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OCT 04 2001

# SITE INVESTIGATION WORK PLAN

**SITE LOCATION:**
**Oakland Truck Stop**
**1107 5th Street**
**Oakland, California**

**PREPARED FOR:**
**Mr. Reed Rinehart**
**Rinehart Distribution, Inc.**
**P.O. Box 725**
**Ukiah, California 95482**

**SUBMITTED TO:**
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**W. A. CRAIG, INC. PROJECT # 3628**

**October 1, 2001**

# PROFESSIONAL CERTIFICATION

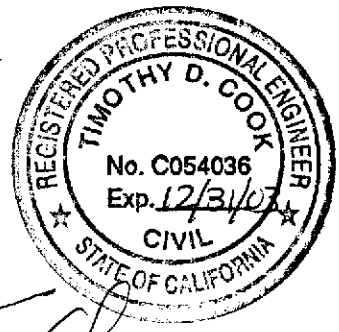
## Site Investigation Workplan

**Oakland Truck Stop**
**1107 5th Street**
**Oakland, California**

**Job No. 3628**
**October 1, 2001**

This document has been prepared by the staff of W. A. Craig, Inc., under the professional supervision of the persons whose seals and signatures appear hereon. No warranty, either expressed or implied, is made as to the professional advice presented herein. The site descriptions contained in this document are based upon our current understanding of site conditions. These conditions are subject to change as W.A. Craig, Inc. evaluates additional information.

Opinions or conclusions presented in this document are professional opinions based solely upon a review of existing environmental data. We recognize that the limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs, or requirements of other state agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of the user.




Tim D. Cook, P.E.
Principal Engineer

# 1.0 INTRODUCTION

## 1.1 Site Location and Description

The Oakland Truck Stop located at 1107 5th Street in Oakland, California ("the Site") is owned by Mr. Tony Muir. Rino Pacific, Inc. and Rinehart Distribution, Inc. lease the property from the owner. The Site is in a commercial and industrial district at the intersection of Adeline and 5th Streets **(Figure 1)**. A service station building, two underground storage tanks, four pump dispenser islands, a truck scale and scale house currently occupy the Site.

The Site topography is flat and is bounded on the north by the Interstate 880 overpass, on the west by Adeline Street, on the south by a restaurant and parking lot and on the east by Chestnut Street. The nearest surface water is the Oakland Estuary located approximately 2,400 feet south of the Site.

## 1.2 Background

The Site was developed as a truck stop approximately 40 years ago and has been in operation throughout this period. Three 10,000-gallon underground storage tanks (USTs) and one 8,000-gallon UST were formerly maintained at the Site. All four USTs were constructed of single-wall steel. Of the 10,000-gallon USTs, two contained diesel fuel and one contained mid-grade unleaded gasoline. The 8,000-gallon UST contained regular unleaded gasoline. Prior to the recent remodel of the Site, fuel product lines were constructed of single-wall fiberglass.

In mid-1995 an unauthorized release of gasoline occurred as a result of a leak in a product line. Product lines associated with this release were replaced as soon as the leak was discovered. Interim cleanup of the spill was performed by installing and operating two product recovery sumps in the vicinity of the release. The sumps recovered approximately 6.3 gallons of gasoline using a skimmer device and reduced the floating product thickness to a sheen on the water in the recovery wells. The sumps were removed during recent leaseholder improvements at the Site. The water table fluctuates seasonally between 10 inches and 4 feet below grade.

In March 1999, the four single-walled USTs were replaced with two 15,000-gallon double-walled fiberglass USTs. An interim remedial action was performed during UST replacement activities to remove the grossly contaminated soil and groundwater.

The following is a summary of interim remedial activities performed at the site by Trinity Excavating and Engineering, Inc. of Santa Rosa, California. The work was performed between February 8, 1999 and May 5, 1999.

| | |
|---|---|
| 2/8 through 2/10, 1999 | Excavated to tops of tanks and rinsed three gasoline and one diesel underground fuel tanks |
| 2/11/1999 | Removed tanks and disposed offsite (observed by Fire Inspector) |

| | |
|---|---|
| 3/3 &3/4, 1999 | Removed approximately 2,100 tons of contaminated soil from excavation bottom and sides before sampling as directed by Fire Inspector. Collected excavation and stockpile samples. Removed water from pit as needed. Stored approximately 33,000 gallons of contaminated water in temporary storage tanks. |
| 2/24 through 5/19, 1999 | Loaded, manifested and disposed of 2,000.5 tons of contaminated soil at the Forward non-hazardous disposal facility near Stockton, California. |
| 2/1 through 5/6, 1999 | Provided and placed approximately 1,700 tons of backfill. |
| 5/3 through 5/5, 1999 | Disposed of contaminated water at Seaport Environmental. |

The lateral extent of hydrocarbon contamination has not yet determined. Quarterly groundwater monitoring is being conducted. The direction of groundwater flow has varied from southwest to north. Interpretation of the groundwater gradient is suspect and could be affected by tidal fluctuation.

The shallow aquifer beneath the site has no beneficial use as a potential drinking water resource due to its high total dissolved solids concentration (>3,000 mg/l). Proposed Groundwater Amendments to the Water Quality Control Plan (Basin Plan), dated April 2000, specifically states that shallow groundwater to a depth of about 100 feet in portions of the East Bay Plain is often brackish due to naturally-occurring saltwater intrusion. However, well yields may be sufficient for industrial or irrigation uses.

This same document states that cleanup in areas that have no beneficial use as a drinking water resource, should be protective of ecological receptors, human health and probable non-potable uses (e.g., irrigation or industrial process supply). Pursuant to State Board Resolution No. 92-49, pollution sites will continue to be required to demonstrate that 1) reasonably adequate source removal has occurred, 2) the plume has been reasonably defined both laterally and vertically and 3) a long-term monitoring program is established to verify that the plume is stable and will not impact ecological receptors or human health (e.g., from volatilization into trenches and buildings). In the East Bay Plain there are deep aquifers that will continue to be designated as potential drinking water resources. In such a setting, the deep aquifers (defined as aquifers below the Yerba Buena Mud) are subject to protection as potential drinking water resources.

In a letter to Rinehart Distributing Inc. dated July 27, 2001, Alameda County Health Care Services (ACHCS) requested that additional investigation be performed to delineate the extent of petroleum hydrocarbons both on-site and off-site. Specifically, they requested temporary borings and requested borings to the south or adjacent to the main building.

## 2.0 PROPOSED SCOPE OF WORK

The scope of services proposed herein will be performed to determine the presence and extent of petroleum hydrocarbons in soil and groundwater. The proposed scope of services includes the following:

- Preparing this Site Investigation Work Plan for submittal to the RWQCB and ACHCS;
- Obtaining appropriate regulatory permits and approvals;
- Obtaining encroachment permits and preparing traffic plans to install temporary borings in the City of Oakland right-of-way;
- Obtaining underground utility clearance through Underground Service Alert;
- Advancing fifteen temporary borings in and around the Site;
- Abandoning one on-site well and replacing it with a properly constructed well;
- Collecting and analyzing soil and groundwater samples from each temporary boring;
- Collecting and analyzing groundwater samples from each on-site monitoring well; and
- Preparing a Site Investigation Report that evaluates site conditions and makes recommendations regarding corrective actions, if necessary.

## 3.0 FIELD PROCEDURES

Fifteen temporary borings for soil and groundwater sampling wells will be situated in the locations shown on **Figure 2**. The purpose of these borings is to delineate the extent of petroleum hydrocarbons in on-site and off-site.

Borings TB-1 and TB-2 will be located along Adeline Street to delineate the westerly extent of contamination. Borings TB-3 through TB-8 will be located along 5th Street to delineate the northerly extent of contamination. Borings TB-9 and TB-10 will be located along Chestnut Street to delineate the easterly extent of contamination. Borings TB-11 and TB-12 will be located on the property adjacent to the site to delineate the southerly extent of contamination. Borings TB-13 through TB-15 will be installed in the northeastern portion of the site to delineate the lateral extent of petroleum hydrocarbons around the vicinity of MW-7.

Well MW-3 will be properly abandoned due to incompatible well screening with the other seven monitoring wells. We will install a replacement well (MW-3N), with a screened interval similar to the most recently installed wells.

### 3.1 Well Permits and Utility Clearance

The Alameda County Department of Public Works requires that well permits be obtained prior to the installation of monitoring wells or temporary borings. Well permit applications will be filed with Alameda County at least 14 days prior to installation of the wells. ACHCS will be given at least 48 hours notice prior to site investigation field activities.

Per requirements of California law, underground service alert (USA) will be notified of the intent to perform subsurface investigation at the Site. USA will notify public and private utility companies and each utility will send a field representative to mark the location of underground utilities owned and maintained by each utility company. In addition, W.A. Craig will review existing utility plans to ensure that buried utilities are not within two feet of the proposed temporary boring and monitoring well locations.

### 3.2 Temporary Boring Drilling and Sampling Procedures

Temporary borings will be advanced using a Geoprobe rig equipped with a Hydropunch sampler. The Geoprobe rig uses a hydraulic ram to push a steel probe into the soil for the purpose of collecting soil and groundwater samples. A W.A. Craig, Inc. geologist, under the direct supervision of a California Registered Geologist, will log the borings and collect samples. The geologist will observe significant changes in material penetrated, changes in drilling conditions, hydraulic pressure, and drilling action. The geologist will observe and record changes by time and depth. He will also observe and record the relative moisture content of the samples, soil or rock type, color, grain-size, texture, hardness, degree of induration, carbonate content, presence of hydrocarbons, and note water-producing zones and other pertinent information. This record will be used later to prepare a boring log that will be included in the Site Investigation Report.

One soil sample will be collected at the soil groundwater interface (capillary fringe) from each temporary boring. Soil samples will be collected using a 4-foot long steel split sampler lined with clear acetate sample tubes. The sampler will be placed down the boring and driven using a vibrating impact hammer. Immediately after removing the acetate core barrel from the sample, three 5-gram aliquots of soil will be collected from the capillary fringe using an EnCore Sampler. This sampler meets all requirements for the collection of solid and waste oil samples for volatile organic analytes described in EPA Method 5035. The EnCore sampler will be pushed into the acetate tube using the T-handle until the coring sampler is completely full. The cap coring body will be properly seated and locked in place to form an airtight seal. The EnCore samplers will be placed in a zipper foil pouch.

The zipper foil pouch will be labeled indicating project name (or number), sample number, sample depth, date and collection time. The same information will be recorded on the chain of custody form. EnCore samplers will be placed in a cooler with frozen gel packs or ice. The sample cooler will be delivered to the analytical laboratory within 24 hours of collection. Soil samples will be extracted within 48 hours of receipt by the lab and will be kept at 4 degrees Centigrade pending analysis.

The Geoprobe rig will collect groundwater samples using a retrievable stainless steel screen. This allows for multiple depth groundwater sampling using the same penetration hole. The groundwater sampler is pushed in a closed position to the desired sampling interval. The sampler push rod is then retracted, exposing the inlet screen. Groundwater flows from the formation into the inlet screen. Groundwater samples will be collected at a depth approximately

5-feet below the first encountered groundwater. Samples will be collected using a disposable polyethylene bailer and will be decanted from the bailer into 40-milliliter vials preserved with hydrochloric acid. Sample containers will be labeled with the boring number, site identification, date, and time of sample collection and then transported under chain of custody protocol to a state certified laboratory. Water samples will not be held for more than 14 days prior to analysis and will be kept at 4 degrees Centigrade pending analysis.

### 3.3 Monitoring Well Drilling Procedures

The replacement monitoring well (MW-3N) will be drilled using a truck-mounted hollow-stem auger drill rig. Drilling will cease approximately 10 feet below the first encountered water-bearing zone.

Borings will be continuously logged in the field using the unified soil classification system. The field geologist will observe significant changes in material penetrated, changes in drilling conditions, hydraulic pressure, and drilling action. The field geologist will observe and record lithologic changes, the relative moisture content of soils and note water-producing zones. This record will be used later to prepare a detailed boring log. Lithologic descriptions will include soil or rock type, color, grain, size, texture, hardness, degree of induration, carbonate content, presence of fossils, minerals and other materials (gypsum, hydrocarbons) and other pertinent information.

Soil cuttings from the drilling operations will be stored on-site in 55-gallon, steel, DOT approve drums. These investigation-derived wastes will be characterized as hazardous or non-hazardous based of the results of the investigation. Disposal of these wastes is not included in this scope of work.

### 3.4 Monitoring Well Abandonment

Well MW-3 will be abandoned by over-drilling the 2-inch diameter casing with hollow-stem augers. The PVC casing will be removed as well as the traffic box. The borehole will be filled with a Portland cement/bentonite grout to the surface. A cement mix or cold-patch asphalt mix will be used to finish the boring at the surface grade.

### 3.5 Monitoring Well Construction

Replacement monitoring well MW-3N will be constructed within 10 feet of former well MW-3. The well will be constructed of four-inch diameter, flush-threaded, Schedule-40 PVC well casing. The screen and casing will be installed through the hollow-stem augers. The screened interval of the well will be factory slotted with a slot size of 0.010 inches. The well screen will be installed to approximately 10-feet below the first encountered groundwater, or as conditions warrant. The screened section annulus will be packed with clean #2/12 graded sand to a level approximately one foot above the screened interval. Bentonite chips will be placed above the

sand as a sealing material. The well will be sealed from the bentonite seal to the ground surface using a Portland cement/bentonite grout. No glues or other solvents will be used in the construction of the well. The well is not designed to provide optimum flow but is intended to provide water samples that are representative of water quality in the first water-bearing zone.

The wellhead will be protected from vandalism using a locking expansion-plug cap and will be housed within a traffic-rated box to protect the well from traffic and surface water runoff. The grout will be allowed to set for a period of 72 hours prior to development or sampling.

### 3.6 Well Development

Intermittent surging, bailing and pumping will be used to develop monitoring well MW-3N. Field parameters, including color, odor, free-phase liquid, turbidity, specific-conductance, temperature, and pH will be monitored during development. Development will continue until field parameters stabilize and the water is relatively clear and free of silt and sand.

### 3.7 Groundwater Sample Collection

Well MW-3N will be sampled along with seven other on-site monitoring wells on a quarterly schedule. Water level measurements will be obtained from the monitoring wells prior to sampling. The wells will be purged of a minimum of three well-casing volumes prior to sampling. The wells will be purged using a disposable polyethylene bailer. Should the well become completely evacuated during purging, samples will be collected after the well has recovered to 80 percent of its initial water level. Field parameters will be intermittently monitored during the purging of the well (as described in well development).

Groundwater samples will be decanted from the bailer into laboratory supplied containers, approved for the analyses required. The samples will be immediately placed in refrigerated storage for delivery to the laboratory. The samples will be labeled in such a manner as to maintain client confidentiality. Samples will be delivered under chain of custody control to an analytical laboratory that is certified by the State of California to perform the requested analyses.

### 3.8 Surveying

A licensed professional surveyor will survey the temporary boring locations for horizontal control and monitoring well MW-3N for horizontal and elevation control. The survey will tie the top of casing elevation for MW-3N to the survey datum previously established for the other seven wells. The top of well casing elevations will be accurate to within 0.01 foot. A permanent mark on the top of the well casing such as an indelible mark or notch will reference the surveyed point on the casing. All subsequent water level measurements will be tied to this reference point. The surveyor will produce an Site map with monitoring well and temporary boring locations in AutoCAD. This map will be used as a base map for future site investigation reports.

### 3.9 Field Equipment Decontamination Procedures

Soil sampling devices will be decontaminated before and after each use by washing in a laboratory grade detergent solution, followed by tap water rinses. Potable water will be used for decontamination of drilling equipment.

Rinseate water used in the decontamination process and purge water, soil cores from the temporary borings and soil cuttings from the monitoring well boring will be stored on-site in steel DOT approved drums. Drums will be labeled as to contents, date container filled, company name, and sealed. The drums will be left on-site for subsequent disposal pending analytical results.

## 4.0 LABORATORY ANALYSIS

Soil and groundwater samples will be analyzed by McCampbell Analytical, Inc. for total petroleum hydrocarbons as gasoline (TPH-g) and total petroleum hydrocarbons as diesel (TPH-d) by EPA method 8015 modified; for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 8020; and for MtBE and other fuel oxygenates using EPA method 8260b. McCampbell Analytical is certified by the State of California to perform these analyses.

## 5.0 SITE INVESTIGATION REPORT

A Site Investigation Report will be prepared and submitted to the ACHCS and the RWQCB. The report will include a site history, figures identifying sample locations, boring logs, laboratory analytical reports, a summary of all work performed, a tabulation of analytical results, conclusions and recommendations for additional investigation or remediation work, if necessary.

## 6.0 SCHEDULE

Approval of this work plan, obtaining well permits and scheduling of subcontractor services could be completed in approximately five weeks. The drilling, well installation, well development, and well sampling activities should be completed in approximately ten working days (allowing for 72 hours curing of the well sealant and sampling 48 hours after well development). The results of soil sample analyses should be completed within 14 days of sample collection. Groundwater sample analytical results should be available approximately 10 days after sample collection. The results of the additional investigative work would be presented in a report approximately three weeks after completion of the receipt of the final laboratory analytical results. WAC estimates this scope of work could be completed in approximately 12 weeks, although additional time may be required for pre-approval of the investigation costs by the State Water Resources Control Board, Underground Storage Tank Cleanup Fund.

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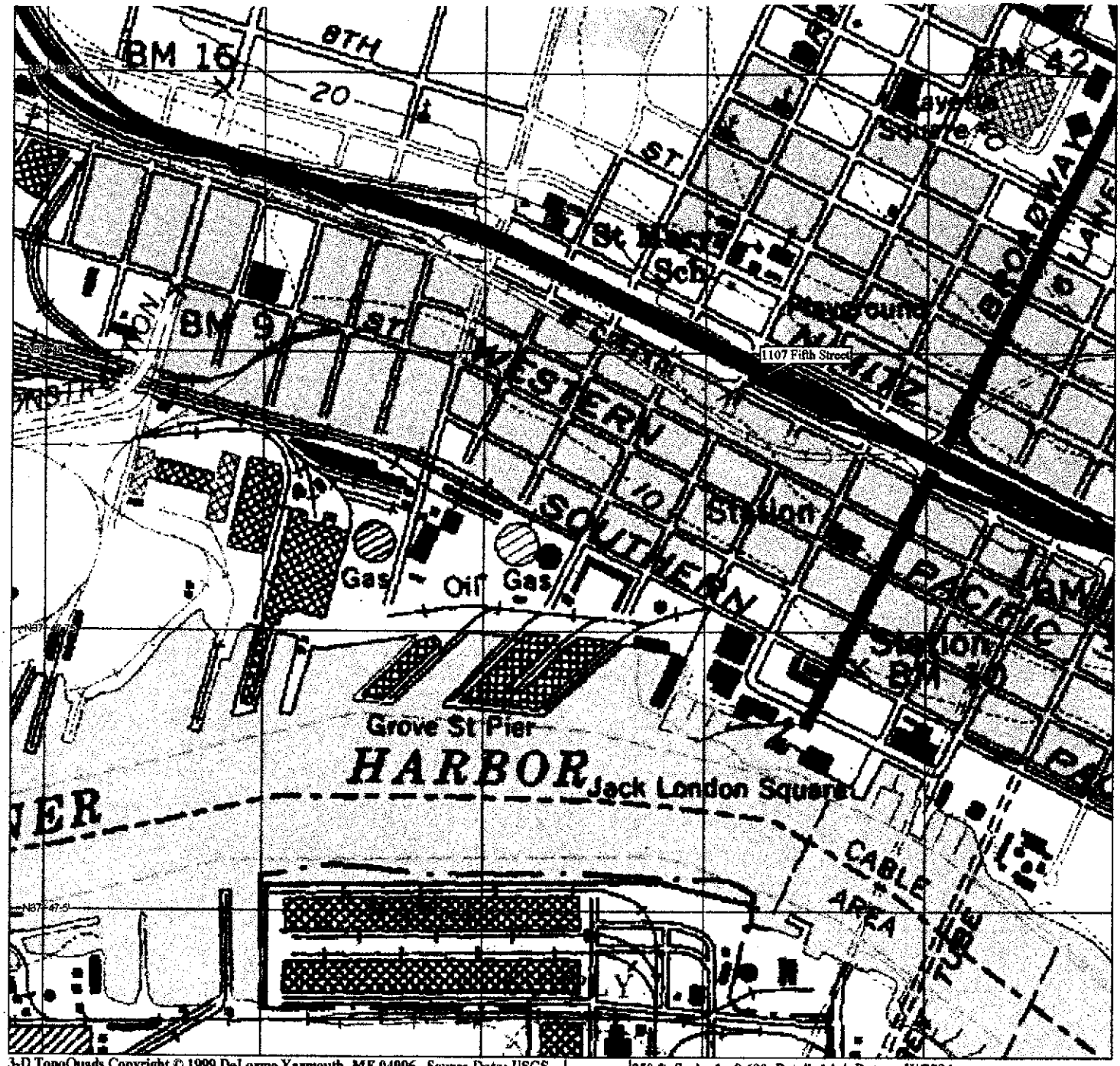


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Project No: 3628

October 1, 2001

**Site Location Map**
Oakland Truck Stop
1107 5th Street
Oakland, California

**Figure 1**

N

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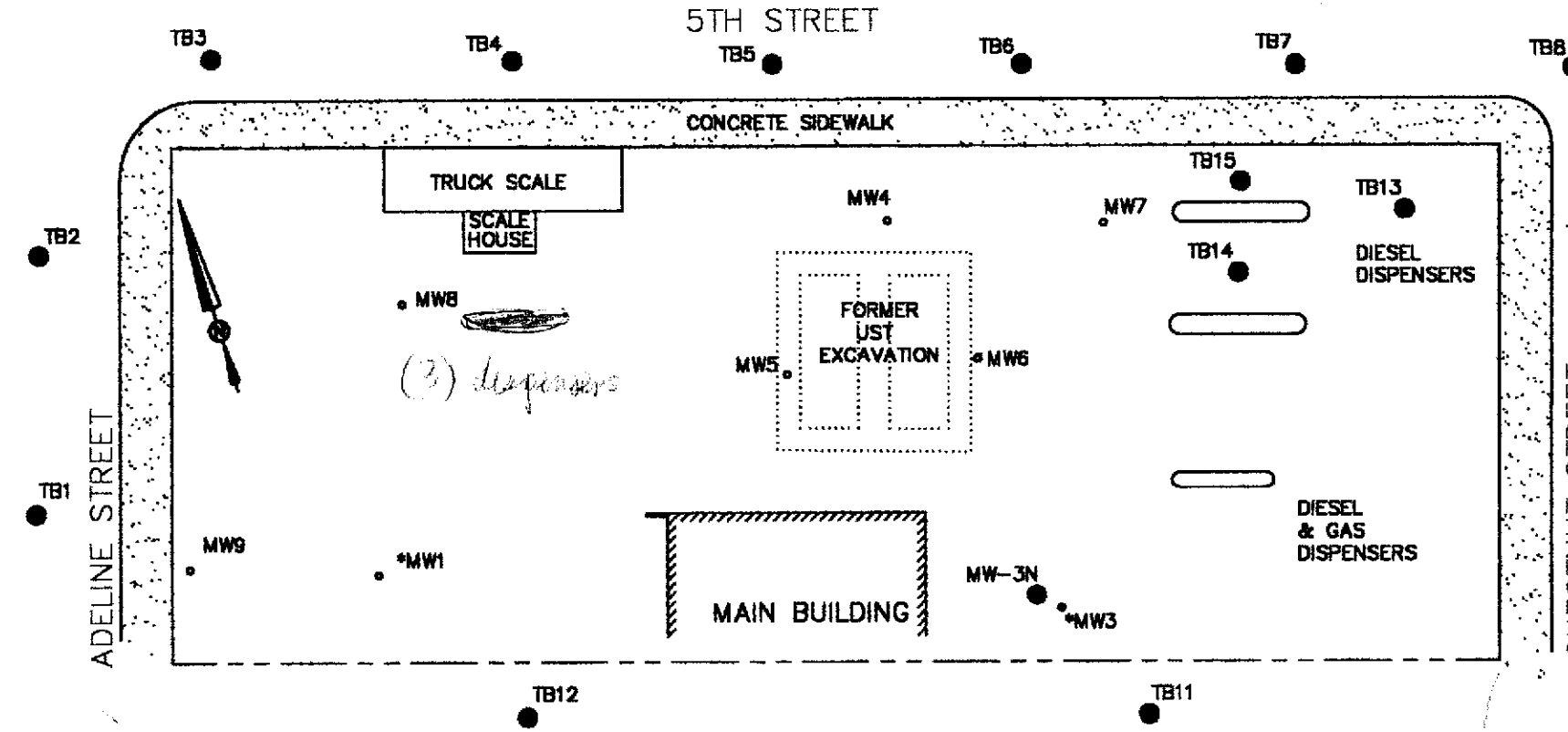


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Proposed Monitoring Well and
OAKLAND TRUCK ST
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