"IMAGINEERING A CLEANER WORLD"

RIEDEL ENVIRONMENTAL SERVICES, INC.

San Francisco Region:
P.O. Box 2433
Richmond, California 94802
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December 15, 1987

OLIVER de SILVA, INC.
P.O. Box 4437
Hayward, California 94540

Attention: Pete Davos

Subject: Underground Storage Tank Removals

Dear Mr. Davos:

Riedel Environmental Services, Inc. (RES) is pleased to submit to Oliver de Silva (ODS) this report describing our activities at your Castro Valley construction site during the period of October 21, 1987 through November 10, 1987.

The results of our work at Site No. 1 (corner of Castro Valley Boulevard and Foothill Boulevard) were the removal of the tanks and site closure. Due to the fact that the contamination at this location was so localized and low level, we are not recommending a monitoring well.

At Site No. 2 (location of abandoned Cal Trans Maintenance Yard) we utilized every type of investigation at our disposal to find the tank and were not successful. Our conclusion is that it is very likely that the tank was removed at some time prior to our excavation activities.

We look forward to the opportunity to work with you in the future. If you have any questions, please feel free to contact me.

Sincerely,
Riedel Environmental Service, Inc.

John R. Fulkerson
Project Manager

Attachments

cc: Bob Bowman, Castro Valley Fire Department
Ray Burton, Cal Trans
Ted Gerow, Alameda County Department of Environmental Health

UNDERGROUND STORAGE TANK REMOVALS

Prepared for:

OLIVER de SILVA, INC.
P.O. BOX 4437
HAYWARD, CALIFORNIA 94540

Prepared by:

RIEDEL ENVIRONMENTAL SERVICES, INC.
4138 LAKESIDE DRIVE
RICHMOND, CALIFORNIA 94806

November 13, 1987

1.0 INTRODUCTION

This report presents the results of an underground storage tank identification and removal project performed by Riedel Environmental Services, Inc. (RES) for Oliver de Silva, Inc. (ODS). The site is located near the intersection of Castro Valley Boulevard and Foothill Boulevard in Castro Valley, California.

1.1 Site History

Site #1, which is located on the north corner of the intersection of Castro Valley Boulevard and Foothill Boulevard, was an abandoned service station. This entire area is part of a freeway interchange construction project being installed by Cal Trans. During excavation for a storm drain catch basin in October, 1987, a contractor hit an underground storage tank. At that time work was ceased in the immediate vicinity of the tank and the excavation was backfilled.

Site #2, which is located north of Castro Valley Boulevard approximately 500 feet northeast of Foothill Boulevard, was originally a PG&E service yard. Ownership was subsequently transferred to East Bay Municipal Utility District and then Cal Trans. The construction drawings for the freeway construction show the location of a 1,000 gallon underground storage tank in this service yard. Much of this area has recently been covered by up to 10' of fill in preparation for construction of the freeway interchange.

1.2 Scope of Work

RES was retained to remove the two underground storage tanks in October, 1987. The purpose was to close the two sites before construction progressed to a point that work in the areas was impractical. Field work commenced on October 21, 1987. The project consisted of removal of the tanks at both sites along with a soil investigation to determine whether soil contamination existed at the locations.

During excavation for removal of the tank at Site #1, two other tanks were discovered and also removed. Soil samples were taken from under both ends of all of the tanks. These samples were submitted to a state certified laboratory for analysis for total petroleum hydrocarbons and lead. A description of this work is presented in Section 2 of this report.

2.0 FIELD ACTIVITIES

2.1 Tank Removal at Site #1

RES started excavation for Tank #2, at the location shown on Figure 1. During excavation it was discovered that the tank was much longer than had been anticipated and a concrete block which was anchoring a guy wire to a power pole at the corner of the intersection would have to be moved. During the time it took to relocate the guy wire, work commenced on excavation at Site #2. After the guy wire was moved, excavation to remove Tank #2 was completed and the tank was inerted with dry ice. Tank #2 was then pulled and transported to a location northwest of the excavation area for cleaning. The tank had a 4,000 gallon capacity and was 6'2" diameter and 18' long. It was intact with the exception of a hole in the top at the south end which was caused when it was hit by the contractor's backhoe during the storm drain excavation.

During excavation for Tank #2, two additional tanks were discovered. Tank #1 was located to the east of and parallel to Tank #2. This tank was excavated, inerted, and pulled next. It was transported to a location next to Tank #2 for cleaning. Tank #1 had a 2,000 gallon capacity and was of 6'2" diameter and 9' long. This tank was intact with no visible damage or holes when pulled.

Tank #3 was located to the west of and parallel to Tank #2. During excavation it was discovered that there was approximately 8" of product in the tank. This product was removed by vacuum truck prior to inerting the tank with dry ice. The product was then transported to a licensed Treatment, Storage, and Disposal Facility for recycling. The tank was then pulled and transported to a location adjacent to Tank #2 for cleaning. The tank was intact with no visible damage or holes when pulled.

Product lines were removed by digging trenches from the points where the lines left the excavation. The lines were dry and the fill material showed no signs of contamination. The lines got progressively deeper as they were removed due to the presence of an embankment for a new freeway overpass. For this reason, we stopped removal of the lines as soon as they changed direction toward the same location. It is assumed that this was the location of the pump island.

2.1.1 Sampling and Sample Handling

Soil samples were collected form under both ends of all three tanks as shown in Figure 1. Brass sample tubes were used to collect the samples. Prior to use, the sample tubes were cleaned by rinsing with hexane, scrubbing with detergent, rinsing with tap water, rinsing with hexane, rinsing with deionized water, and rinsing with ASTM Type 2 water.

The samples were collected from the backfill material under the tanks due to the fact that the native material under the fill was bedrock and could not be sampled. The sample tubes were capped, labeled, sealed with custody seals, packed in an ice chest with dry ice, and delivered under standard chain of custody procedures to the laboratory for analysis. Sample numbers corresponding to each location and a sample description are shown in Table 1.

2.1.2 Tank Cleaning and Disposal

Tanks were staged on a gentle slope to allow for collection of the rinsates at one end of the tanks. After staging the tanks for cleaning, the atmospheres were measured to confirm that they were under 10% of the Lower Explosive Limit (LEL). Holes were then flame cut in one side and both ends of each tank to allow for access to clean the tanks.

Tank #2 contained approximately one cubic yard of soil which had fallen into the hole made by the backhoe when the tank was originally found and then backfilled. This soil was shoveled into D.O.T. approved 17H drums. The other tanks contained small amounts of sludge which were also shoveled into the 17H drums resulting in a total of four 55 gallon drums of contaminated soil. These drums were manifested as, "Hazardous Waste Solid, N.O.S., ORM-E, NA-9189," and transported to a licensed Transfer Station for sampling and laboratory analysis prior to their ultimate disposition at a Class 1 landfill.

The tanks were then pressure washed with the rinsates being pumped out between washings. The rinsates were pumped into two 55 gallon 17H drums for disposal. These were manifested as, "Hazardous Waste Liquid, N.O.S., ORM-E, NA-9189," and transported to a Licensed Treatment, Storage, and Disposal Facility for recycling.

The tanks were then transported as non-hazardous material and disposed of as scrap.

2.1.3 Backfill

The excavation was then backfilled and compacted to 90% relative compaction by Oliver de Silva, Inc.

2.2 Excavation at Site #2

The location of the tank at Site #2 was marked by surveyors from information provided on Cal Trans drawings. This location was near the edge of the fill area mentioned in Section 1.1. An area approximately 12' X 12' was excavated to at least 6' below original grade at this location and no tank was found. Work then moved to a location approximately 30' northwest of the original area of excavation. This was an area that Cal Trans engineers thought was the location of the tanks. At this location the fill was approximately 8' deep. We again excavated an area approximately 12' X 12' to at least 6' below original grade. At this location we found two tank fill pipes but, again, no tank. Since we had located fill pipes, we expanded the excavation in all directions after filling in the hole but were not successful in locating the tank. During subsequent days we excavated an area approximately 60' X 80' and found nothing else which would indicate the presence of an underground tank.

Our next approach was to enlist the services of a geophysicist to try to locate the tank. We laid out a 90' X 90' grid with stations on 10' centers and took ground conductivity readings at each station. This indicated that there were two possible areas where the tank could be located. These locations are identified on Figure 3. These locations were at +80N +70E and at +50N +50E. We resumed our excavation efforts in these two areas but were again unsuccessful in locating anything of significance.

Our final effort to locate the tank was to excavate at an area identified on a different drawing than we had been working from originally. This drawing showed a 20' X 20' tank pad with a pump pad on it as shown on Figure 2. We excavated an area approximately 20' X 20' to 8' below grade and found no tank.

We subsequently contacted PG&E to try and locate any old drawings of the service yard but were unsuccessful.

3.0 FIELD EVALUATION AND ANALYTICAL RESULTS

3.1 Results of Analyses

Soil samples from the six locations at Site #1 were analyzed at a state certified laboratory for total petroleum hydrocarbons by EPA method 3550/8015 and for lead by EPA method 3350/7420. The analytical results for samples from Site #1 are presented in Table 1. Laboratory reports are included in Appendix A.

Laboratory analysis showed the presence of gasoline in one sample. A concentration of 110 milligrams per kilogram (mg/Kg or parts per million) as aged gasoline was identified under the south end of Tank #3. Analysis of all other samples showed no detectable contamination by petroleum hydrocarbons at a detection limit of 10 mg/Kg.

Laboratory analysis for lead showed soil samples from locations 1, 2, 3, and 5 to have detectable concentrations of lead. All lead concentrations fall below both the total threshold limit concentration (TTLC) and ten times the soluble threshold limit concentration (STLC).

3.2 Evaluation of Data

Laboratory results indicate minor contamination by petroleum hydrocarbons is present under the south end of Tank #3. Tank #3 is surrounded by bedrock on the bottom and on three sides. The fourth side is bounded by Tank #2 which exhibited no contamination at either end. Tank #3 was the only tank containing product. Thus, it is assumed that the contamination did come from that tank and has not migrated significantly from the south end of the tank.

Laboratory results indicate minor contamination by lead is present in the soils, but at concentrations well below the TTLC values listed in Title 22 of the California Administrative Code. Due to the presence of lead at low levels throughout the excavation it is assumed that the contamination was from the gasoline in the tank or tanks when they were in use.

4.0 CONCLUSIONS

Based upon the low petroleum hydrocarbon and lead levels in the soils at Site #1, no soil excavation is necessary. Because the tank site is underlain by bedrock there is such little threat to groundwater that a monitoring well is not recommended.

Exploration at Site #2 has included all resources and methods which are at our disposal and we have not been successful in locating the tank. It is possible that the tank has been removed and if it has not, we can not determine its location.

For these reasons, we feel that no further remediation is required at either site.

TABLE 1

Results of Soil Sample Analysis
Cal Trans Castro Valley

Total Petroleum Hydrocarbons

Sample Number	Gasoline (mg/Kg)	Kerosene (mg/Kg)	Diesel (mg/Kg)
1 NE	ND (10)	ND (10)	ND (10)
1 SW	ND (10)	ND (10)	ND (10)
2 NE	ND (10)	ND (10)	ND (10)
2 SW	ND (10)	ND (10)	ND (10)
3 NE	ND (10)	ND (10)	ND (10)
3 SW	110	ND (10)	ND (10)

Sample Number	Lead (mg/Kg)	TTLC Wet-Weight (mg/Kg)	STLC (mg/Kg)
1 NE	2.8	1,000	5.0
1 SW	14	1,000	5.0
2 NE	6.5	1,000	5.0
2 SW	ND (0.5)	1,000	5.0
3 NE	2.0	1,000	5.0
3 SW	ND (0.5)	1,000	5.0

mg/Kg - Miligrams per Kilogram (ppm)
ND (10) - None Detected (detection limit in ppm)
TTLC - Total Threshold LImit Concentration
STLC - Soluble Threshold Limit Concentration

Figure 1

SITE NO. 1

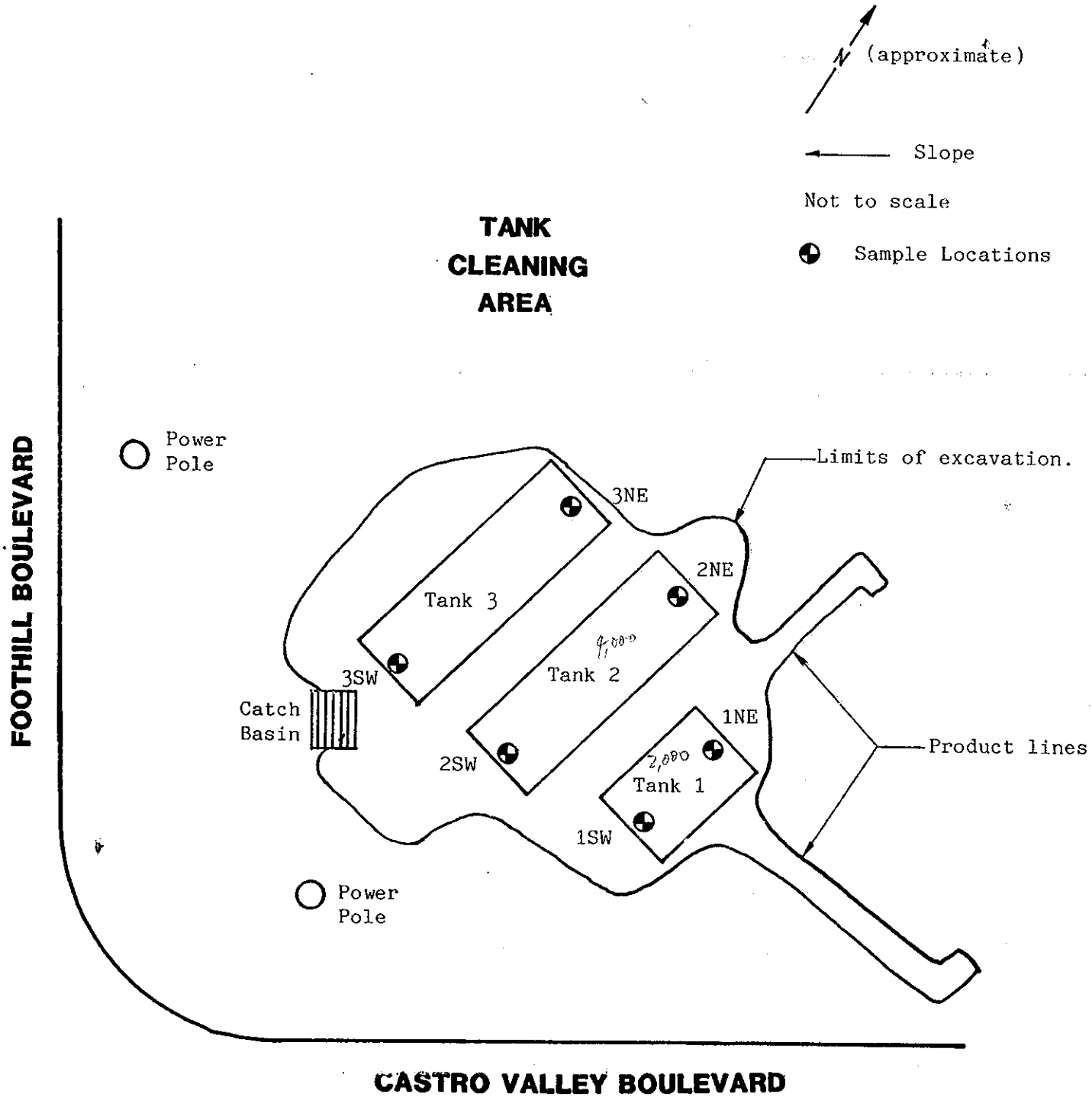


FIGURE 2

SITE NO. 2

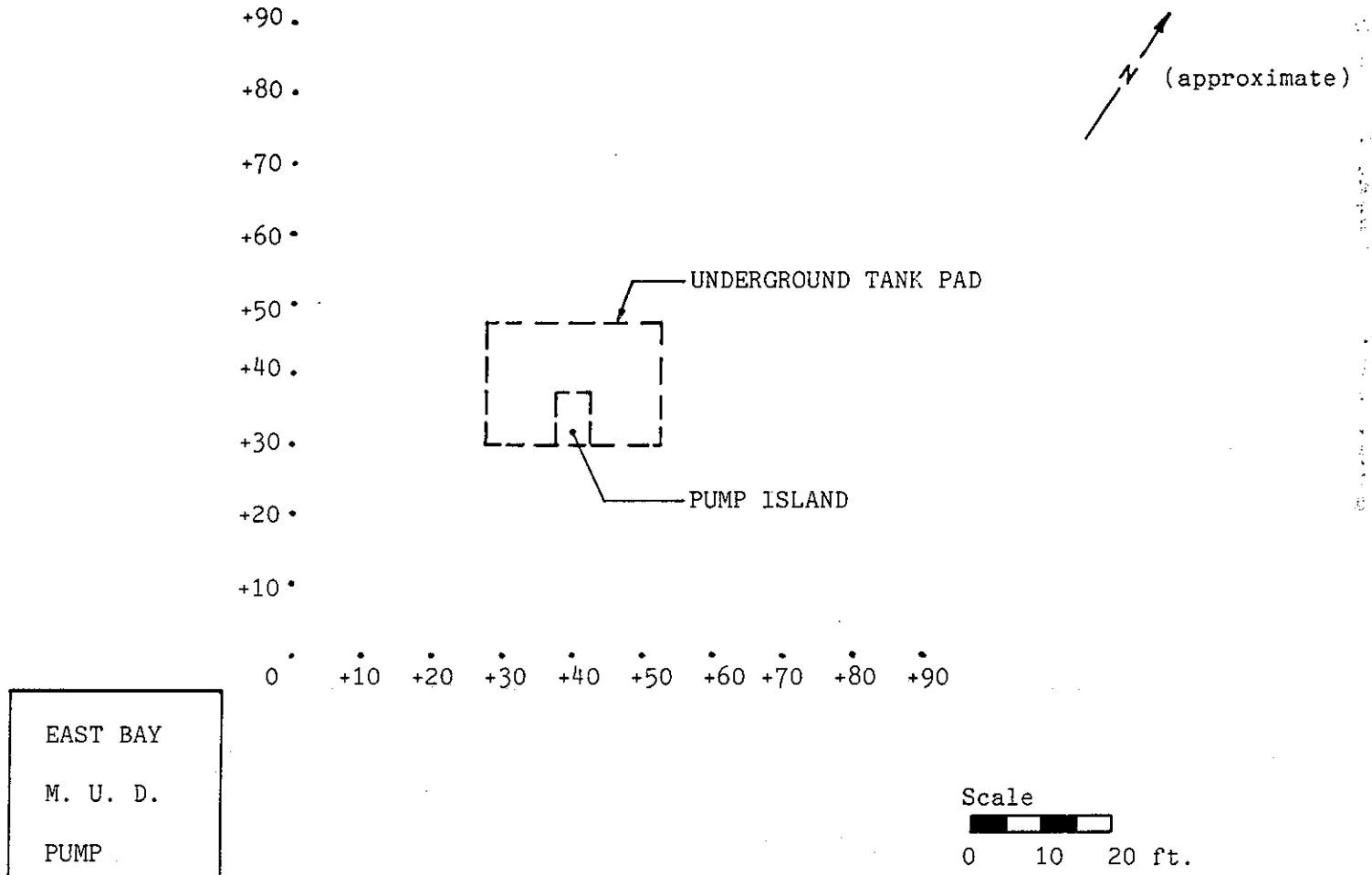
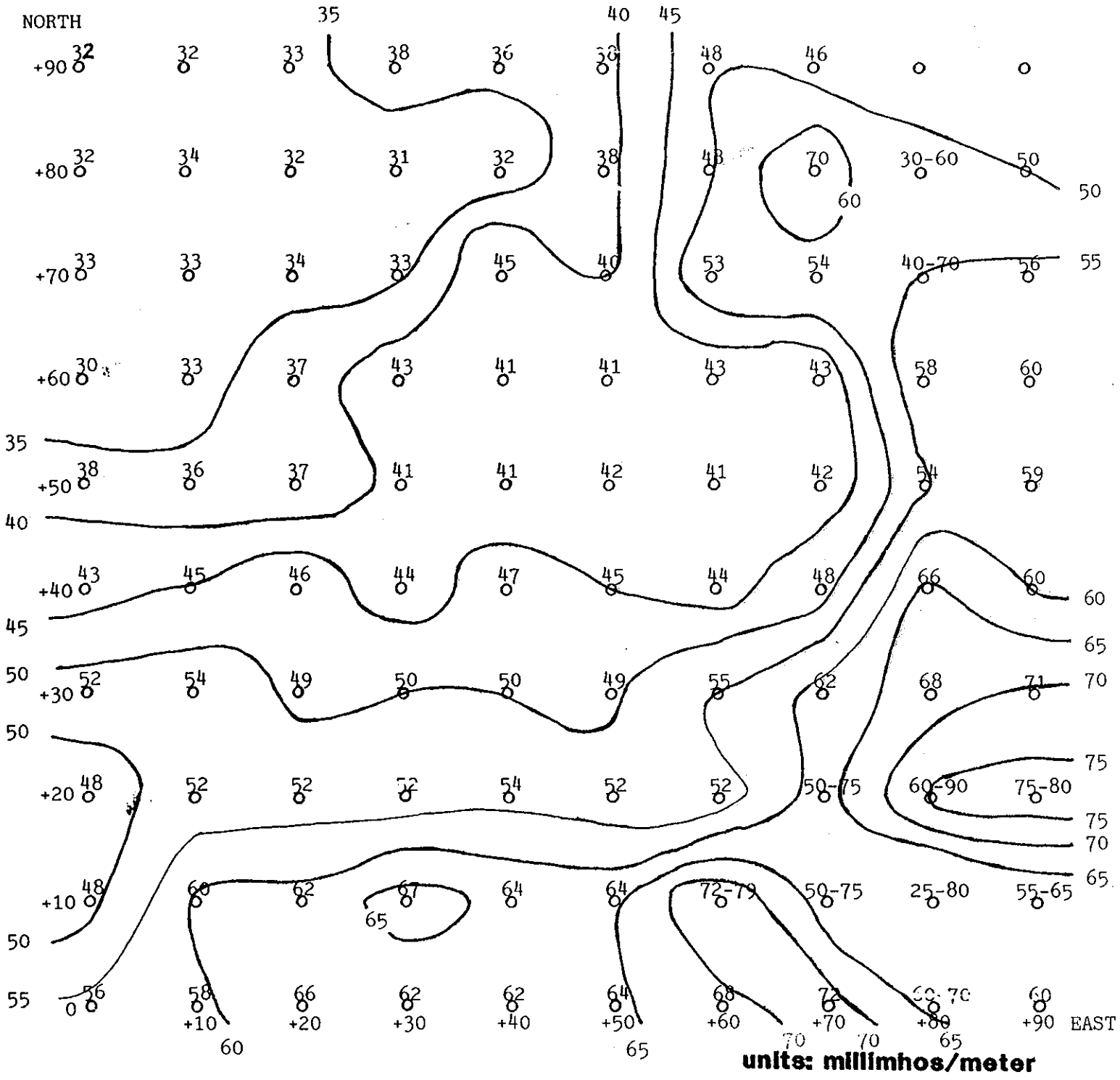


Figure 3

GROUND CONDUCTIVITY GRID AT SITE NO. 2



Appendix A

Curtis & Tompkins, Ltd.

JOB NUMBER: 13734
CLIENT: Riedel Environmental Services
PROJECT NAME: Caltrans
PROJECT #: 4313

DATE RECEIVED: 10/29/87
DATE ANALYZED: 10/30-11/02
DATE REPORTED: 11/03/87

Results of Analysis for Petroleum Hydrocarbons/Lead

Method References: TPH: Total Petroleum Hydrocarbons, EPA 3550/8015
Lead: EPA 3350/7420

C&T ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	LEAD (mg/Kg)
13734-1	Tank 1/NE End	ND(10)	ND(10)	ND(10)	2.8
13734-2	Tank 1/SW End	ND(10)	ND(10)	ND(10)	14

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

	TPH	LEAD
Duplicate: Relative % Difference	7	--
Spike: % Recovery	94	79

Deborah L. Hamel
Laboratory Director

RECEIVED NOV 16 1987

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
290 Division Street, San Francisco, CA 94103, Phone (415) 861-1863

LAB NUMBER: 13725
CLIENT: RIEDEL ENVIRONMENTAL SERVICES
PROJECT NO: 4313

DATE RECEIVED: 10/28/87
DATE ANALYZED: 10/28/87
DATE REPORTED: 11/2/87

Results of Analysis for Petroleum Hydrocarbons

Method References: TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

C&T ID	RIEDEL ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)
13725-1	#2 SW END	ND(10)	ND(10)	ND(10)
13725-2	#2 NE END	ND(10)	ND(10)	ND(10)

QA/QC SUMMARY

Duplicate: Relative % Difference	17.2
Spike: % Recovery	96

Deborah L. Hawnel
Laboratory Director

Curtis & Tompkins, Ltd.

LAB NUMBER: 13725
CLIENT: RIEDEL ENVIRONMENTAL SERVICES
PROJECT NO: 4313
SAMPLE ID: SAMPLE 1: #2 SW END
SAMPLE 2: #2 NE END

DATE RECEIVED: 10/28/87
DATE ANALYZED: 10/29/87
DATE REPORTED: 11/2/87

TOTAL LEAD: METHOD 7420

C&T ID	RIEDEL ID	TOTAL LEAD, mg/Kg
13725-1	#2 SW END	ND (0.25)
13725-2	#2 NE END	6.5

QA/QC

% RPD	1
% RECOVERY	97

Curtis & Tompkins, Ltd.

JOB NUMBER: 13749
CLIENT: Riedel Environmental Services
PROJECT NAME: Caltrans
PROJECT #: 4313

DATE RECEIVED: 10/30/87
DATE ANALYZED: 11/1-2/87
DATE REPORTED: 11/03/87

Results of Analysis for Petroleum Hydrocarbons/Lead

Method References: TPH: Total Petroleum Hydrocarbons, EPA 3550/8015
Lead: EPA 3350/7420

C&T ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	LEAD (mg/Kg)
13749-1	Tank 3/SW End	110 (Aged)	ND(10)	ND(10)	ND(0.5)
13749-2	Tank 3/NE End	ND(10)	ND(10)	ND(10)	2.0

ND = Not Detected; Limit of detection indicated in parentheses.

Deborah L. Hamm
Laboratory Director

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