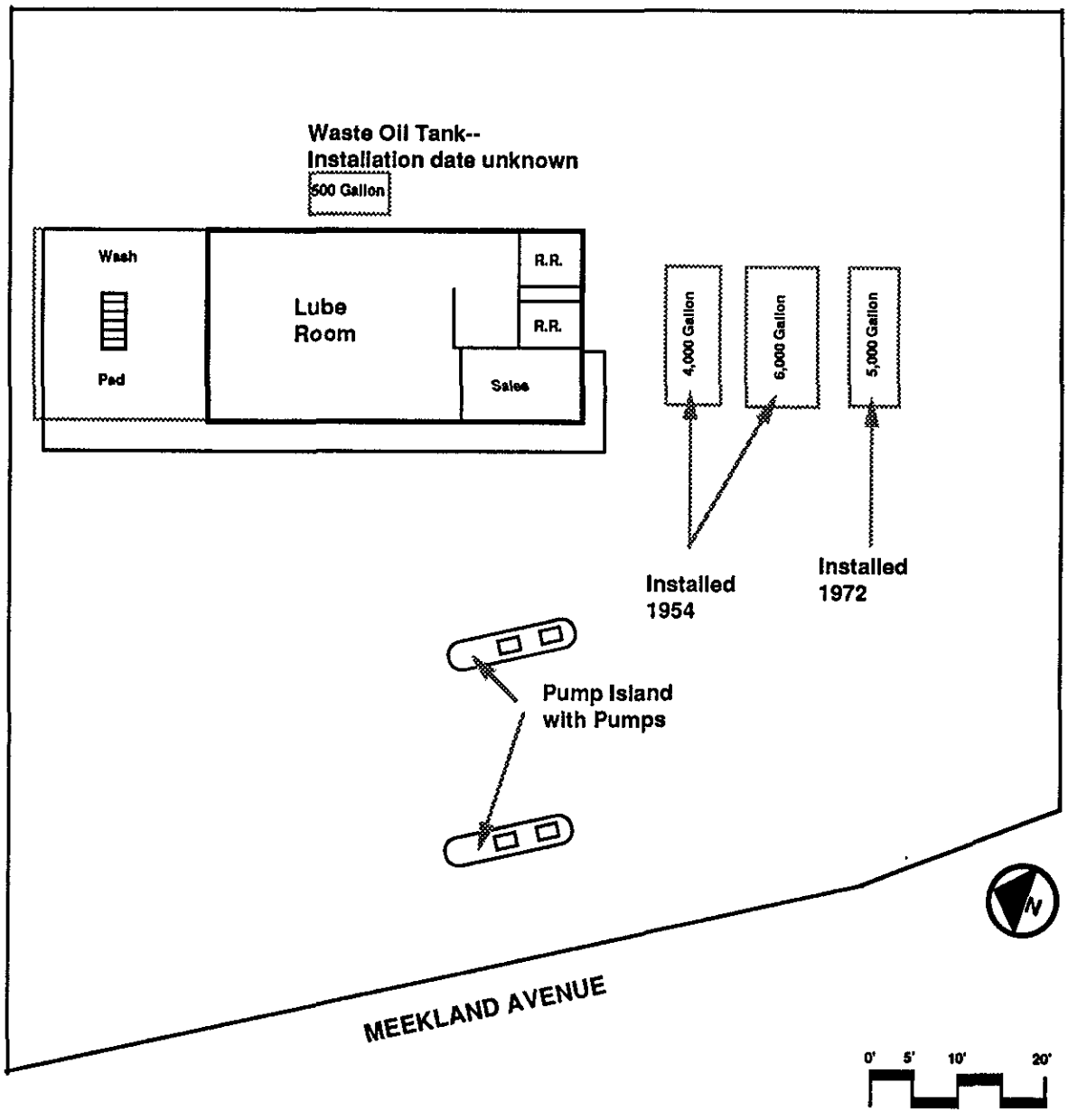
SITE PLAN (1946)

Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
2
1" = 20'



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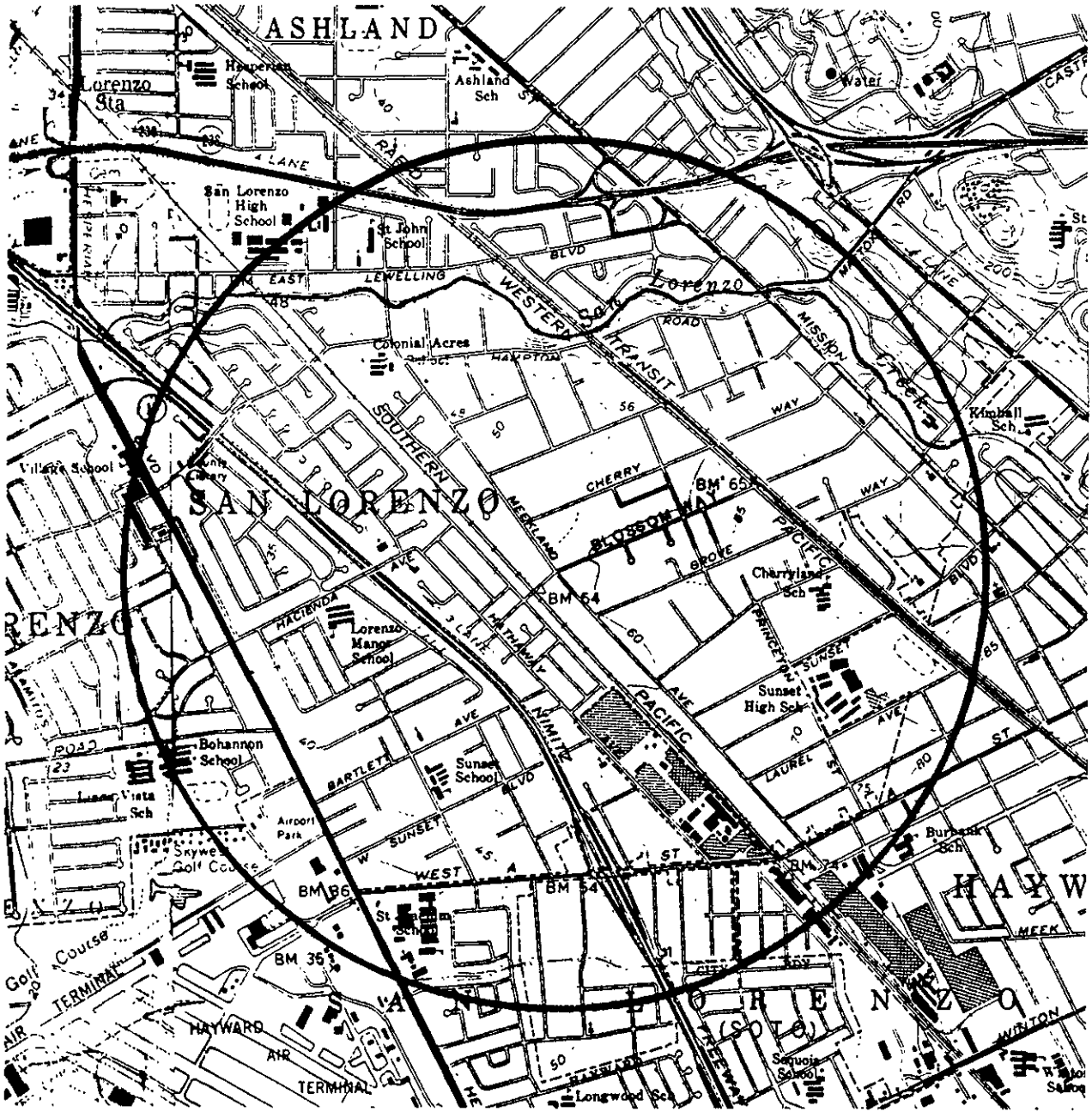
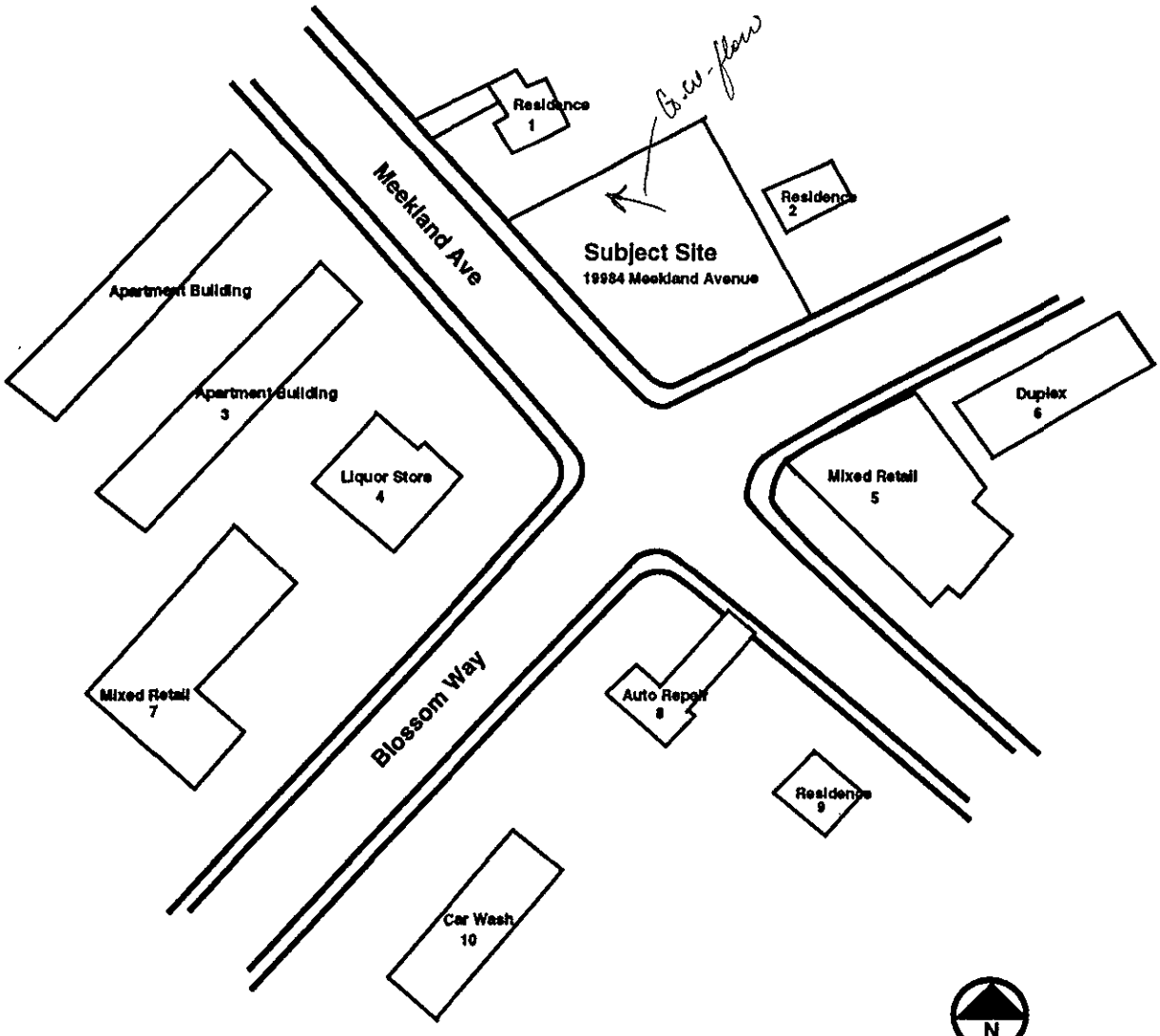
SITE PLAN (1954-1990)

Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
3
1" = 20'



CTTS , Inc. *toxic technology services* P.O. Box 515 • Rodeo, California 94572 (510) 799-1140	**ONE MILE RADIUS VICINITY MAP** **Project 92-7** **Durham Transportation** Meekland Avenue, Hayward, California	Plate **4**



KEY TO BUILDING ADDRESSES

1.	19870	Meekland Avenue
2.	126	Blossom Way
3.	19875	Meekland Avenue
4.	50	Blossom Way
5.	20008 - 20332	Meekland Avenue
6.	127 - 139	Blossom Way
7.	40 - 46	Blossom Way
8.	20009	Meekland Avenue
9.	20337	Meekland Avenue
10.	39	Blossom Way

0' 25' 50' 100'

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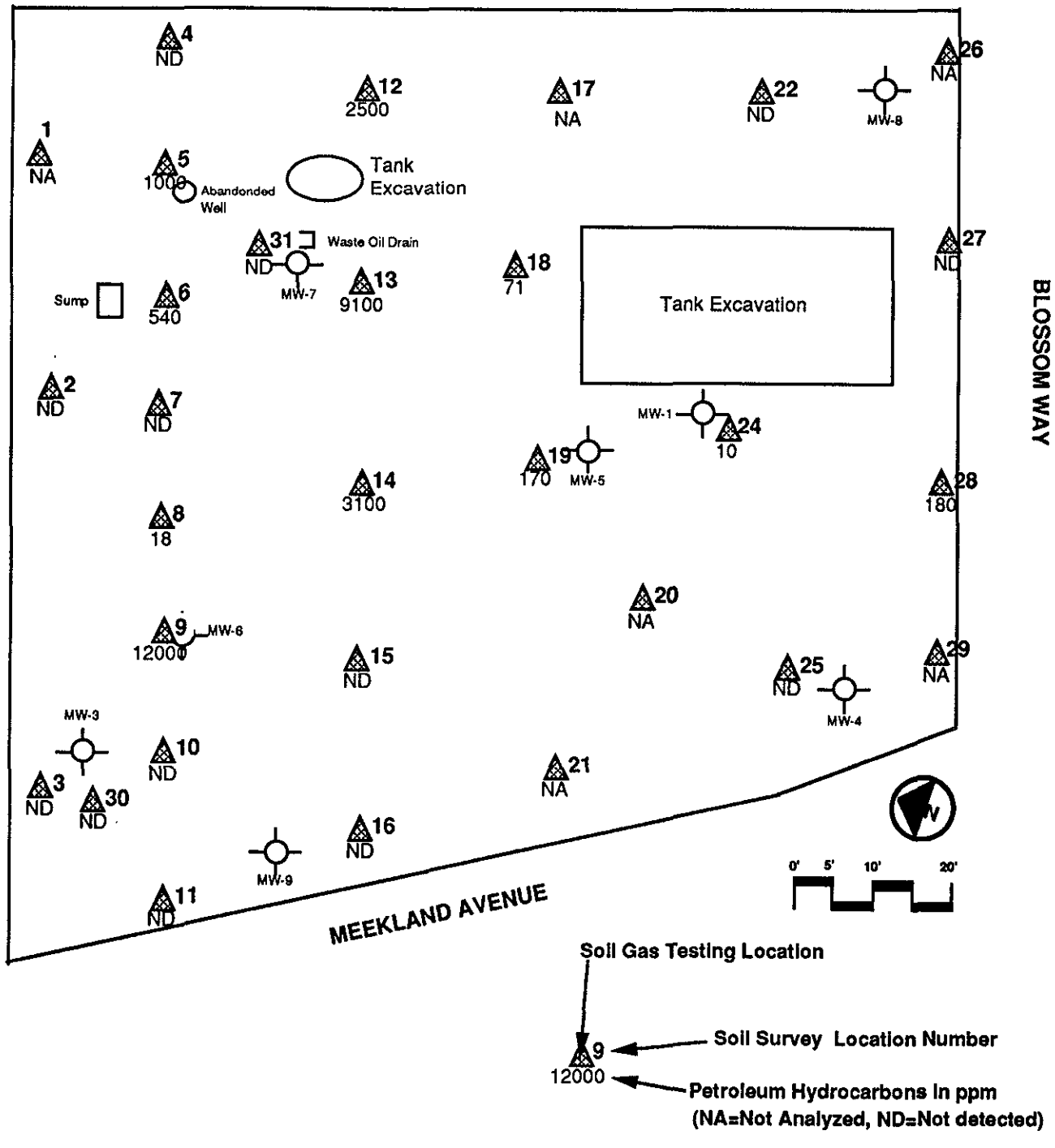
IMMEDIATE VICINITY MAP

Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
5
1" = 100'



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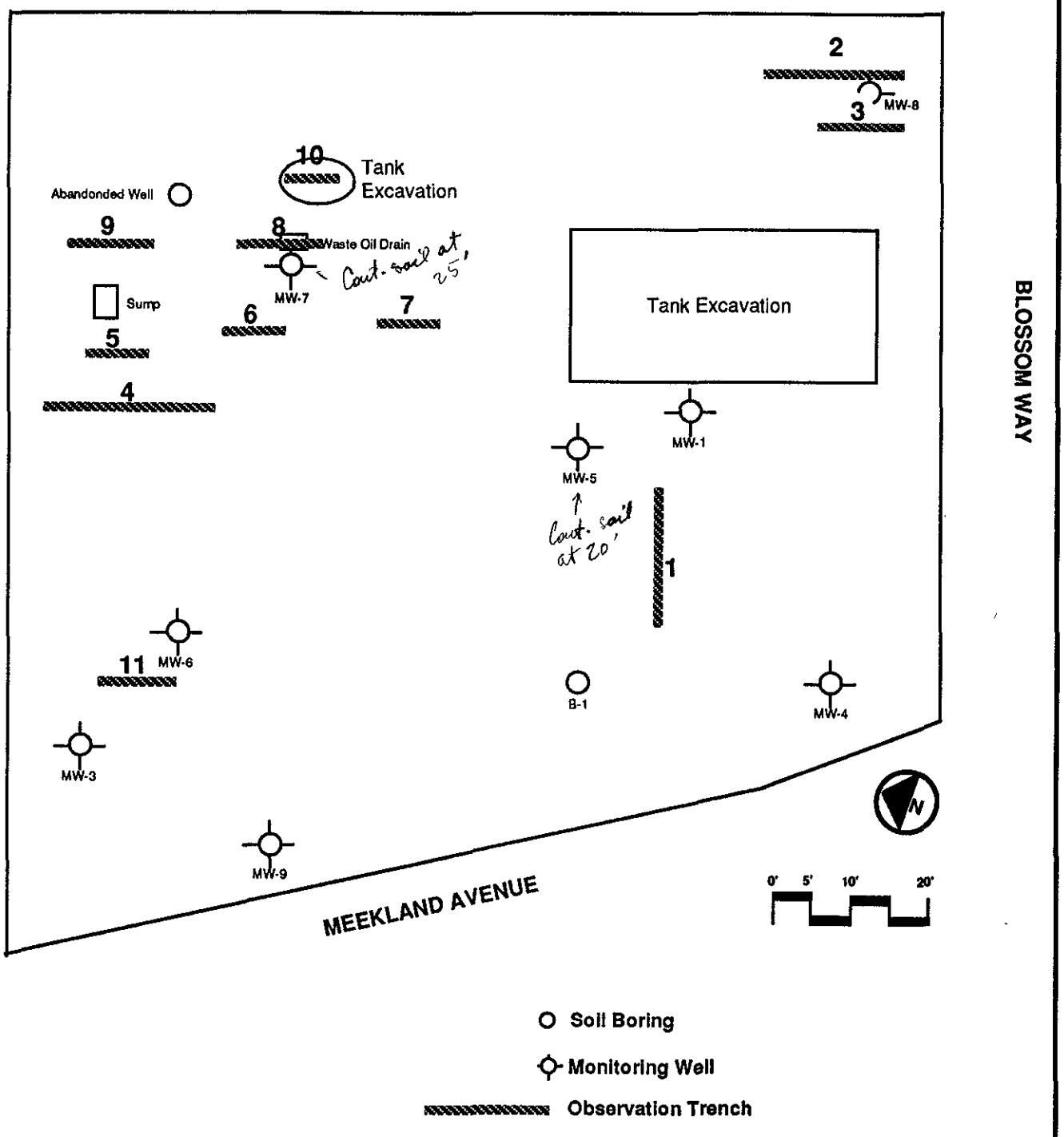
SOIL GAS TESTING LOCATIONS
Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
6
1" = 20'



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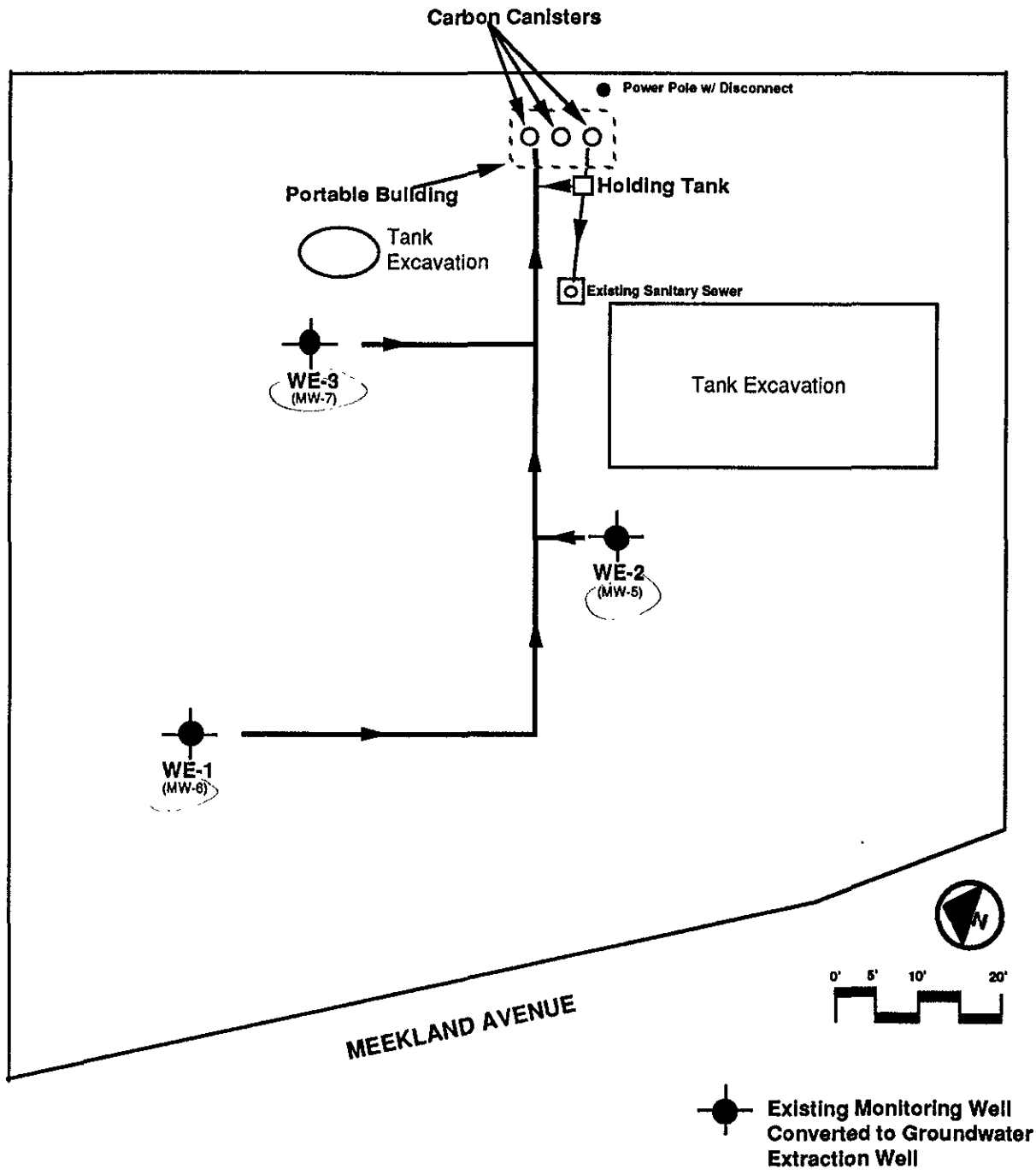
TRENCH LOCATIONS

Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
7
1" = 20'



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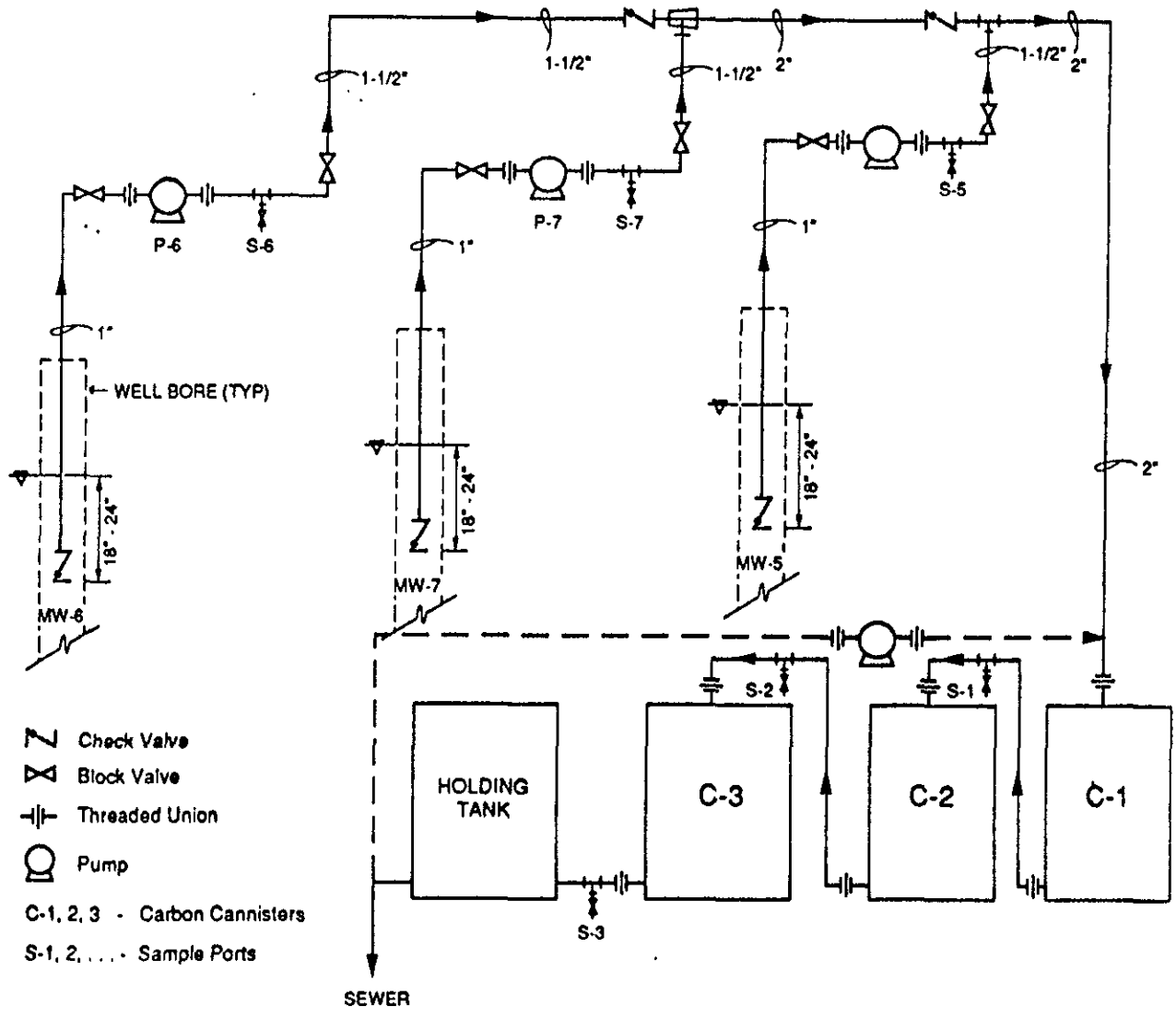
GROUNDWATER REMEDIATION SYSTEM
Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
8
1" = 20'



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GROUNDWATER REMEDIATION SCHEMATIC

Project 92-7
Durham Transportation
Meekland Avenue, Hayward, California

Plate
9
no scale

APPENDIX A

Please print or type. Form designed for use on elite (12-pitch typewriter)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000081294 — Manifest Document No. 0016 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DURHAM TRANSPORTATION, INC. P.O. BOX 515 RODEO, CALIFORNIA 94572

4. Generator's Phone: (510) 799-1140

A. State Manifest Document Number: 9173829

B. State Generator's ID: HAHQ360193178

5. Transporter 1 Company Name: FALCON ENERGY

6. US EPA ID Number: CAD982521685?

C. State Transporter's ID: 204146

D. Transporter's Phone: (209) 463-7108

7. Transporter 2 Company Name: EVERGREEN ENVIRONMENTAL

8. US EPA ID Number: CAD0824468?0

E. State Transporter's ID: CAL?

F. Transporter's Phone: (800) 972-5284

9. Designated Facility Name and Site Address: EVERGREEN ENVIRONMENTAL 777 LOCUST AVE, RIPON, CA 95366

10. US EPA ID Number: CAD982446890

G. State Facility's ID: CAD982446890

H. Facility's Phone: (800) 972 5284

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON RCRA HAZARDOUS WASTE, LIQUID	001	TT	00660	G	State 134 / EPA/Other NONE
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: 99% WATER, PURGED WELL WATER

K. Handling Codes for Wastes Listed Above: a. 11 b. c. d.

15. Special Handling Instructions and Additional Information: 24 HOUR EMERGENCY RESPONSE NUMBER 1 (800)399-HEL

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Lisa Polos	Lisa Polos	07	11	92

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
WAIKER Daniel	DtzWalk	07	11	92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Joe Living	Joe Li	07	11	92

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year
Joe Living	Joe Li	07	11	92

DO NOT WRITE BELOW THIS LINE.

GENERATOR

TRANSPORTER

FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

9173829

DHS 8022A (12/90)
EPA 8700-22

White: TSDF SENDS THIS COPY TO DHS WITHIN 30 DAYS.
To: P.O. Box 3000, Sacramento, CA 95812

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: C A C 0 0 0 1 2 9 9 8 1 4 9 — Manifest Document No. 0 1 1 4 9 1

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
Durham Transportation Inc.
19984 Meekland Ave. Hayward, CA 94541

4. Generator's Phone (510) 799-1049

A. State Manifest Document Number: 90472949

B. State Generator's ID: E A H 0 1 3 1 6 1 - 0 1 1 9 1 3 1 7 1 8

5. Transporter 1 Company Name: Stamco, Inc.

6. US EPA ID Number: C A D 0 1 6 1 3 5 4 7 9 9 1 6

C. State Transporter's ID: 21 3280

D. Transporter's Phone: 800 321-1030

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Statewide Environmental Services
12618 S. Main St.
Los Angeles, CA 90061

10. US EPA ID Number: C A D 0 1 0 0 1 0 8 8 2 5 2

G. State Facility's ID

H. Facility's Phone: 213- 756- 7896

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-RCRA Hazardous Waste Solid (Hydrocarbon fuels, soil) no class , no ID	0 0 8	DM	0 2 0 0 0	P	State 611 / EPA/Other none
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
a. Oil, diesel in soil — 24 hr phone 800-321-1030
Bill to Ecology Recovery Assoc.

K. Handling Codes for Wastes Listed Above
a. 14/01 b. c. d.

15. Special Handling Instructions and Additional Information
a. SES Profile P 1098, ERG No. 31

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR — Printed/Typed Name: Lisa Bilcs — Signature — Month Day Year: 11 12 05 91

TRANSPORTER — 17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Ray Ownsby — Signature — Month Day Year: 11 12 05 91

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY — 19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: STUART BROWN — Signature — Month Day Year: 11 12 13 91

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA CALL 1-800-852-7550

90472949

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete

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** TOTAL PAGE.001 **

Form Approved Long No. 0800—0039 (Expires 9-30-91) 1224 and Front of Page 7

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Toxic Substances Control Division, Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CIAIC|0|0|0|2|9|9|8|4|9 Manifest Document No. 7|2|2|8|3

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Durham Trucking
P.O. Box 948
Rosemead, CA 91770-0948

A. State Manifest Document Number 89890865

4. Generator's Phone (213) 571-7020

B. State Generator's ID

5. Transporter 1 Company Name: Erickson, Inc.

6. US EPA ID Number: C|A|D|0|0|9|4|6|6|3|9|2

C. State Transporter's ID 235-1393

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone (415) 777-6411

E. State Transporter's ID 106220

9. Designated Facility Name and Site Address
Gibson Oil
Commercial Dr.
Bakersfield, CA 93308

10. US EPA ID Number: C|A|D|9|8|0|8|8|3|1|1|7

F. Transporter's Phone

G. State Facility's ID CARDG|8|0|5|4|3|1|0|1|7

H. Facility's Phone (805) 377-0413

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-RCRA Hazardous Waste Liquid	001	TT	05812	G	State 221 / EPA/Other None
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
A. Oily water rinsate profile # 7362-1

K. Handling Codes for Wastes Listed Above
a. 01 b. c. d.

15. Special Handling Instructions and Additional Information
Gloves & Goggles
612.36

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: DAVID C SCHULTZ — Signature — Month Day Year: 07 12 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ROBERT CAMPA — Signature — Month Day Year: 07 12 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: DAVID HOLMES — Signature — Month Day Year: 07 12 90

GENERATOR — TRANSPORTER — FACILITY

DHS 8022A (1/88)
DO-22
(88) Previous editions are obsolete.

Do Not Write Below This Line

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Form Approved OMB No. 2050-0039 (Expires 9-30-91)

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000189484 — Manifest Document No. 945145813

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DURHAM TRANSPORTATION INC.
P.O. BOX 948
ROSEMEAD, CA. 91770
SITE: 19984 MEEKLAND HAYWARD, CA.

4. Generator's Phone ( )

A. State Manifest Document Number 894945

B. State Generator's ID

5. Transporter 1 Company Name: H+H Ship Service Co.

6. US EPA ID Number: CAD000477116

C. State Transporter's ID

D. Transporter's Phone (415)

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
H+H Ship Service Co.
220 CHINA BASIN ST.
SAN FRANCISCO, CA. 94107

10. US EPA ID Number: CAD000477116

G. State Facility's ID

H. Facility's Phone (415) 543-4

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	State Waste No.
a. RESIDUE GASOLINE TANK (CALIFORNIA ONLY REGULATED WASTE)	01011	TP	06000	P	312
b. RESIDUE GASOLINE TANK (CALIFORNIA ONLY REGULATED WASTE)	01011	TP	05000	P	
c.					
d.					

J. Additional Descriptions for Materials Listed Above
Pumped out 6,000 gallon, 5,000 gallon tanks last containing gasoline.

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
APPROPRIATE protective clothing AND RESPIRATOR.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Michael Zetz — Signature — Month Day Year: 08/1 18 89

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Robert V. Petrucci — Signature — Month Day Year: 08 1 1 89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name — Signature — Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
(Rev 9-88) Previous editions are obsolete.

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Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DA
To: P.O. Box 400, Sacramento, CA 95812-0400

APPENDIX B

TAT

TESTING AND TECHNOLOGY

P.O. Box 4570
Vallejo, CA 94590
(707) 648-5014

1377 9th Avenue
San Francisco, CA 941224
(415) 472-0375

May 6, 1988

Jack Worthington
DURHAM TRANSPORTATION
93 Jackson Street
Hayward, CA 94544

Dear Jack:

I would like to take this opportunity to thank you for allowing TAT to be of service to you.

Enclosed are the reports for the underground storage tank tests performed on May 6, 1988 at 93 Jackson Street in Hayward. As you already know tank #3, the 5,000 gallon tank containing unleaded tested tight, and the results were well within the guidelines set forth by State regulations.

The test results on tanks #1 and #2 which are manifolded suggests a leak within 12" (+/-) grade.

I have sent a copy of these reports on to Hugh Murphy of the Alemeda County Health Department for your convenience.

If you have any further questions regarding this matter, please feel free to call me at: (415) 472-0375

Sincerely,

Susan T. Lee
Office Manager

STL/lob

Enclosures

CC: Tom Peacock, The Alemeda County Health Dept.

TESTING AND TECHNOLOGY
1377 9th Avenue
San Francisco, CA 94122
(415) 753-4464

INVOICE # 2257 TEST DATE 4/23/88

COMPANY NAME DURHAM TRANSPORTATION PHONE # (415) 889-7200

MAIL ADDRESS 93 JACKSON ST., HAYWARD, CA 94544

TANK ADDRESS 19984 MEEKLAND AVE., HAYWARD, CA

CONTACT NAME JACK WORTHINGTON PHONE #

PROPERTY OWNER SAME PHONE #

TANK INFORMATION

TANK #	[redacted]	[redacted]	THREE
PRODUCT	UNLEAD	REG	UNLEAD
CAPACITY	4,000	6,000	5,000
CONSTRUCTION	STEEL	STEEL	STEEL
DIAMETER	77"	96"	96"
FILL PIPE	42"	32"	45"
TANK BOTTOM DEPTH	119/123	128/133	141/147
PUMP TYPE	SUCTION	SUCTION	SUCTION
VAPOR RECOVERY	PHASE II(UNUSED)	PHASE II(UNUSED)	PHASE II(UNUSED)
TANK WATER	TRACE	0	0

TEST INFORMATION

TEST EQUIPMENT	HORNER	HORNER	HORNER
FULL SYST/TANK ONLY	------MANIFOLDED------		PASS
DATE TIME FILLED	4/22/88	4/23/88-7AM	4/22/88
GALLONS TO TOP OFF	N/A	N/A	N/A
GROUND WATER DEPTH	26'+	26'+	26'+
TANK BTM PRESSURE	4.13 PSI	4.39 PSI	4.65 PSI

RESULTS

PASS - FAIL	--------FAIL--------		PASS
LOSS RATE	--------.2641 GPH---		+.0086

COMMENTS TANK #1 AND #2 ARE MANIFOLDED ABOVE TANK TOP, PROBABLY THROUGH THE VAPOR RECOVERY PIPING. TEST SUGGESTS A LEAK WITHIN 12" (+/-) OF GRADE.

TESTING AND TECHNOLOGY

TEST REPORT HORNER 'EZY CHEK' LEAK DETECTOR

OMPANY DURHAM TRANSPORTATION DATE 4/23/88 INVOICE 2257 [redacted]

PRODUCT UNLEADED CAPACITY 4,000 MEASURED API 56.5 TEMPERATURE 63

ADJUSTED API 56.1 COEF OF EXPANSION .00066249 TEMP SHIFT FACTOR 2.650

OTHER 40 GALLONS ADDED AT 14:00 TO OVERFILL TANK FOR TEST

IME	TEST HEIGHT	CHART GAIN #'S	CHART LOSS	LEVEL FACTR	LEVEL RESLT	TEMP STRT	TEMP END	GAIN LOSS	TEMP FACTR	TEMP RESULT	15 MIN RESULT IN GAL	HOURLY RESULT GAL/HR
:45						.860	.860	0	2.650	0		
7:00						.860	.859	-.001		-.0026		
7:15						.859	.858	-.001		-.0026		
:30						.858	.857	-.001		-.0026		
:45						.857	.856	-.001		-.0026		
:30						.856	.855	-.001		-.0026		
:45						.855	.852	-.003		-.0078		
:00						.852	.850	-.002		-.0053		
:15						.850	.848	-.002		-.0053		
:30						.848	.848	0		0		

TESTED BY JACK A. WURTS

OMMENTS TANK #1 AND #2 MANIFOLDED - TEMPERATURE MEASUREMENT TAKEN ON TANK #1, TEMPERATURE AND LEVEL MEASUREMENTS TAKEN ON TANK #2.

IS DATA FOR THIS TEST MEETS NFPA 329 STANDARDS. THE EQUIPMENT USED TO GENERATE HIS DATA IS ABLE TO DETECT A PRODUCT LOSS AT THE RATE OF 0.05 GALLONS PER HOUR. HIS IS NOT TO BE CONSTRUED AS AN ALLOWABLE LEAK RATE, BUT RATHER AS AN ACCURACY OLERANCE OF THE TESTING EQUIPMENT WHICH ALLOWS FOR THE MANY VARIABLES INVOLVED. AT GUARANTEES ONLY THAT THE DATA FOR THIS REPORT MEETS NFPA CRITERIA ON THE DAY F THIS TEST, TAT MAKES NO WARRANTY OF TANK AND/OR LINE FITNESS NOR DO WE ASSUME ESPONSIBILITY FOR ANY LEAKAGE WHICH MAY HAVE OCCURRED AS A RESULT OF THIS TEST.

TESTING AND TECHNOLOGY

TEST REPORT HORNER 'EZY CHEK' LEAK DETECTOR

COMPANY DURHAM TRANSPORTATION DATE 4/23/88 INVOICE 2257 TANK # 2

PRODUCT REGULAR CAPACITY 6,000 MEASURED API 58 TEMPERATURE 64

ADJUSTED API 56.3 COEF OF EXPANSION .00066356 TEMP SHIFT FACTOR 3.981

CALIBRATING ROD .05 DIVIDED BY # LINES 20 = CHART CALIB FACTOR .0025

CALIBRATING ROD .05 DIVIDED BY # LINES 21.6 = CHART CALIB FACTOR .0026

OTHER 40 GALLONS ADDED AT 14:00 TO OVERFILL TANK FOR TEST

TIME	TEST HEIGHT	CHART #'S		GAIN LOSS	CHART FACTR	LEVEL RESLT	TEMP STRT	TEMP END	GAIN LOSS	TEMP FACTR	TEMP RESULT	15 MIN RESULT IN GAL	HOURLY RESULT GAL/HR
6:45	+13"	75	76	+1	.0026	+.0026	.022	.027	+.005	3.981	+.0199	-.0173	
7:00	+13"	76	73	-3		-.0078	.027	.034	+.007		+.0279	-.0331	
7:15	+13"	73	74	+1		+.0026	.034	.042	+.008		+.0318	-.0266	
7:30	+13"	74	71	-3		-.0078	.042	.047	+.005		+.0199	-.0251	-.1021
7:45	+13"	71	70	-1		-.0026	.047	.052	+.005		+.0199	-.0199	-.1047
8:30	+36"	58	38	-20	.0025	-.0500	.065	.070	+.005		+.0199	-.0673	
8:45	+36"	38	18	-20		-.0500	.070	.075	+.005		+.0199	-.0623	
9:00	+36"	X	70	X		X	.075	.081	+.006		+.0239	X	
9:15	+36"	70	50	-20		-.0500	.081	.086	+.005		+.0199	-.0646	
9:30	+36"	50	30	-20		-.0500	.086	.091	+.005		+.0199	-.0699	-.2641

RESULTS CERTIFIED TIGHT NO AT TEST HEIGHT OF +13" LOSS RATE (GPH) -.1047 (+/-)

AT TEST HEIGHT OF +36" LOSS RATE (GPH) -.2641 (+/-)

TESTED BY _____
JACK A. WURTS

COMMENTS TEST INDICATES A LEAK IN THE PIPING WITHIN 12" (+/-) OF GRADE.

THE DATA FOR THIS TEST MEETS NFPA 329 STANDARDS. THE EQUIPMENT USED TO GENERATE THIS DATA IS ABLE TO DETECT A PRODUCT LOSS AT THE RATE OF 0.05 GALLONS PER HOUR. THIS IS NOT TO BE CONSTRUED AS AN ALLOWABLE LEAK RATE, BUT RATHER AS AN ACCURACY TOLERANCE OF THE TESTING EQUIPMENT WHICH ALLOWS FOR THE MANY VARIABLES INVOLVED. WE GUARANTEES ONLY THAT THE DATA FOR THIS REPORT MEETS NFPA CRITERIA ON THE DAY OF THIS TEST. WE MAKES NO WARRANTY OF TANK AND/OR LINE FITNESS NOR DO WE ASSUME RESPONSIBILITY FOR ANY LEAKAGE WHICH MAY HAVE OCCURRED AS A RESULT OF THIS TEST.

TESTING AND TECHNOLOGY

TEST REPORT HORNER 'EZY CHEK' LEAK DETECTOR

COMPANY DURHAM TRANSPORTATION DATE 4/23/88 INVOICE 2257 TANK # 3

PRODUCT UNLEAD CAPACITY 5,000 MEASURED API 56.5 TEMPERATURE 63

ADJUSTED API 56.1 COEF OF EXPANSION .00066249 TEMP SHIFT FACTOR 3.312

CALIBRATING ROD .05 DIVIDED BY # LINES 19.3 = CHART CALIB FACTOR .0027

OTHER 12 GALLONS ADDED AT 09:30 TO OVERFILL TANK FOR TEST

TIME	TEST HEIGHT	CHART #'S		GAIN LOSS	CHART FACTR	LEVEL RESLT	TEMP STRT	TEMP END	GAIN LOSS	TEMP FACTR	TEMP RESULT	15 MIN RESULT IN GAL	HOURLY RESULT GAL/HR
4:30	+8"	43	82	+39	.0027	+.1053	.429	.441	+.012	3.312	+.0397	+.0656	
4:45	+8"	42	63	+21		+.0567	.441	.456	+.015		+.0497	+.0070	
5:00	+8"	63	81	+18		+.0486	.456	.471	+.015		+.0497	-.0011	
5:15	+8"	81	99	+18		+.0486	.471	.483	+.012		+.0397	+.0089	
5:30	+8"	15	33	+18		+.0486	.483	.497	+.014		+.0464	+.0022	+.0192
5:45	+8"	34	52	+18		+.0486	.497	.510	+.013		+.0431	+.0055	+.0177
6:00	+8"	52	72	+20		+.0540	.510	.521	+.011		+.0364	+.0176	+.0342
6:15	+8"	72	88	+16		+.0432	.521	.534	+.013		+.0430	+.0002	+.0255
6:30	+8"	18	33	+15		+.0405	.534	.546	+.012		+.0397	+.0008	+.0241
6:45	+8"	33	49	+16		+.0432	.546	.557	+.011		+.0364	+.0068	+.0254
7:00	+8"	49	64	+15		+.0405	.557	.569	+.012		+.0397	+.0008	+.0086

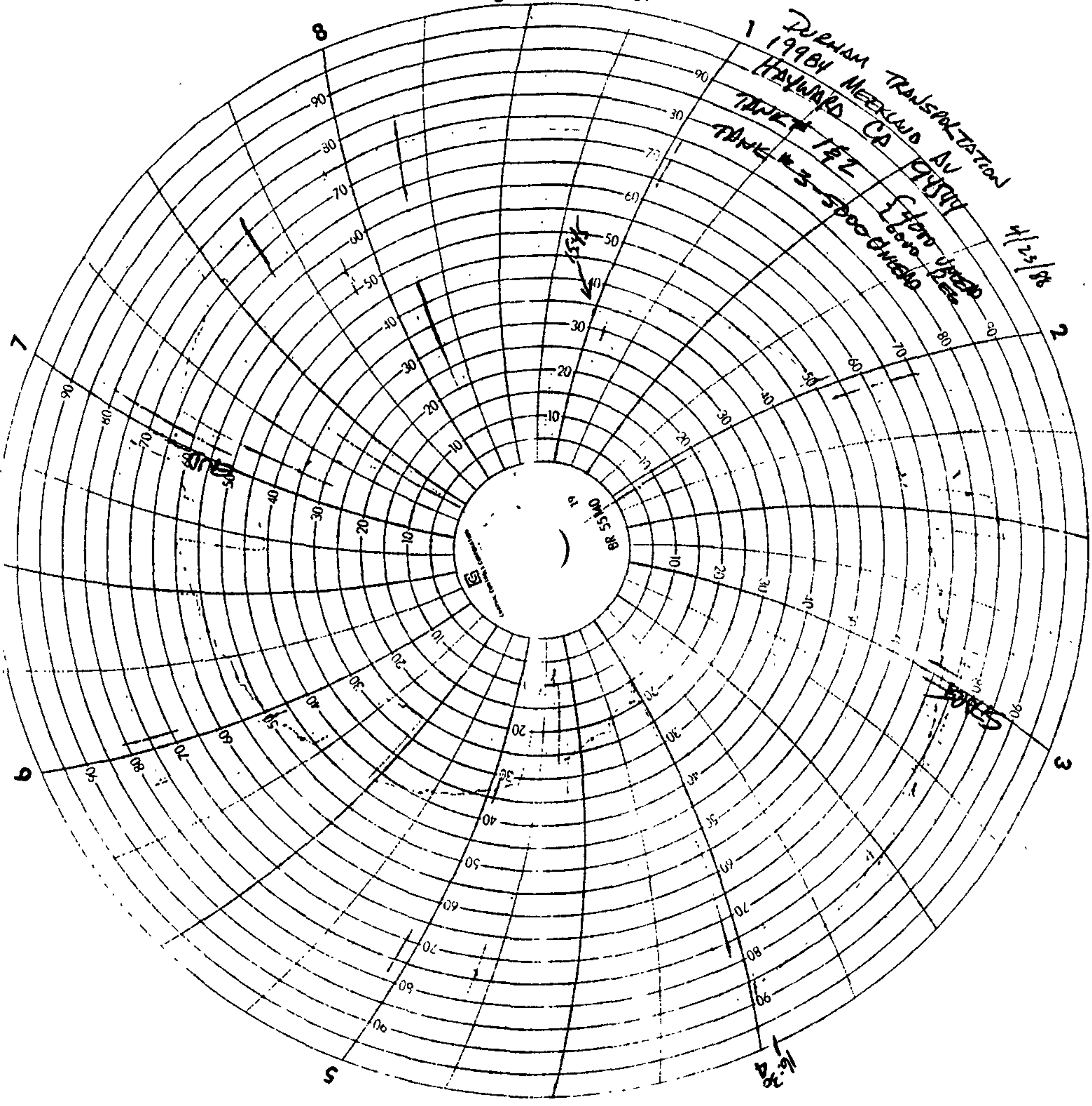
RESULTS CERTIFIED TIGHT YES AT TEST HEIGHT OF +8" LOSS RATE (GPH) +.0086 (+/-).

TESTED BY JACK A. WURTS

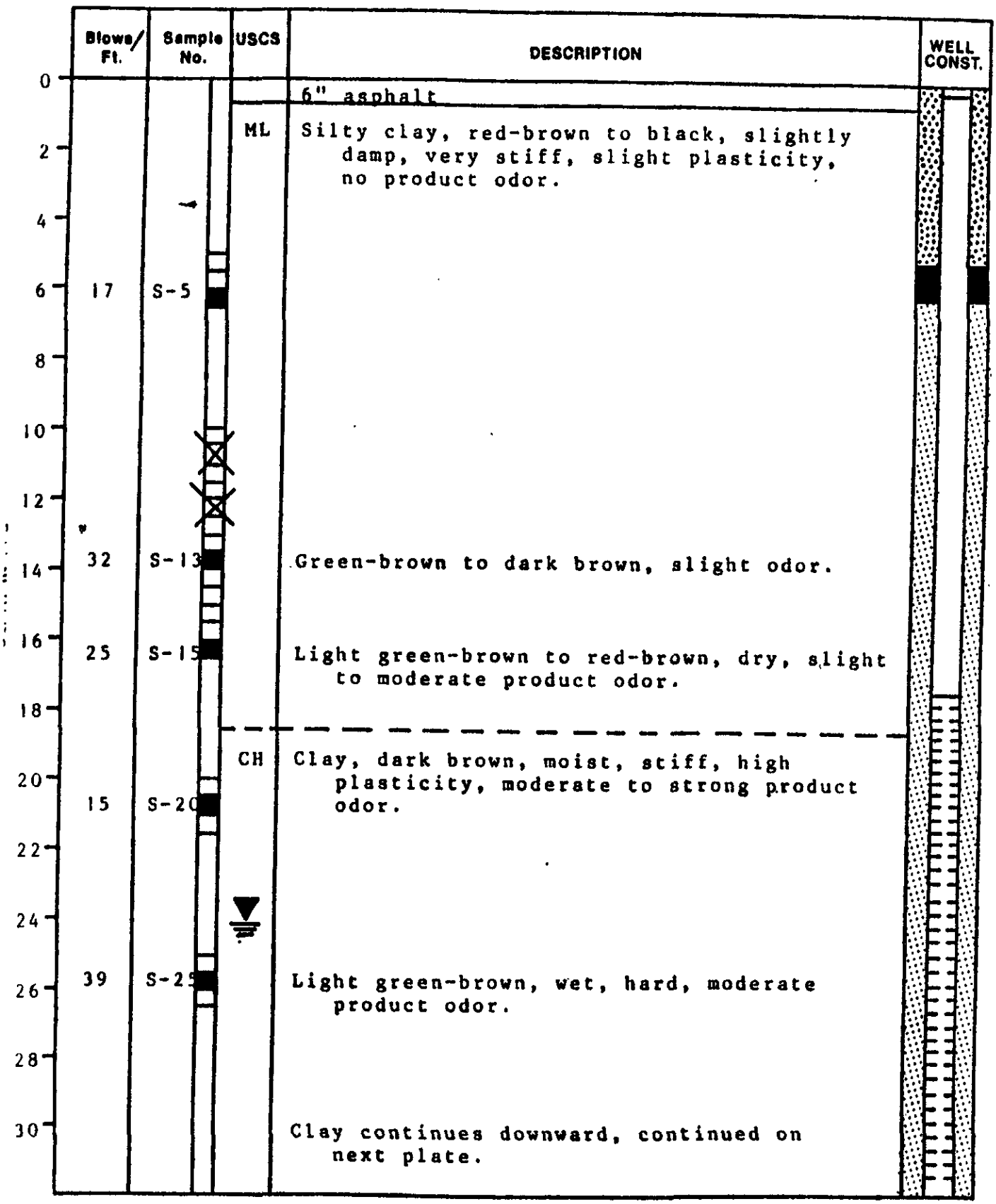
COMMENTS

THE DATA FOR THIS TEST MEETS NFPA 329 STANDARDS. THE EQUIPMENT USED TO GENERATE THIS DATA IS ABLE TO DETECT A PRODUCT LOSS AT THE RATE OF 0.05 GALLONS PER HOUR. THIS IS NOT TO BE CONSTRUED AS AN ALLOWABLE LEAK RATE, BUT RATHER AS AN ACCURACY TOLERANCE OF THE TESTING EQUIPMENT WHICH ALLOWS FOR THE MANY VARIABLES INVOLVED. TAT GUARANTEES ONLY THAT THE DATA FOR THIS REPORT MEETS NFPA CRITERIA ON THE DAY OF THIS TEST, TAT MAKES NO WARRANTY OF TANK AND/OR LINE FITNESS NOR DO WE ASSUME RESPONSIBILITY FOR ANY LEAKAGE WHICH MAY HAVE OCCURRED AS A RESULT OF THIS TEST.

Testing And Technology



APPENDIX C



Applied GeoSystems

PROJECT NO. 8660-1

LOG OF BORING B1/MW-1

Harbert Transportation
Hayward, California

PLATE

P-4

Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
		CH	Clay, light green-brown, wet, hard, high plasticity, moderate product odor.	
18	S-30		Dark green-brown, very stiff.	
38	S-35		Red-brown, hard, slight product odor.	
				CAVED
			Total depth = 41.5 feet.	

30
32
34
36
38
40
42

Applied GeoSystems

LOG OF BORING B-1/MW-1

Harbert Transportation
Hayward, California

PLATE P-5

PROJECT NO. 8660-1

BORING LOCATION: Meekland and Blossom Ave		ELEVATION AND DATUM	
DRILLING CONTRACTOR: HEW Drilling	DRILLER: Jeff	DATE STARTED: 11-28-89	DATE FINISHED: 11-28-89
DRILLING EQUIPMENT: CME 55		COMPLETION DEPTH (FT): 40	ROCK DEPTH (FT): -
DIAMETER OF BORING		NO. OF UNDIST. SAMPLES: 7	CORE
PURPOSE OF BORING: Monitoring Well		WATER FIRST DEPTH(FT): 34	COMPL.
SAMPLING EQUIPMENT		LOGGED BY: J. Alt	CHECKED BY:
COMMENTS			

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES NO.	SAMPLES TYPE	SAMPLES BLOW COUNT	SAMPLES DRILLING RATE/TIME	REMARKS
	Fill						
	dark brown clay, dry, adobe						
5	reddish brown fine sandy silt with some clay, dry				6 8 10		
	Tan sandy silt to silty sand. Thin lens of coarse sand at 11 ft.; dry, becoming moist at 15 ft.				3 5 8		
15					2 4 6		
20	Gray clay, moist, mottled brown, moderately plastic				2 4 5		
25					4 7 10		
30							

Project Durham Site

Project No.

LOG OF BORING

B-3 /MW3

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES NO.	SAMPLES TYPE	SAMPLES BLOW COUNT	DRILLING RATE/ TIME	REMARKS
30	Gray clay mottled brown, moist, moderately plastic.				4 4 5		
35	Brown clayey sand and gravel, grades downward to brown clayey silt.				5 7 11		
40	Bottom of boring No sample						
45							
50							
55							
60							
65							
70							

Project

Project No.

CONT. LOG OF BORING B-3

BORING LOCATION: Meekland and Blossom Ave		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: HEW Drilling	DRILLER: Jeff	DATE STARTED: 11-28-89	DATE FINISHED: 11-28-89
DRILLING EQUIPMENT: CME 55		COMPLETION DEPTH (FT): 40	ROCK DEPTH (FT): -
DIAMETER OF BORING:		NO. OF UNDIST. SAMPLES: 7	CORE:
PURPOSE OF BORING: Monitoring Well		WATER DEPTH(FT): FIRST	COMPL.:
SAMPLING EQUIPMENT:		LOGGED BY: J. Alt	CHECKED BY:
COMMENTS:			

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES NO.	SAMPLES TYPE	BLOW COUNT	DRILLING RATE/TIME	REMARKS
	Fill - Sand and Gravel						
5	Dark brown clay, dry				8 6 4		
	Tan silty clay, dry						
10	brown sandy gravel				5 6 9		
15	Gray clayey silt to silty clay, locally sandy				2 4 4		
20	Same as above moist				1 4 4		
25	Same as above with brown mottlings				4 5 6		
30							

Project Durham Site

Project No.

LOG OF BORING B-4 /mw4

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES NO.	SAMPLES TYPE	SAMPLES BLOW COUNT	DRILLING RATE/ TIME	REMARKS
30	Gray clay, moist, mottled brown				4 7 13		
35	Brown silty clay, wet				6 7 9		
40	bottom of boring						
45							
50							
55							
60							
65							
70							

Project

Project No.

CONT. LOG OF BORING

B-4

BORING LOG

Project: Durham Transportation
Location: see location map
Job #: 90-4
Geologist/Engineer: J. Alt
Drill Agency: HEW Drilling

Hole/Well #: MW-5
Diameter of Drill Hole: 8"
Total Depth of Hole: 45 ft.
Date Started: Aug. 31, 1990
Date Completed: Aug. 31, 1990

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	N-VALUE	SAMPLE	GRAPHIC SYMBOL	DESCRIPTION
0					gravelly sand-fill, dry dark brown clay-soil horizon
5	4" solid PVC pipe	14	1		medium brown sandy clay, moist
10	grout	7	2		blue gray sandy clay grading to a clayey sand, moist
15		12	3		grayish brown sandy clay, moist, scattered small gravel
20		4	4		grayish brown fine to medium grained sand, moist light brown clay, moist plastic, reddish brown mottling

BORING LOG

PROJECT: Durham Transportation
JOB NUMBER: 90-4

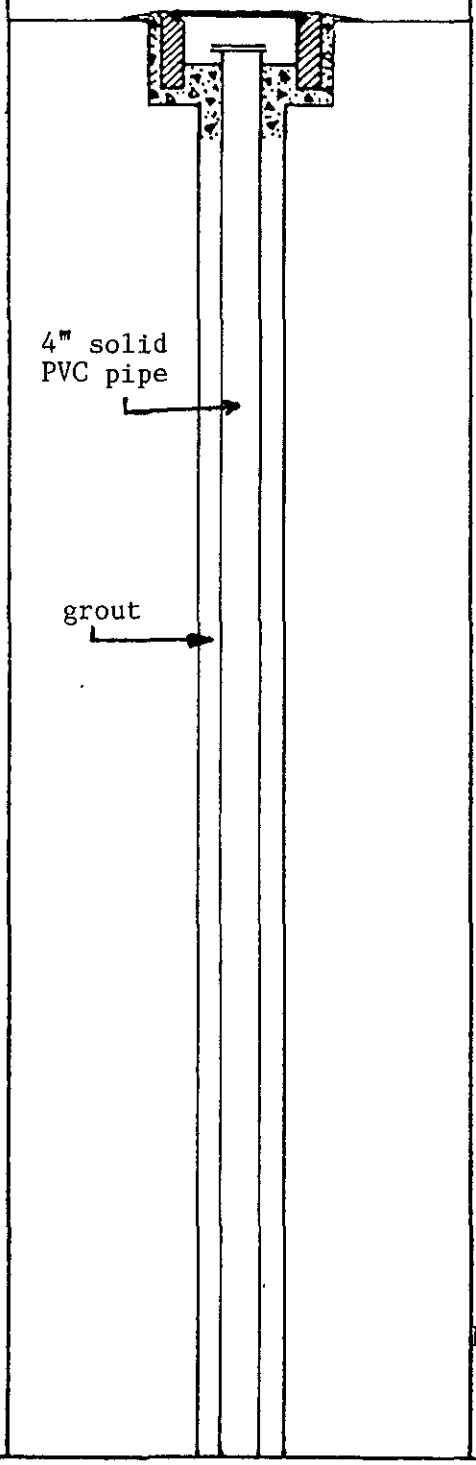
HOLE / WELL # : MW-5
PAGE : 2 OF 2

DEPTH (FEET)	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS / FOOT	USCS SYMBOL	DESCRIPTION
25	bentonite seal	5	18		gray motted brown clay, moist to damp, plastic
					gray clay; motted brown, moist, plastic
30	sand pack	6	6		
35	4" slotted PVC casing	7	16		
					brown clay, moist, silty, moderately plastic
40		8	15		
45		9	8		tight brown, fine to medium grained sand, wet, dark ~~b~~rown

BORING LOG

Project: Durham Transportation
Location: see location map
Job #: 90-4
Geologist/Engineer: J. Alt
Drill Agency: HEW Drilling

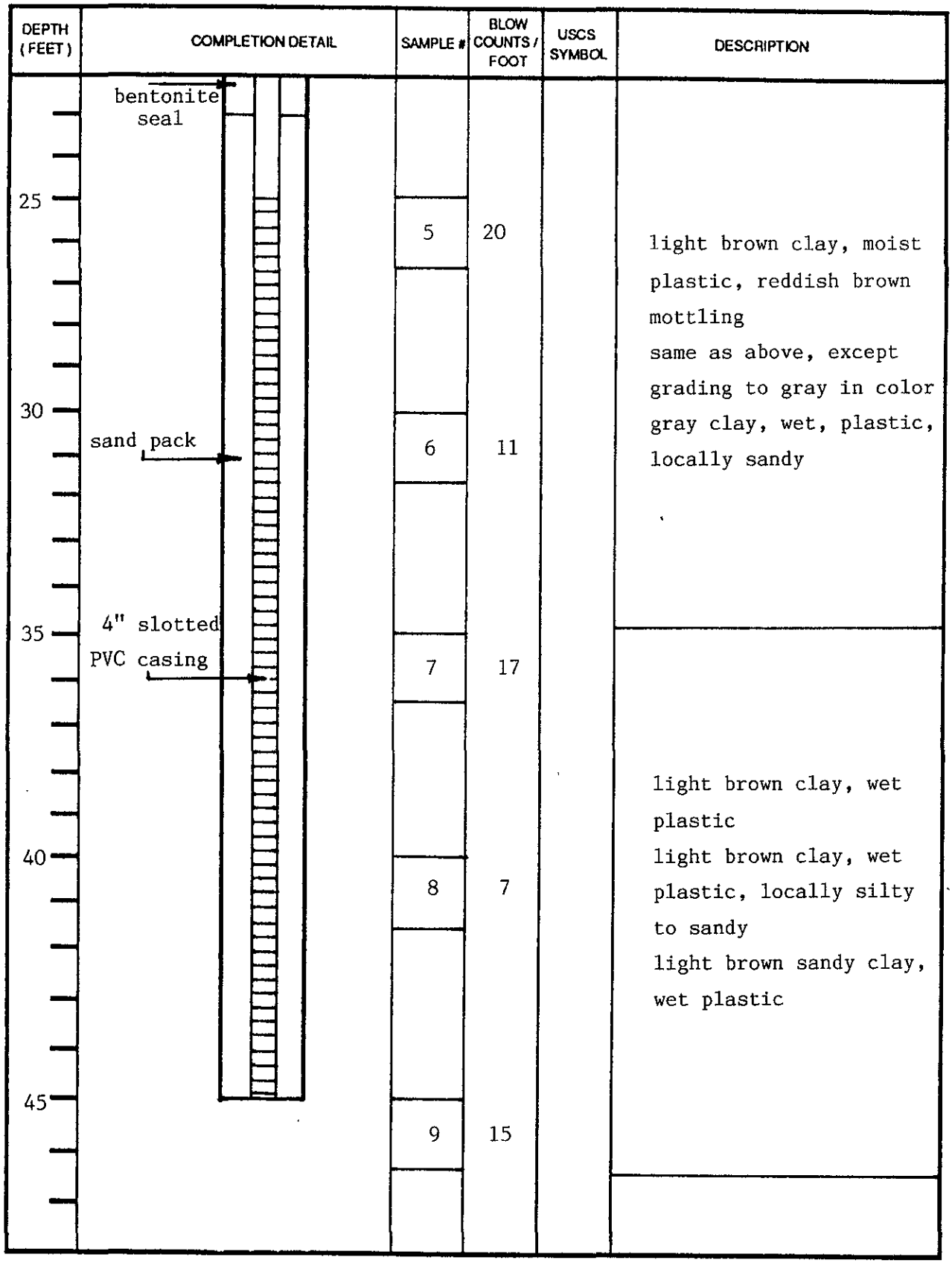
Hole/Well #: MW-6
Diameter of Drill Hole: 8 inches
Total Depth of Hole: 45 ft.
Date Started: Aug. 30,1990
Date Completed: Aug. 30, 1990

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	N-VALUE	SAMPLE	GRAPHIC SYMBOL	DESCRIPTION
0					3" asphalt sand and gravel
5	4" solid PVC pipe	11	1		
10	grout	12	2		medium brown silty to sandy clay, moist, locally scattered gravel up to 1/2" in size medium brown clay to clayey silt
15		7	3		brown fine-grained sand, loose, moist
20		NA	4		gray motted brown clay, moist to damp, plastic

BORING LOG

PROJECT: Durham Transportation
JOB NUMBER: 90-4

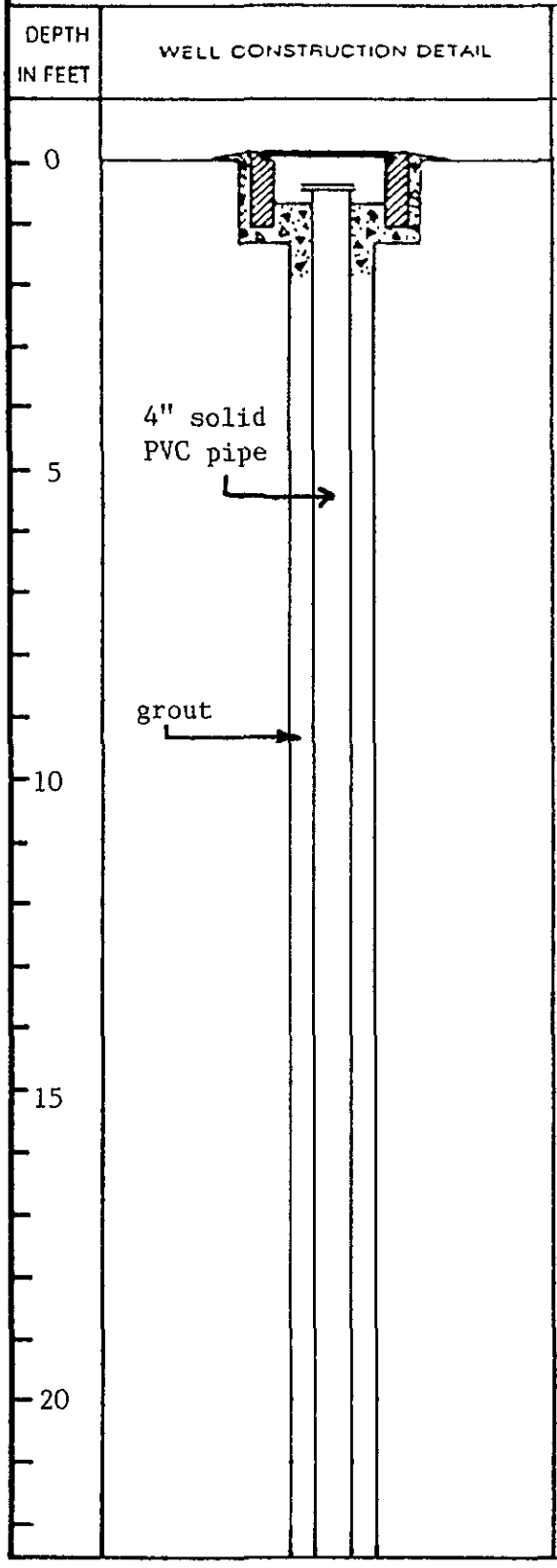
HOLE / WELL #: MW-6
PAGE: 2 OF 2



BORING LOG

Project: Durham Transportation
Location: see location map
Job #: 90-4
Geologist/Engineer: J. Alt
Drill Agency: HEW Drilling

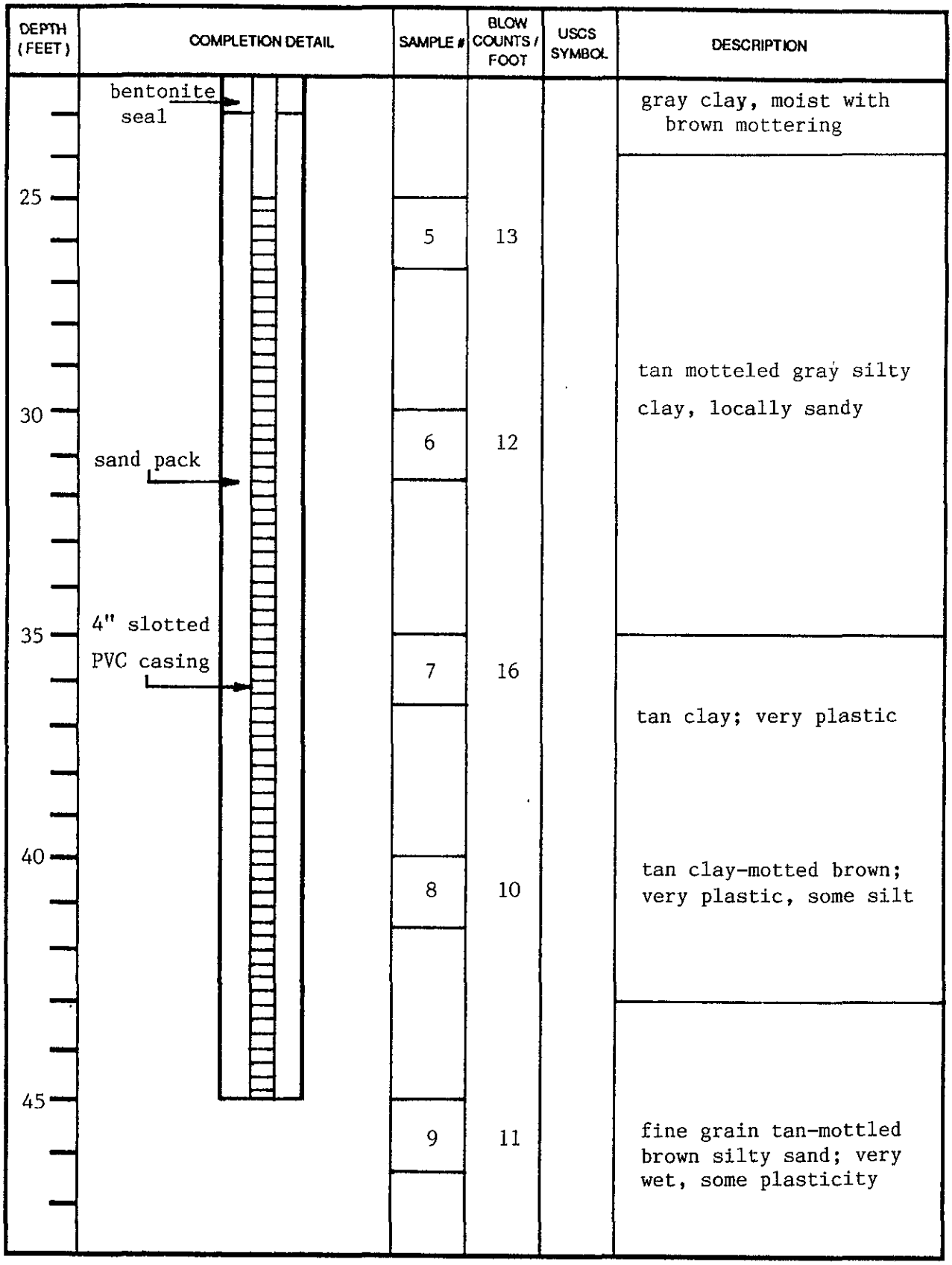
Hole/Well #: M W - 7
Diameter of Drill Hole: 8"
Total Depth of Hole: 45 ft.
Date Started: Oct. 1, 1990
Date Completed: Oct. 1 , 1990



BORING LOG

PROJECT: Durham Transportation
JOB NUMBER: 90-4

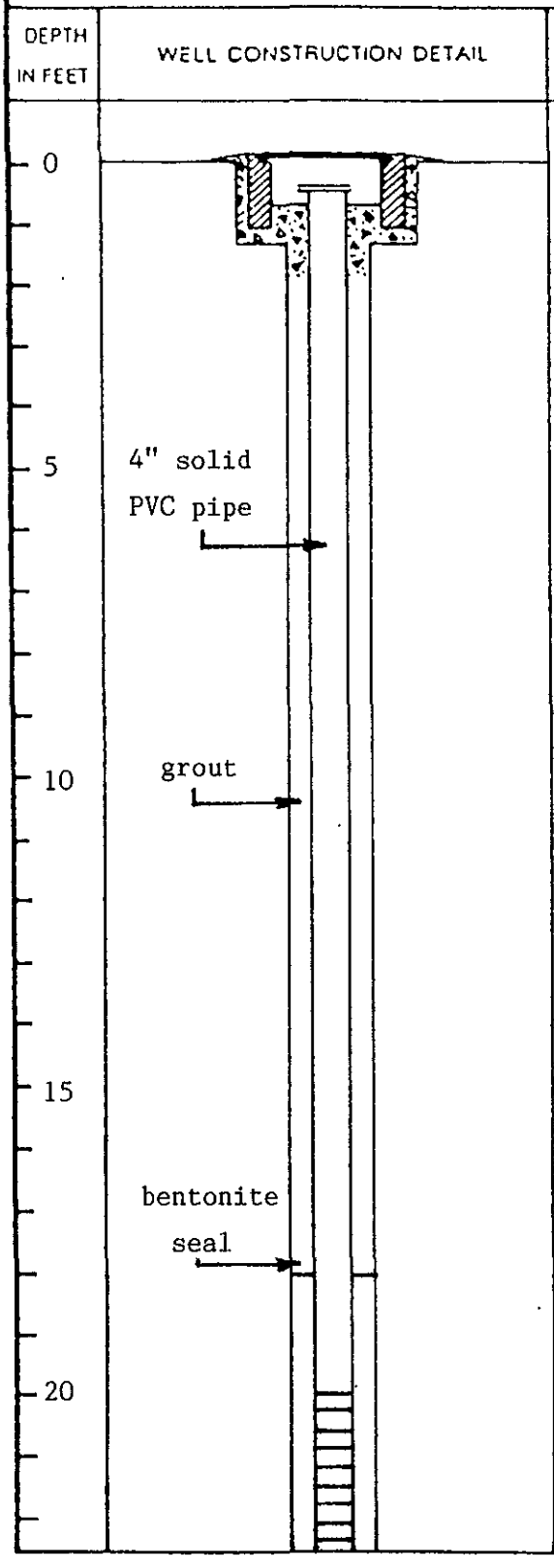
HOLE / WELL # : MW-7
PAGE : 2 OF 2



BORING LOG

Project: Durham Transportation
Location: see location map
Job #: 91-6
Geologist/Engineer: J. Alt
Drill Agency: HEW Drilling

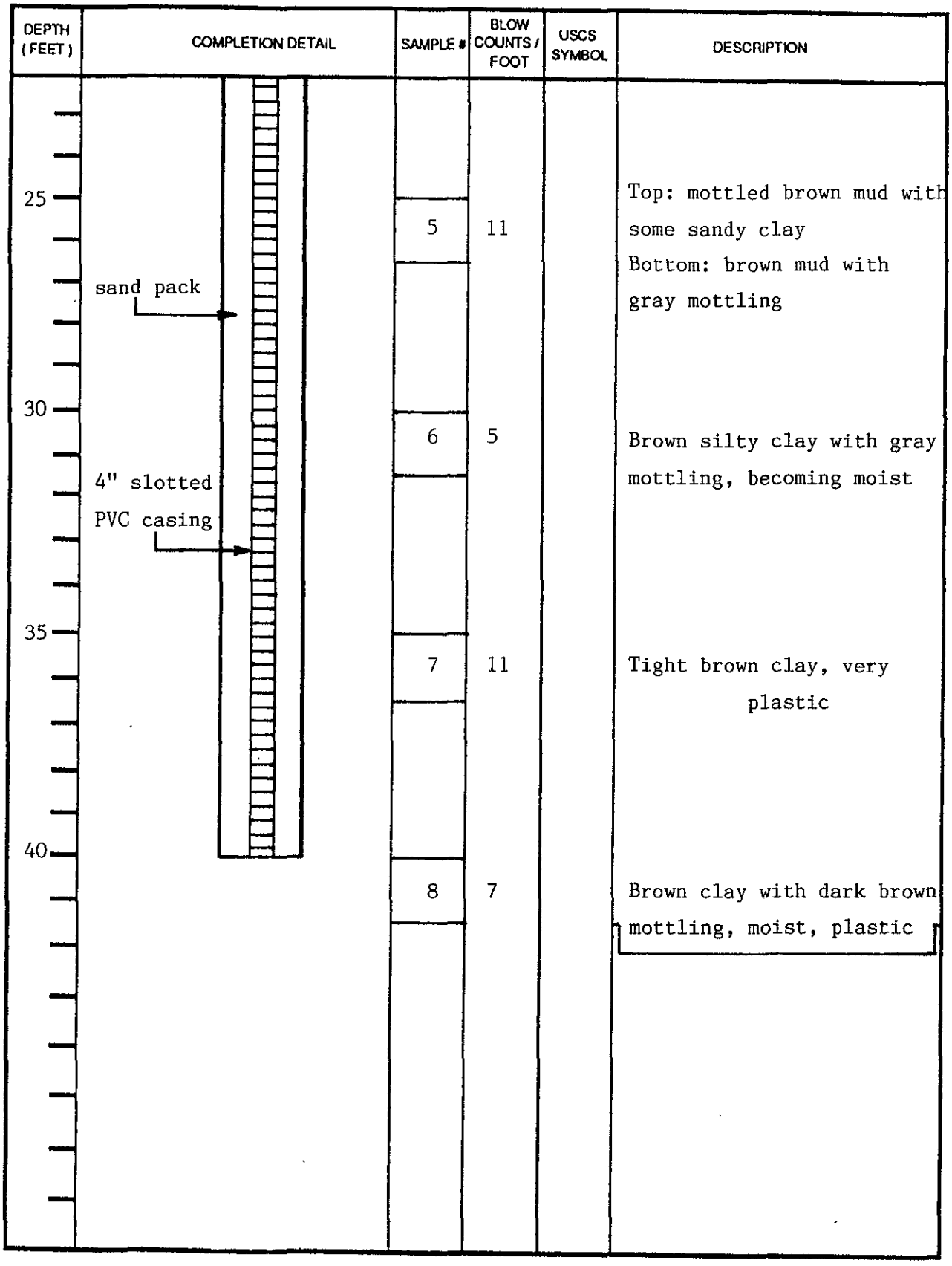
Hole/Well #: MW-8
Diameter of Drill Hole: 10"
Total Depth of Hole: 40'
Date Started: Feb. 13, 1991
Date Completed: Feb. 13, 1991



BORING LOG

PROJECT: Durham Transportation
JOB NUMBER: 91-6

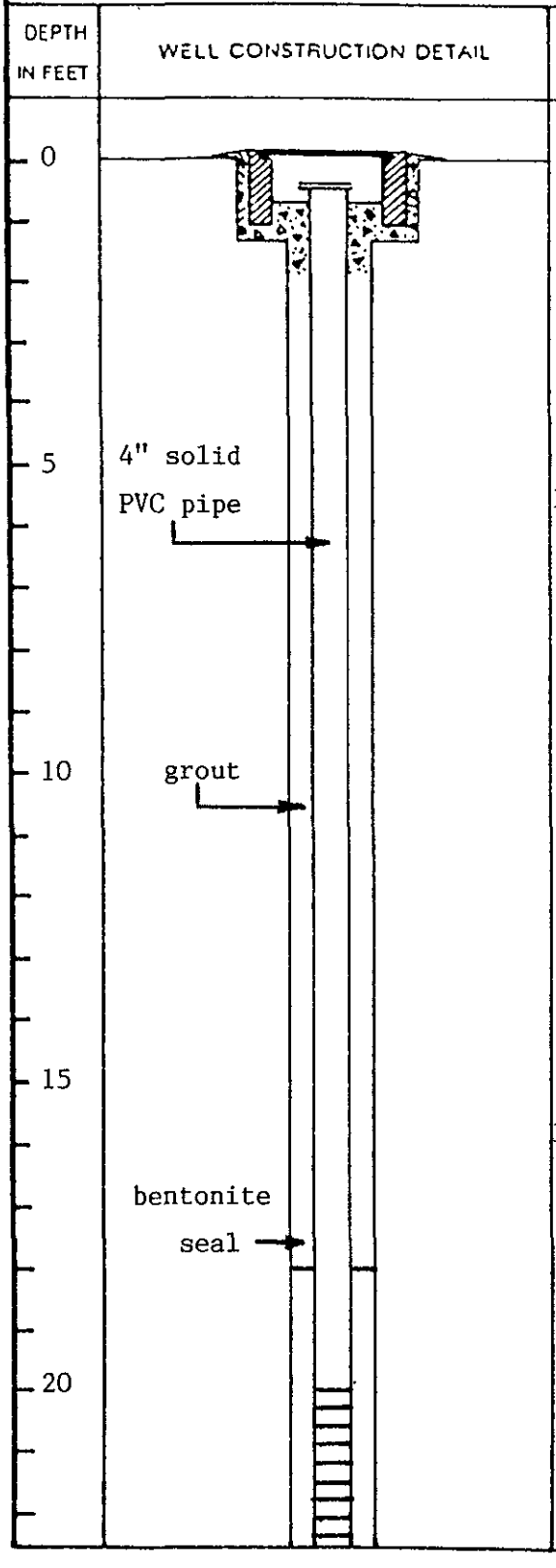
HOLE / WELL # : MW-8
PAGE : 2 OF 2



BORING LOG

Project: Durham Transportation
Location: see location map
Job #: 91-6
Geologist/Engineer: J. Alt
Drill Agency: HEW Drilling

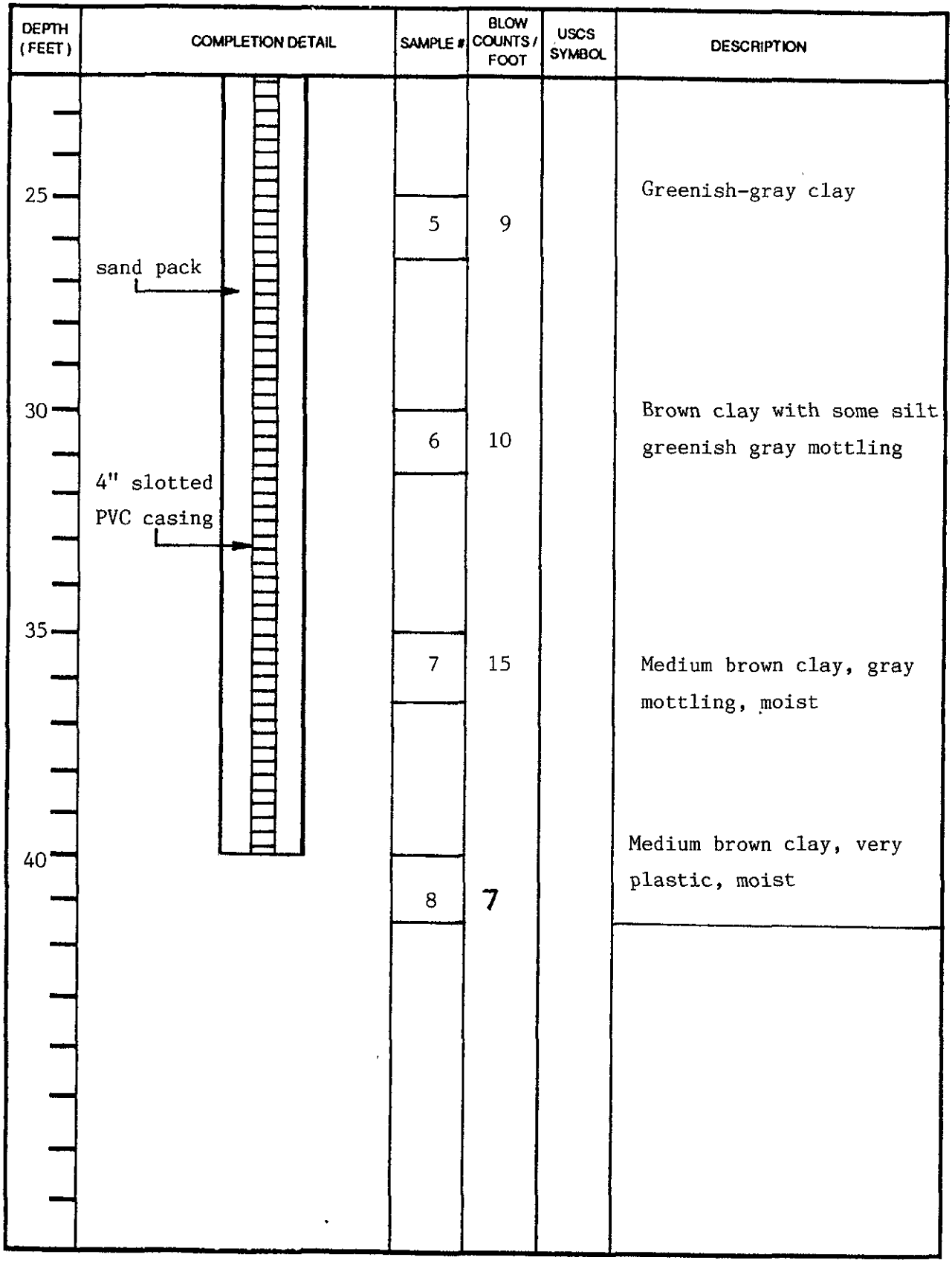
Hole/Well #: MW-9
Diameter of Drill Hole: 10"
Total Depth of Hole: 40'
Date Started: Feb. 13, 1991
Date Completed: Feb. 13, 1991



BORING LOG

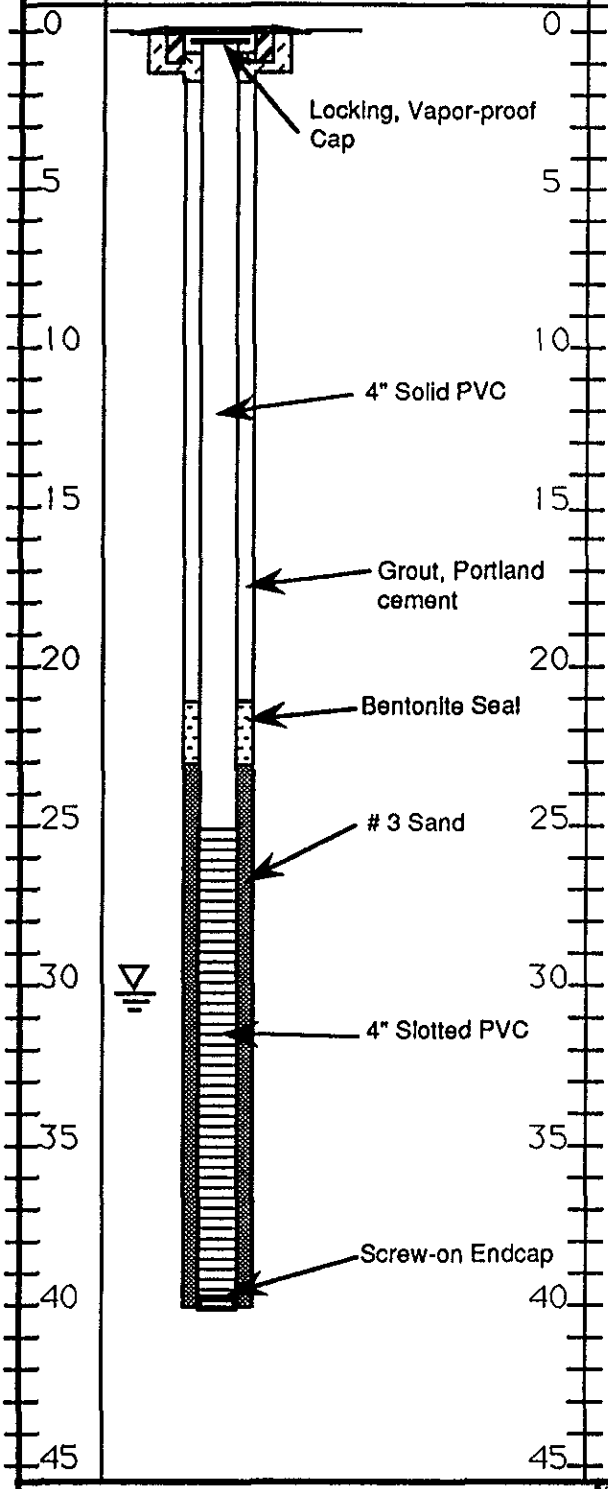
PROJECT: Durham Transportation
JOB NUMBER: 91-6

HOLE / WELL #: MW-9
PAGE: 2 OF 2



BORING LOG AND RECORD OF MONITORING WELL INSTALLATION

Figure 1
MW-10



N-VALUE	SAMPLE #	DESCRIPTION
		4" Asphalt over 1" Gravel Base, Sandy
		Dark brown clay, Organic Plastic, Moist
		Reddish brown clay, Moist, Moderately plastic
4/4/10		Light brown clayey silt, Moist, No odor Grades to silty clay
4/4/8		Light brown clayey sand, Scattered coarse sand to pebbles, Moist Grading to sandy gravel
3/3/5		Light brown sandy to silty clay Plastic, Moist Thin (~2" thick) lenses of coarse sand No hydrocarbon odor
4/5/7	1	Gray clay with brown mottling Moist, moderately plastic Abundant root holes No hydrocarbon odor
4/8/9	2	Gray clay, brown mottling Moist, Plastic
3/7/9	3	Light brown clayey fine sand, Grey mottling, Faint hydrocarbon odor (locally moderate), Scattered pebbles
5/10/12		Light brown clayey fine sand to fine sandy clay, Moist (not saturated), Very faint hydrocarbon odor, Grey mottling, Oxidized roots
		End of Boring

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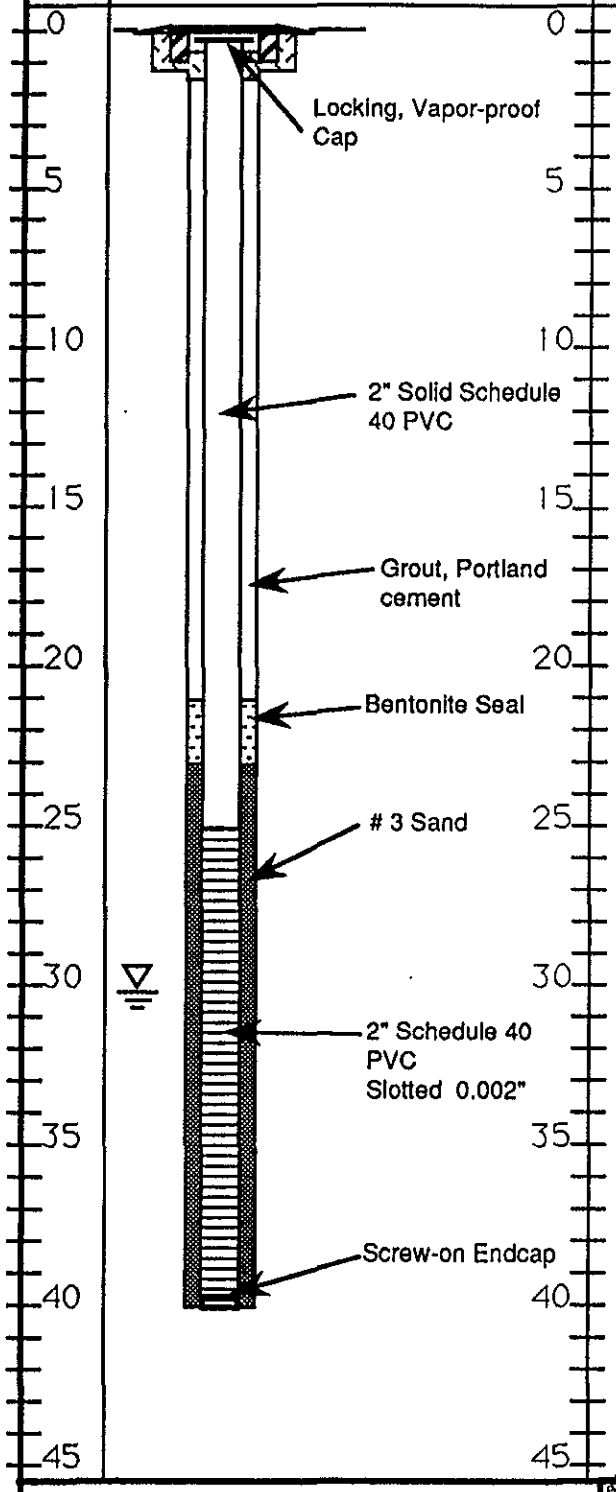
Project	Durham Transportation	Hole/well #	10
Location	Apartment, 19875 Meekland Ave	Diameter of Drill Hole	10"
Job #	91-15	Total Depth of Hole	40'
Geologist/Engineer	J. N. Alt	Date Started	1/21/92
Driller	HEW	Date Completed	1/21/92

BORING LOG AND RECORD OF MONITORING WELL INSTALLATION

Figure 2
MW-11



N-VALUE	SAMPLE #	DESCRIPTION
		4" Concrete over 6" Base Dark brown clay, Moist, Plastic
10/10/11		Light brown silty fine sand, Moist
8/10/10		Light brown clayey silt with some fine sand, Moist, No hydrocarbon odor
4/6/8		Medium brown silty clay Moderately plastic, Moist, No hydrocarbon odor, Grades into clayey to silty sand
3/5/5	1	Gray clay, Moist, Plastic, No hydrocarbon odor
8/12/15		Lost most of sample-- Tan sandy clay with gray mottling, Very faint hydrocarbon odor
4/6/7	2	Tan sandy clay, Wet, Grey mottling, Moderate hydrocarbon odor
8/9/10	3	Medium brown silty to fine sandy clay, Grey mottling, Moist to wet, No hydrocarbon odor
		End of Boring

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Project	Durham Transportation	Hole/well #	11
Location	Residence, 19870 Meekland Ave.	Diameter of Drill Hole	8"
Job #	91-15	Total Depth of Hole	40'
Geologist/Engineer	J. N. Alt	Date Started	1/24/92
Driller	HEW	Date Completed	1/24/92

BORING LOG

Project: Durham Transportation
Location: see location map
Job #: 90-4
Geologist/Engineer: J. Alt
Drill Agency: HEW Drilling

Hole/Well #: B-1
Diameter of Drill Hole: 8 inches
Total Depth of Hole: 25 ft.
Date Started: Oct. 1,1990
Date Completed: Oct. 1,1990

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	N-VALUE	SAMPLE	GRAPHIC SYMBOL	DESCRIPTION
0					backfill gravel, etc.
5		15	1		
10	boring log only; no well was installed	13	2		fine grain sand green with hydrocarbons; slightly silty the first foot, brown clay with black streaks
15		10	3		gravel fill in first foot, next comes green soil (silty, sandy clay), odor of old petroleum, last foot sandy clay gray (slight green tinge), some plastcity
20		8	4		dark gray silty clay; very plastic mottled brown down to approximately 21'; has greenish tint.

BORING LOG

PROJECT: Durham Transportation
JOB NUMBER: 90-4

HOLE / WELL #: B-1
PAGE : 2 OF 2

DEPTH (FEET)	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS / FOOT	USCS SYMBOL	DESCRIPTION
25		5	15		gray with slight green tinge first 10". brown clay, mottled green and orange; very plastic soil, still pretty dry.

APPENDIX D

SOIL CHEMICAL DATA
DURHAM TRANSPORTATION--MEEKLAND PROJECT

BORING 1
Installed 10/1/90

Depth (ft)	5.5	15.5	25.5
Gasoline (mg/Kg)			150
Diesel (mg/Kg)			3.7
Motor Oil (mg/Kg)	*13		
Benzene (ug/Kg)		40	1200
Ethylbenzene (ug/Kg)		5.8	2100
Toluene (ug/Kg)	36	34	2400
Xylenes (ug/Kg)		25	8400
1,2-Dichloroethane (ug/Kg)		4	41

MONITORING WELL 1
Installed 6/30/86

Depth (ft)	20
Gasoline (mg/Kg)	**240

MONITORING WELL 3
Installed 11/28/89

Depth (ft)	20.5	25.5	30.5
Gasoline (mg/Kg)		52	23
Diesel (mg/Kg)			
Benzene (ug/Kg)	130	440	540
Ethylbenzene (ug/Kg)		200	210
Toluene (ug/Kg)	22	480	188
Xylenes (ug/Kg)		930	400
Trichloroethene (ug/Kg)	200		

* The positive result for the Motor Oil analysis on this sample appears to be a lighter hydrocarbon than Diesel.

**Reported as total Hydrocarbons by Method 8020. Analysis performed by Applied Geosystems, Fremont, CA.

MONITORING WELL 4
Installed 11/28/89

Depth (ft)	15.5	20.5
Benzene (ug/Kg)	20	75
Ethylbenzene (ug/Kg)	13	26
Toluene (ug/Kg)	19	20
Xylenes (ug/Kg)		15

MONITORING WELL 5
Installed 8/31/90

Depth (ft)	5.5	10.5	20.5	45.5
Gasoline (mg/Kg)			560	
Diesel (mg/Kg)			6.4	
Benzene (ug/Kg)		37	9600	14
Ethylbenzene (ug/Kg)		3.5	7400	7.3
Toluene (ug/Kg)	3.9	16	22000	21
Xylenes (ug/Kg)		19	45000	34
1,2-Dichloroethane (ug/Kg)		2.4	61	

MONITORING WELL 6
Installed 8/30/90

Depth (ft)	20.5	30.5	45.5
Gasoline (mg/Kg)		23	1.2
Diesel (mg/Kg)		5.3	
Benzene (ug/Kg)	46	70	20
Ethylbenzene (ug/Kg)		60	15
Toluene (ug/Kg)		96	35
Xylenes (ug/Kg)		59	56
1,2-Dichloroethane (ug/Kg)		5.7	

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.

MONITORING WELL 7
Installed 10/1/90

Depth (ft)	AUGER	15.5	25.5	35.5	45.5
Gasoline (mg/Kg)	120				1.1
Diesel (mg/Kg)	23				
Benzene (ug/Kg)	310		43		7.1
Ethylbenzene (ug/Kg)	1700		3.4		12
Toluene (ug/Kg)	1400	15	4.4	27	36
Xylenes (ug/Kg)	6900		10	5.7	56
1,2-Dichloroethane (ug/Kg)	5.9				

MONITORING WELL 8
Installed 2/13/91

Depth (ft)	25	35
Toluene (ug/Kg)	3.3	28

MONITORING WELL 9
Installed 2/13/91

Depth (ft)	20	30	40
Gasoline (mg/Kg)	2.2	39	
Diesel (mg/Kg)		6	
Benzene (ug/Kg)	150	180	
Ethylbenzene (ug/Kg)	29	230	
Toluene (ug/Kg)	66	340	11
Xylenes (ug/Kg)	67	1000	8.2
1,2-Dichloroethane (ug/Kg)	7.9	11	

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.

MONITORING WELL 10
Installed 1/21/92

Depth (ft)	21	26	31
Gasoline (mg/Kg)	ND	52	ND
Diesel (mg/Kg)	ND	*11	ND
Benzene (ug/Kg)	4.4	ND	ND
Ethylbenzene (ug/Kg)	3.6	330	ND
Toluene (ug/Kg)	14	ND	2.5
Xylenes (ug/Kg)	18	1500	3.4
1,2-Dichloroethane (ug/Kg)	ND	ND	ND
Tetrachloroethene (ug/Kg)	ND	ND	ND

MONITORING WELL 11
Installed 1/24/92

Depth (ft)	21	30	35
Gasoline (mg/Kg)	ND	ND	ND
Diesel (mg/Kg)	ND	ND	ND
Benzene (ug/Kg)	4.3	ND	ND
Ethylbenzene (ug/Kg)	ND	3.9	ND
Toluene (ug/Kg)	8	4.1	4.5
Xylenes (ug/Kg)	ND	ND	ND
1,2-Dichloroethane (ug/Kg)	ND	ND	ND
Tetrachloroethene (ug/Kg)	ND	ND	ND

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.

APPENDIX E

GROUNDWATER CHEMICAL DATA
DURHAM TRANSPORTATION--MEEKLAND PROJECT

MONITORING WELL 1

	Jul-86	Mar-90	Jul-90	Oct-90	Jan-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	*42	27	27	43	22	42	46	27	27	33	41
Diesel(mg/L)	NA	NA	11	8.5	2.7	**3.1	**4.3	**4.3	**14	**11	**19
Benzene(ug/L)	5500	2700	4000	3400	3000	5100	6500	4400	3300	8900	5600
Ethylbenzene(ug/L)	NA	490	ND	1200	990	1200	830	1100	1200	1200	1300
Toluene(ug/L)	4900	840	1500	2700	1800	3700	2900	1400	1600	3500	2600
Xylenes(ug/L)	6100	800	4400	5300	2800	3200	3700	3200	3800	3700	4000
Lead (Total)(ug/L)	NA	NA	NA	9.0							
1,1-Dichloroethane(ug/L)	NA	16	ND	ND							
1,2-Dichloroethane(ug/L)	NA	ND	62	26	27	120	64	25	24	120	49
Trichloroethene(ug/L)	NA	ND	ND	ND							
Chlorobenzene(ug/L)	NA	ND	ND	1.4				ND			
Tetrachloroethene(ug/L)						ND	ND	ND	ND	ND	ND

*Reported as Total Hydrocarbons by method 602. Analysis performed by Applied Geosystems, Fremont, CA.

** The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel

MONITORING WELL 3

	Nov-89	Mar-90	Jul-90	Oct-90	Jan-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	29	12	7.3	6.2	4.6	8.3	6.6	6.3	4	7.4	3
Diesel(mg/L)	NA	NA	0.99	0.97	0.68	* 0.64	* 0.89	*1.7	*0.79	*1.8	*2.4
Benzene(ug/L)	4600	2300	5200	75	2200	2800	2000	2000	1200	730	190
Ethylbenzene(ug/L)	680	59	ND	7.5	220	370	250	410	250	370	ND
Toluene(ug/L)	1100	300	440	150	110	490	230	330	60	180	2.8
Xylenes(ug/L)	1100	490	480	250	89	760	380	550	200	640	410
Lead (Total(ug/L))	40	NA	NA	ND							
1,1-Dichloroethane(ug/L)	ND	26	ND	ND							
1,2-Dichloroethane(ug/L)	36	ND	67	48	40	43	29	27	22	19	30
Trichloroethene(ug/L)	ND	ND	ND	ND							
Chlorobenzene(ug/L)	ND	ND	ND	ND				ND			
Tetrachloroethene(ug/L)						ND	ND	ND	ND	ND	ND

MONITORING WELL 4

	Nov-89	Mar-90	Jul-90	Oct-90	Jan-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	ND	ND	ND	ND	0.08	1.4	0.13	ND	ND	0.78	ND
Diesel(mg/L)	NA	NA	ND	ND	ND	* 0.13	ND	ND	ND	*0.13	ND
Benzene(ug/L)	33	7.4	ND	ND	9.2	220	14	5.3	6.8	ND	ND
Ethylbenzene(ug/L)	1.3	2.0	ND	ND	2.4	72	3.3	1.0	1.3	51	ND
Toluene(ug/L)	1	2.0	ND	ND	1.7	ND	9.7	ND	ND	ND	ND
Xylenes(ug/L)	5.2	1.1	ND	ND	0.7	17	ND	0.8	ND	4.8	ND
Lead (Total)(ug/L)	12	NA	NA	ND							
1,1-Dichloroethane(ug/L)	NA	ND	ND	ND							
1,2-Dichloroethane(ug/L)	NA	ND	0.9	0.5	ND	ND	0.81	ND	ND	1.6	1.3
Trichloroethene(ug/L)	NA	ND	ND	0.7							
Chlorobenzene(ug/L)	NA	ND	ND	ND				ND			
Tetrachloroethene(ug/L)						ND	ND	ND	ND	ND	ND

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.

MONITORING WELL 5

	Oct-90	Jan-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	9.6	10	18	15	14	12	23	27
Diesel(mg/L)	1.9	1.2	* 0.86	* 2.2	*3.3	*1.9	*6.4	*5.9
Benzene(ug/L)	1200	1600	2500	4800	5000	4300	8600	6000
Ethylbenzene(ug/L)	70	720	550	610	530	390	ND	ND
Toluene(ug/L)	160	200	580	1100	820	380	2600	1500
Xylenes(ug/L)	520	510	500	760	800	590	1900	1600
Lead (Total)(ug/L)	3.0							
1,2-Dichloroethane(ug/L)	22	33	61	62	49	56	125	93
Tetrachloroethene(ug/L)	ND		ND	ND	ND	ND	ND	ND
Chlorobenzene(ug/L)					0.42			
Chloroform(ug/L)	ND							
Oil and Grease(ug/L)	5.4							

MONITORING WELL 6

	Oct-90	Jan-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	27	7.2	17	11	4.8	6.1	7.2	8.6
Diesel(mg/L)	4.7	1.6	* 0.80	* 1.4	*1.6	*1.2	*1.8	*1.7
Benzene(ug/L)	2700	1400	2800	1200	380	460	340	1300
Ethylbenzene(ug/L)	450	ND	610	ND	69	180	350	380
Toluene(ug/L)	2900	200	1200	380	340	200	460	280
Xylenes(ug/L)	3300	830	1800	750	730	590	920	1100
Lead (Total)(ug/L)	9							
1,2-Dichloroethane(ug/L)	40	23	53	29	22	26	30	35
Tetrachloroethene(ug/L)	ND		ND	ND	ND	ND	ND	ND
Chlorobenzene(ug/L)					ND			
Chloroform(ug/L)	0.4							
Oil and Grease(mg/L)	ND							

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.

MONITORING WELL 7

	Oct-90	Jan-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92(1)	Jul-92(2)
Gasoline(mg/L)	14	4.5	2.4	2	ND	1.1	1.7	1.9	1.2
Diesel(mg/L)	2.7	1.4	LOST	* 0.91	*0.37	*0.29	*0.52	*0.59	*0.7
Benzene(ug/L)	390	320	320	470	ND	230	310	410	21
Ethylbenzene(ug/L)	ND	42	77	ND	ND	45	78	78	1.0
Toluene(ug/L)	18	48	62	24	ND	7.0	28	21	2.6
Xylenes(ug/L)	1200	350	130	88	ND	88	170	170	90
Lead (Total)(ug/L)	11								
1,2-Dichloroethane(ug/L)	14	10	11	9.7	4.5	6.4	3.2	8.7	8.2
Tetrachloroethene(ug/L)	1.3		0.6	ND	0.68	3.5	0.5	2.1	2.0
Chlorobenzene(ug/L)					ND				
Chloroform(ug/L)	ND								
Oil and Grease(mg/L)	7.8								

MONITORING WELL 8

	Feb-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	ND	ND	ND	ND	ND	ND	ND
Diesel(mg/L)	ND	ND	ND	ND	ND	ND	ND
Benzene(ug/L)	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene(ug/L)	ND	ND	ND	ND	ND	ND	ND
Toluene(ug/L)	ND	ND	2	0.6	ND	ND	3.3
Xylenes(ug/L)	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane(ug/L)	ND		ND	ND	ND	ND	ND
Tetrachloroethene(ug/L)		0.5	1.2	0.4	0.68	0.8	1.6
Chlorobenzene(ug/L)				ND			

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.

MONITORING WELL 9

	Feb-91	Apr-91	Jul-91	Oct-91	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	6	4.2	1.9	0.88	0.38	2.9	4.4
Diesel(mg/L)	1.6	* 0.41	* 0.18	*0.3	*0.12	*0.7	*1.3
Benzene(ug/L)	180	520	190	160	14	510	860
Ethylbenzene(ug/L)	19	130	12	31	7.6	80	210
Toluene(ug/L)	170	410	52	44	2.2	260	340
Xylenes(ug/L)	200	580	77	83	14	260	640
1,2-Dichloroethane(ug/L)	13	26	12	10	9.6	11	22
Tetrachloroethene(ug/L)		ND	6.5	ND	ND	ND	ND
Chlorobenzene(ug/L)				ND			

MONITORING WELL 10

	Jan-92	Apr-92(1)	Apr-92(2)	Jul-92
Gasoline(mg/L)	13	15	13	8.1
Diesel(mg/L)	*3.7	*5.0	*7.5	*4.4
Benzene(ug/L)	130	180	240	74
Ethylbenzene(ug/L)	580	ND	490	360
Toluene(ug/L)	110	18	65	ND
Xylenes(ug/L)	3000	2700	2500	1100
1,2-Dichloroethane(ug/L)	33	20	22	29
Tetrachloroethene(ug/L)	ND	ND	ND	ND

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.

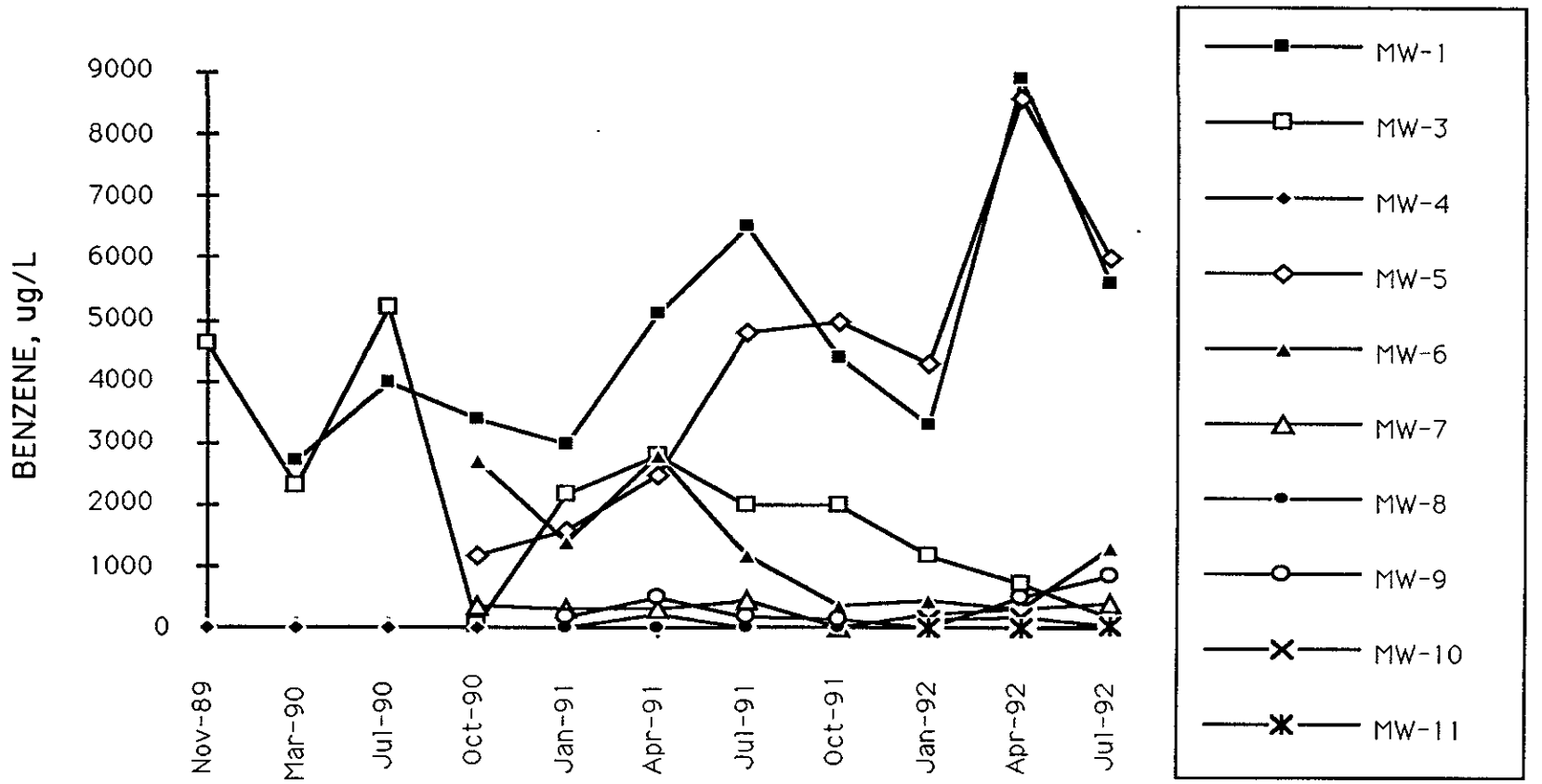
MONITORING WELL 11

	Jan-92	Apr-92	Jul-92
Gasoline(mg/L)	8.2	0.16	2.1
Diesel(mg/L)	*3.2	*1.2	*0.71
Benzene(ug/L)	23	ND	39
Ethylbenzene(ug/L)	250	ND	100
Toluene(ug/L)	ND	ND	2.3
Xylenes(ug/L)	1100	ND	53
1,2-Dichloroethane(ug/L)	ND	ND	ND
Tetrachloroethene(ug/L)	ND	ND	ND

ABANDONED WELL

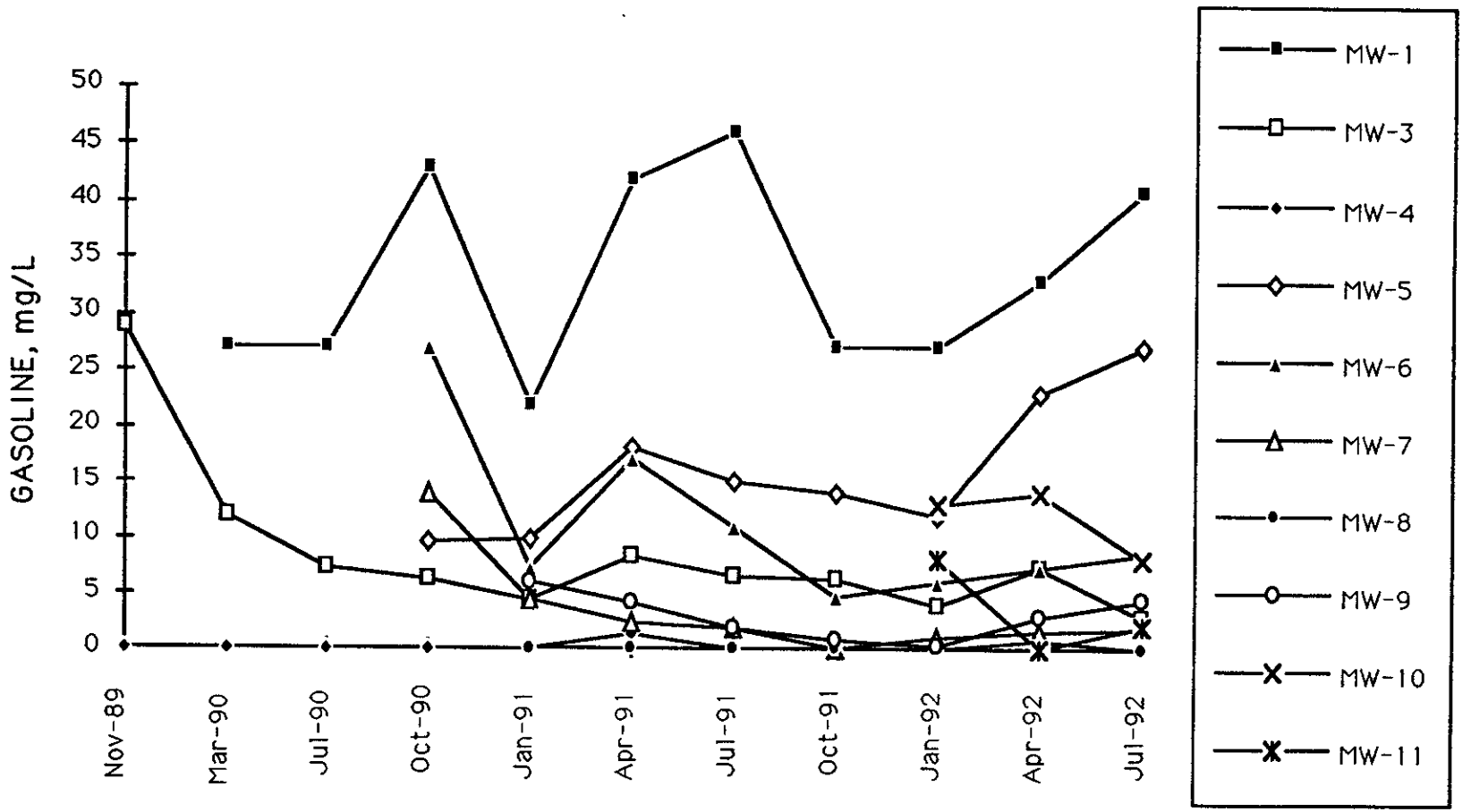
	Dec-89
Gasoline(mg/L)	1.8
Benzene(ug/L)	200
Ethylbenzene(ug/L)	24
Toluene(ug/L)	18
Xylenes(ug/L)	34
1,2-Dichloroethane(ug/L)	1.5

* The positive result for the Petroleum Hydrocarbon as Diesel analysis on this sample appears to be a lighter hydrocarbon than Diesel.



CTTS , Inc.
toxic technology services
P.O. Box 515 • Rodeo, California 94572
(510) 799-1140

Benzene (ug/L) in Groundwater
Durham Transportation
Meekland Avenue, Hayward, California



CTTS , Inc.
toxic technology services
P.O. Box 515 • Rodeo, California 94572
(510) 799-1140

Gasoline (mg/L) in Groundwater
Durham Transportation
Meekland Avenue, Hayward, California

APPENDIX F

FALCON ENERGY'S PORTABLE SOIL REMEDIATION UNIT FOR HYDROCARBON CONTAMINATED SOILS:

PROCESS DESCRIPTION

AFTER A NUMBER OF YEARS IN THE PERMITTING PROCESS, FALCON ENERGY HAS RECEIVED PERMIT NUMBER: AP 90-287ABCD TO OPERATE ITS PORTABLE SOIL REMEDIATION UNIT FROM SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT LOCATED AT P.O. BOX 2009, 2321 W. WASHINGTON STREET, SUITE ONE, STOCKTON, CALIFORNIA 95201. THE FALCON SOIL REMEDIATION UNIT CAN PROCESS APPROXIMATELY 25 TONS PER HOUR THROUGHPUT DEPENDING ON CONTAMINATE LEVELS, MOISTURE CONTENT AND OTHER VARIABLES.

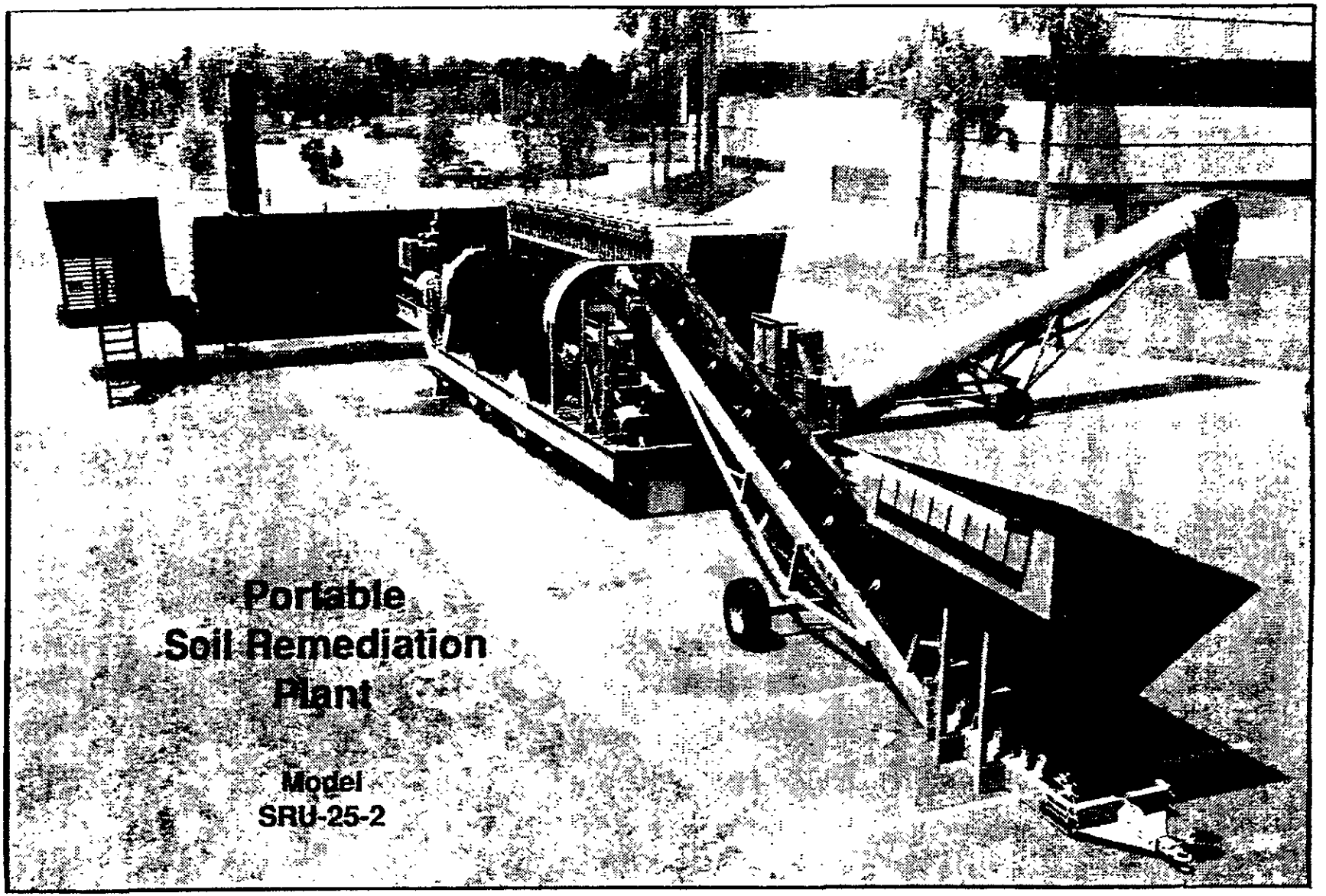
THE FALCON UNIT IS DESIGNED TO REMEDIATE SOIL CONTAMINATED WITH LIGHT DISTILLATE PETROLEUM HYDROCARBONS INCLUDING GASOLINE, DIESEL, JET FUEL, STODDARD SOLVENT (A NON-HALOGENATED LIGHT PETROLEUM DISTILLATE), KEROSENE (#1 FUEL OIL) AND SIMILAR PRODUCTS. UNTIL INITIAL TESTING IS COMPLETED AND RESULTS SUBMITTED TO APCD, FALCON IS UNABLE TO ACCEPT SOILS CONTAMINATED WITH WASTE OILS. THE SYSTEM OPERATES BY RAPIDLY VOLATILIZING PETROLEUM HYDROCARBONS FROM THE SOIL AND THEN THERMALLY DESTROYING THEM IN THE DISCHARGE AIR STREAM. THE UNIT CONSISTS OF A ROTARY DRYER WITH FEED SYSTEM, DISCHARGE AND COMBUSTION CONTROL SYSTEMS, A DUST COLLECTOR, A MODULAR THERMAL OXIDIZER AND ASSOCIATED FUEL AND DELIVERY SYSTEMS.

SOIL TEMPERATURE AT DRYER INLET:	60 DEGREES F
SOIL TEMPERATURE AT DRYER OUTLET:	600 DEGREES F
AIR TEMPERATURE AT DRYER INLET:	60 DEGREES F
AIR TEMPERATURE AT DRYER OUTLET:	350 DEGREES F
% CONTENT LIGHT DISTILLATE HYDROCARBON PRODUCTS IN SOIL AT DRYER INLET:	1.7% BY WEIGHT - MAXIMUM (APPROXIMATELY 17,000 PARTS PER MILLION, PPM)
% MOISTURE IN SOIL, DRYER INLET:	12%
% MOISTURE IN SOIL, DRYER OUTLET:	ZERO %
***WATER ADDED TO SOIL AFTER EXITING DRYER FOR COOLING PURPOSES	WATER ADDED FUNCTIONS TO COOL AND CONTROL FUGITIVE DUST (PARTICULATE MATTER)
PRODUCT TREATMENT RATE:	25 TONS PER HOUR WET INPUT 21 1/2 TONS PER HOUR DRY OUTPUT (APPROXIMATE)
FUEL USED:	PROPANE
BTU'S IN DRYER (HEAT)	FIFTEEN MILLION (MM) BTU/HR.
BTU'S REQUIRED IN THERMAL OXIDIZER (AFTER BURNER):	TWELVE MILLION (MM) BTU/HR @ 1400 DEG. F

THE UNIT IS DESIGNED FOR A MAXIMUM PEAK SOIL DISCHARGE TEMPERATURE OF 850 DEGREES F FROM THE DRYER AND A MAXIMUM AFTERBURNER PEAK OUTLET TEMPERATURE AT 1850 DEGREES F. OPERATING SETPOINT MAXIMUMS OF 800 DEGREES F AND 1800 DEGREES F RESPECTIVELY ARE RECOMMENDED.

SOIL IN NEED OF TREATMENT IS LOADED ONTO THE FEED HOPPER WHICH DISCHARGES THE SOIL ONTO A VARIABLE SPEED FEEDER BELT. THE FEEDER BELT CONVEYS THE SOILS TO A VIBRATING SCREEN AND THEN ONTO A BELT WEIGH SCALE WHICH PROVIDES SOIL FEED RATE AND TOTAL WEIGHTS TO THE UNIT'S ELECTRONIC CONTROL PANEL. THE BELT THEN FEEDS THE CONTAMINATED SOIL INTO A COUNTERFLOW ROTARY DRUM DRYER WHERE VOLATILE COMPOUNDS AND MOISTURE IN THE SOIL ARE EVAPORATED BY THE HEAT WHICH IS SUPPLIED BY THE DIRECT FIRING BURNER. HEAT TRANSFER TO THE SOIL IN THE ROTARY DRYER IS MAXIMIZED BY THE VEILING ACTION OF SPECIALLY DESIGNED LIFTING FLIGHTS AND PATENTED COMBUSTION VOLUME FLIGHTS.

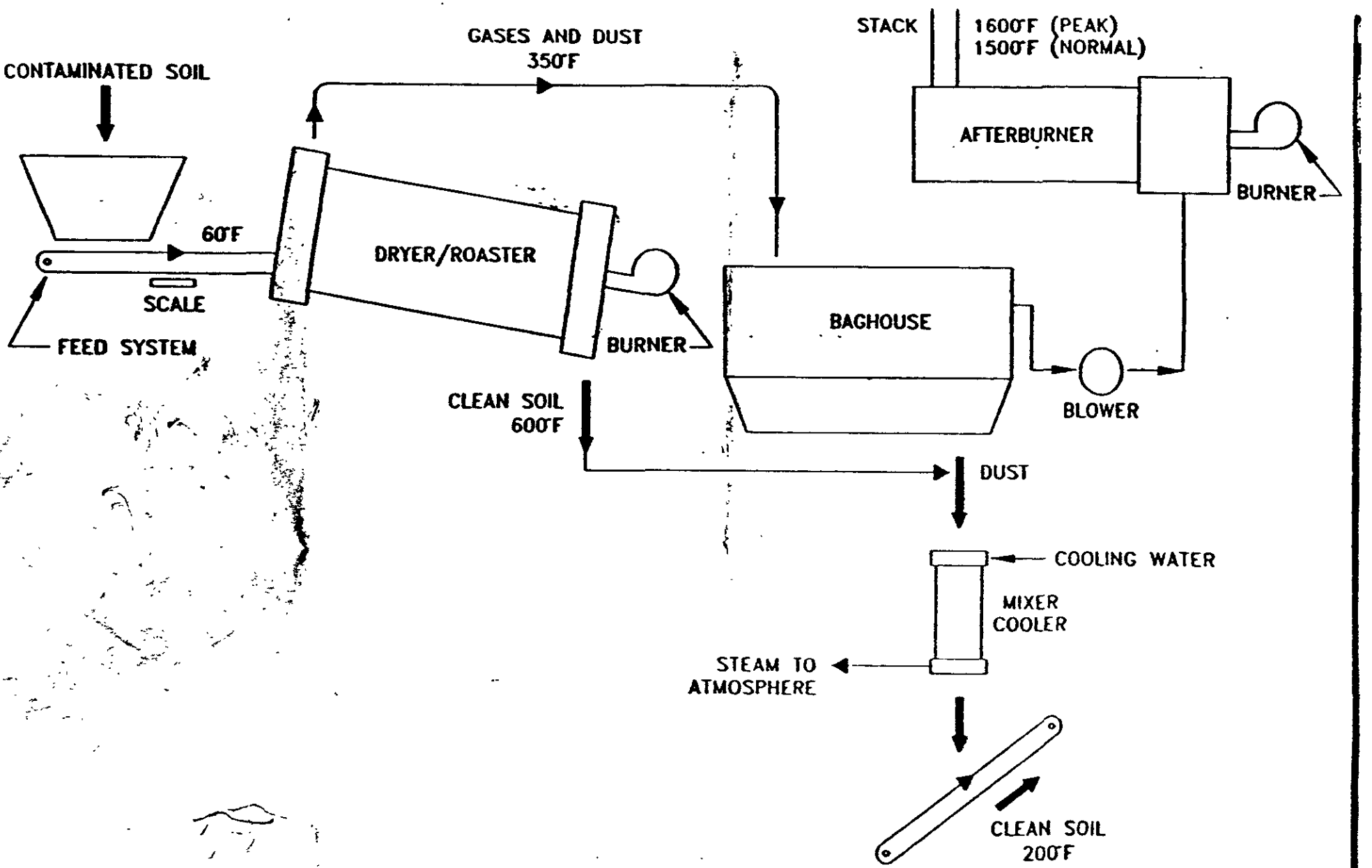
THE HEATED, DRY SOIL IS THEN DISCHARGED INTO THE MIXER COOLER. THE EVAPORATED VOLATILES AND WATER, ALONG WITH DUST RELEASED BY THE DRYING PROCESS ARE CARRIED OVER THE DRYER'S EXHAUST GASES INTO A KNOCKOUT BOX IN THE BAGHOUSE WHERE THE LARGE PARTICLES DROP OUT IN THE GAS STREAM. THESE PRE-CLEANED GASES ARE THEN ROUTED THROUGH THE BAGHOUSE. DUST COLLECTED FROM THE KNOCKOUT BOX AND BAGHOUSE ARE CARRIED TO THE DRYER'S MIXER COOLER AND BLENDED INTO THE CLEAN SOIL OUTPUT. OUTPUT FROM THE BAGHOUSE IS ROUTED THROUGH AN EXHAUST FAN INTO A MODULAR THERMAL OXIDIZER/STACK UNIT WHICH REDUCED THE HYDROCARBON CONTENT OF THE GAS STREAM.



FALCON ENERGY
ASSOCIATES

FALCON ENERGY'S PORTABLE SOIL REMEDIATION UNIT FOR HYDROCARBON CONTAMINATED SOILS. CONTACT:

FALCON ENERGY - PORT OF STOCKTON, STOCKTON, CALIFORNIA
(209) 463 7108 FAX (209) 463 2712



Portable Plant Process Flow Diagram

FALCON ENERGY'S PORTABLE SOIL REMEDIATION UNIT
FOR HYDROCARBON CONTAMINATED SOILS

FALCON ENERGY - PORT OF STOCKTON
STOCKTON, CALIFORNIA
(209) 463 7108 FAX (209) 463 2712

APPENDIX G

ORO LOMA SANITARY DISTRICT

2600 GRANT AVENUE
SAN LORENZO, CALIFORNIA 94580
TELEPHONE (415) 276-4700
FAX (415) 276-1528

January 3, 1991

Ms. Lisa Palos
Toxic Technology Services
P.O. Box 515
Rodeo, CA 94572

Subject: **Special Discharge Permit Information**

Dear Lisa:

To follow up on our telephone conversation today, I've enclosed a copy of the Oro Loma Sanitary District Special Discharge Conditions and a copy of the Standard Discharge Conditions.

They outline the conditions that will be applied to the treated ground water wastestream you have requested to discharge into the Oro Loma Sanitary District System. I hope this information is of some assistance.

One other issue needs clarification. Please note on page 7 of 9. In Special Conditions the TPH limit is **15 mg/L** not 10 mg/L as stated in our letter dated 12/12/90.

Please feel free to call us at 278-1747 with any other questions or comments.

Sincerely,

Douglas Humphrey
Director of Operations and Maintenance

Susan M. Keach

Susan M. Keach
Industrial Waste Inspector

DH:SK:bh

Enclosures

DH/DISCHARGE.LTR/bh

Discharge Standards

Benzene, Toluene, Ethylbenzene and Xylene levels in discharged water shall be non-detectable.

Total Petroleum Hydrocarbons(TPH) in discharged water shall be a maximum of 15 mg/L.

GENERAL

The permittee shall notify the District's Chemist (278-1747) no less than 2 hours prior to commencement of any pumping activity and request an inspection of the site No pumping shall occur until District staff has inspected the site, piping, pumping set-up, metering and discharge points.

There shall be no bypassing of any treatment process or unit or direct discharge into the sewer system at any time.

The permittee assumes full responsibility for any and all damages to the collection system or to the Publicly Owned Treatment Works (P.O.T.W) otherwise known as the Oro Loma/Castro Valley Treatment Plant, that can be directly attributed to the discharge of treated groundwater from the operation at the site.

BILLING AND PERMIT EXTENSIONS

The permittee will pay all District fees for sampling, monitoring, inspections, loading charges, as well as any other related District expenses billed prior to the expiration of this permit.

The District will not consider an extension of this permit until all fees and reimbursable costs have been paid by the permittee.

PRE-PUMPING AND EMERGENCY NOTIFICATION

In the event of any explosive condition or other potentially harmful situation which may affect either the collection system or the P.O.T.W., the permittee shall contact the District at 278-1747 immediately (operators are on duty 24 hours per day).

The Eden Regional Fire Department shall be notified of the clean-up operation.

If air stripping is part of the treatment process, the Bay Area Air Quality Control Board shall be notified of the process. If a permit is issued by the Air Board, a copy of that permit and subsequent extensions shall be submitted to the District.

SAMPLING AND MONITORING

GENERAL

The permittee shall provide easily accessible sampling points for both pre and post treatment samples.

The District reserves the right to sample at will for any constituents it deems necessary on the groundwater samples collected on both pre and post treatment samples.

During the entire treatment process the Total Petroleum Hydrocarbons (TPH) concentration shall not exceed 15 mg/L at any time in the water discharged to the sewer system.

Sampling frequency will increase if test results show discharge levels are bordering on the 15 mg/L limit for Total Petroleum Hydrocarbons.

INITIAL SAMPLING

During the initial 3 hour start-up pumping period, the effluent discharge from the treatment process shall not be sewered. The total volume will be contained in a tank. The system will be shut down and analysis performed to determine TPH level. Further processing of the groundwater shall only be allowed after analyses indicate that the contents of the tank meet all of the limitations set forth in this permit.

Constituents to be analyzed for on the initial sample include:

a. Metals (see page 2), Phenols, & Cyanide
b. General Analysis (COD, SS, PH)
c. Total Petroleum Hydrocarbons (EPA 8015)
d. BTEX (EPA 8020)

METERING

The permitee shall submit specifications of the proposed flow meter to the District for approval. The meter must be appropriate for all anticipated conditions of flow and pressure, and must include a non-resetable totalizer and fittings to allow for a "fill-up" test to verify the accuracy of the meter. This can also serve as the sampling point for discharge.

PROPOSED SAMPLING AFTER INITIAL TESTS

One week after discharge begins analyze for TPH.

If TPH levels are above 10 mg/L on first week's sample, another sample will be grabbed immediately upon receipt of lab results from first sample. This will continue as long as the District deems it necessary.

When the District staff is convinced that TPH levels have stabilized, one general analysis, one TPH, and one BTEX per month for the duration of the of the pumping operation.

Results of these analyses will be transmitted to the District on a timely basis. Monthly flow data will be transmitted to the District no later than the 10th day of the following month.

FEES

An annual permit fee of $400 is charged with the issuance and any subsequent renewals of this discharge permit.

Sewer service and use charges will be $1.472/hcf or $1.97 per thousand gallons of water discharged.

dh/spec.con/ja

ORO LOMA SANITARY DISTRICT

WASTEWATER DISCHARGE PERMIT

COMPANY NAME: _____

MAILING ADDRESS: _____

_____

FACILITY ADDRESS: _____

_____

The above named company is authorized to discharge wastewater to the Oro Loma Sanitary District sanitary sewerage system in compliance with the District's Ordinance No. 39 (as amended) titled:

> "AN ORDINANCE REGULATING THE USE OF PUBLIC AND PRIVATE SEWERS AND DRAINS, REGULATING THE DISCHARGE OF WATERS AND WASTES INTO THE PUBLIC SEWER SYSTEM, PROVIDING FOR WASTEWATER DISCHARGE PERMITS AND FIXING PERMIT AND MONITORING FEES, AND PROVIDING FOR FOR LIABILITIES AND PENALTIES FOR THE VIOLATION OF THE PROVISIONS THEREOF."

and in compliance with any Federal or State regulations that apply, and in accordance with effluent limitations, monitoring requirements and with any standard or special conditions set forth in this permit or modified during the term of this permit.

This permit is granted in accordance with the application filed on _____, 19__ in the office of the Oro Loma Sanitary District and in conformity with specifications and information submitted to the District in support of the above referenced application.

PERMIT NO._____ EFFECTIVE DATE:_____

EXPIRATION DATE:_____

APPROVED: _____

GENERAL MANAGER, ORO LOMA SANITARY DISTRICT

The following sections (when checked) are attached and made a part of this permit:

__Standard Conditions I
__Standard Conditions II
__Special Conditions

EXAMPLE ONLY

I. STANDARD CONDITIONS (ALL USERS)

A. Definitions. See Section 1.2, Ordinance 39-1, attached.

B. General

The User shall comply with all the general prohibitive discharge standards in Article II of Ordinance No. 39-1.

C. Right of Entry

The User shall allow the District or its representatives to enter upon the premises of the User, at all reasonable hours, for the purposes of inspection, sampling or records inspection. Reasonable hours in the context of inspection and sampling includes any time the User is operating any process which results in a process wastewater discharge to the District's sewerage system.

D. Records Retention

The User shall retain and preserve for no less than three (3) years any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made by or on behalf of the user in connection with its discharge. Records shall be made available for inspection and copying by representatives of the District, the California Regional Water Quality Control Board or the Environmental Protection Agency. All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the District shall be retained and preserved by the User until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

E. Confidential Information

Except for data determined to be confidential under the provisions of Ordinance No. 39-1, all reports required by this permit shall be available for public inspection at the District Office, 2600 Grant Avenue, San Lorenzo, California.

F. Dilution

No User shall increase the use of potable or process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

G. Proper Disposal of Pretreatment Sludges and Spent Chemicals

The disposal of sludges and spent chemicals generated shall be done in accordance with all applicable State and Federal regulations.

H. Signatory Requirement

All reports required by this permit shall be signed by a principal executive officer of the User, or his designee.

I. Revocation of Permit

The permit issued to the User by the District may be revoked when, after inspection, monitoring or analysis it is determined that the discharge of wastewater to the sanitary sewer is in violation of Federal, State or Local laws, ordinances, or regulations. Additionally, falsification or intentional misrepresentation of data or statements pertaining to the permit application or any other required reporting form shall be cause for permit revocation.

J. Limitation on Permit Transfer

Wastewater Discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without the prior written approval of the District. Sale by a User shall obligate the purchaser to seek prior written approval of the District for continued discharge to the sewerage system and issuance of new permit.

K. Falsifying Information or Tampering with Monitoring Equipment

Knowingly making any false statement on any report or other document required by this permit or knowingly rendering any monitoring device or method inaccurate may result in punishment in accordance with District Ordinances or other applicable laws.

L. Modification or Revision of the Permit

The terms and conditions of this permit may be subject to modification by the District at any time as limitations or requirements as identified in the District Ordinance No. 39 (as amended) are modified, or if other just cuase exists.

This permit may also be modified to incorporate special conditions resulting from the issuance of a special order by an agency which regulates the District's discharge.

The terms and conditions may be modified as a result of Environmental Protection Agency promulgating a new federal pretreatment standard.

Any permit modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance if necessary.

M. Duty to Reapply

The District shall notify a User prior to the expiration of the User's Permit. Within thirty (30) days of the notification, the User shall reapply for reissuance of the permit on a form provided by the District.

N. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

O. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of Federal, State or Local regulations.

P. Permit Duration

The wastewater discharge permit will remain in effect for one year from the effective date of the permit. Users who are issued a wastewater discharge permit or renew a wastewater discharge permit shall pay the permit fee set forth in the current schedule of fees as adopted in the most current ammendment to Ordinance No. 39.

Q. Wastewater Charges and Fees

The User shall pay to the District all sewer service charges, permit fees, monitoring charges and laboratory analysis charges levied in accordance with current District Ordinances. All charges are due and payable upon receipt of statement of charges. Failure to pay fees within 30 days may result in revocation of wastewater discharge permit and termination of service. Overdue fees shall be assessed a 10% penalty plus interest of 1-1/2% per month until fees have been paid.

R. Reporting Requirements

1. In order that employees of Users be informed of District requirements, Users shall make available to their employees copies of the District's Discharge Regulations together with other wastewater information and notices which may be furnished by the District. User shall permanently post a notice advising employees whom to call in case of spill or accidental discharge.

2. The User shall notify the District immediately upon any accidental or slug discharge to the sanitary sewers as outlined in the Discharge Regulations. Formal written notification discussing circumstances and remedies shall be submitted to the District within 5 days of the occurrence. The User shall work with the District to resolve any problems caused by such accidental or slug discharge.

3. The User shall notify the District prior to the introduction of new wastewater or pollutants or any substantial change in the volume of characteristics of the wastewater being introduced into the POTW from the User's industrial processes. Formal written notification shall follow within 30 days of such introduction.

4. Any upset experienced by the User of any of its treatment processes that places the User in a temporary state of noncompliance with wastewater discharge limitations contained in this permit or other limitations specified in the District's Ordinance shall be reported to the District within 24 hours of first awareness of the commencement of the upset. A detailed report shall be filed with the District within five days of the start of the upset.