ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

REMEDIAL ACTION COMPLETION CERTIFICATION

March 30, 1999

Mr. Paul Parkman
Clawson Project Associates
4096 Piedmont Avenue, Suite 333
Oakland, CA 94611

Mr. Steve Somsen
Oakland Unified School District
1025 Second Avenue
Oakland, CA 94606

RE: STID # 3652 Former Clawson High School
3420 Peralta Street, California 94608

Dear Messrs. Parkman and Somsen:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Section 2721 (e) of Title 23 of the California Code of Regulations.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung, Director

c: Chuck Headlee, San Francisco Bay RWQCB
Dave Deaner, SWRCB, UST Cleanup Fund Program (with enclosure)
Leroy Griffin, Oakland Fire Dept., 1605 Martin Luther King Jr Way, Oakland, CA 94612
Susan Hugo (2 copies of letter only)

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Clawson Project Associates
4096 Piedmont Avenue, Suite 333
Oakland, CA 94611

Mr. Steve Somsen
Oakland Unified School
1025 Second Avenue
Oakland, CA 94606

RE: Fuel Leak Site Case Closure – Former Clawson High School (STID # 3652)
3420 Peralta Street, Oakland, California 94608

Dear Messrs. Parkman and Somsen:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37 [h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health Services, Local Oversight Program is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

Site Investigation and Cleanup Summary:

Please be advised that the following conditions exist at the site:

- Four hundred thirty parts per million (ppm) Total Petroleum Hydrocarbon (TPH) as Diesel, 360 ppm TPH as motor oil and 270 ppm total lead remain in the soil at the site.
- Eight hundred fifty parts per billion (ppb) TPH diesel remain in the groundwater beneath the site.
- Prior to any construction activity and/ or change in land use at the site, a risk management plan, which may include risk assessment, must be submitted and approved by this agency.

If you have any questions, please contact me at (510) 567-6780. Thank you.

Sincerely,

Susan L. Hugo

Susan L. Hugo, Hazardous Materials Specialist

Enclosures:
1. Case Closure Letter
2. Case Closure Summary

c: Leroy Griffin, Oakland Fire Department, 1605 Martin Luther King Jr. Way, Oakland, CA 94612
SH / files

ALAMEDA COUNTY
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REMEDIAL ACTION COMPLETION CERTIFICATION

March 30, 1999

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Clawson Project Associates
4096 Piedmont Avenue, Suite 333
Oakland, CA 94611

Mr. Steve Somsen
Oakland Unified School District
1025 Second Avenue
Oakland, CA 94606

RE: STID # 3652 Former Clawson High School
3420 Peralta Street, California 94608

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Susan Hugo (2 copies of letter only)

RO#01-0427

CALIFORNIA REGIONAL WATER

FEB 04 1999

QUALITY CONTROL BOARD

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Agency Name: **Alameda County-HazMat**
City/State/Zip: **Alameda, CA 94502**
Responsible Staff Person: **Susan L. Hugo**

Date: January 5, 1999
Address: **1131 Harbor Bay Parkway**
Phone: **(510) 567-6700**
Title: **Hazardous Materials Specialist**

II. CASE INFORMATION

Site Facility Name: **Former Clawson High School**
Site Facility Address: **3420 Peralta Street, Oakland, CA 94608**
RB LUSTIS Case No: **N/A**
Local Case No./LOP Case No. **3652**
URF Filing Date: **9/20/91**
SWEEPS No. **N/A**

Responsible Parties:	Address:	Phone Numbers:
Oakland Unified School District **Attn: Mr. Steve Somsen**	**1025 Second Avenue, Oakland, CA 94606**	
Clawson Project Associates **Attn: Mr. Paul Parkman**	**4096 Piedmont Avenue, #333, Oakland, CA 94611**	

Tank No:	Size in gal:	Contents:	Closed in-place or removed?:	Date:
1	2500	Heating Fuel	Removed	4/8/93

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Unknown**
Site characterization complete: **Yes**
Date Approved by oversight agency: **3/24/93**
Monitoring wells installed: **Yes**
Number: **Three (3)**
Properly screened interval ?: **Yes**
Highest GW depth below ground surface: **6.16 feet**
Lowest depth: **13.27 feet**
Flow direction: **Westerly**
Most sensitive current use: **Work / Live**
Are drinking water wells affected: **No**
Aquifer name: **NA**
Is surface water affected?: **No**
Nearest affected SW name: **NA**
Off-site beneficial use impacts (address /location): **Unknown**
Report (s) on file?: **Yes**
Where is report (s) filed?: **Alameda County, 1131 Harbor Bay Parkway, Alameda, CA 94502**

Treatment and Disposal of Affected Materials:

Materials	Amount (Include units)	Action (Treatment /or Disposal with Destination)	Date
Tanks	1 UST	Disposed at H & H, San Francisco, CA	4/8/93
Soil	130 cubic yards	Used as backfill for tank excavation.	

Maximum Documented Contaminant Concentrations -- Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before*	After**	Before***	After****
TPH (diesel)	1100	430	30,000	850
TPH (motor oil)	990	360	-	-
Benzene	nd	nd	nd	nd
Ethyl benzene	nd	nd	nd	nd
Toluene	0.050	nd	(3.0)	nd
Xylene	0.005	nd	nd	nd
Lead	See Additional Comments			nd

*Soil samples collected from either borings B-19 or B-5 at 13 feet bgs in 1991.
**Soil sample TB-E collected at bottom of the tank excavation (12 feet bgs) on 4/8/93.
***Grab water sample collected from boring B-6 in 1991. (Toluene concentration found in well MW-1 in 1991).
****Groundwater sample collected from monitoring wells on the last sampling conducted on 3/13/96.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan?
Undetermined
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan?
Undetermined
Does corrective action protect public health for current land use? **Yes**
Site management requirements: **Risk Management Plan must be submitted and approved by ACDEH prior to any future construction and /or change in land use due to presence of lead in soil at the site.**
Should corrective action be reviewed if land use changes? **Yes**
Monitoring wells decommissioned: **No**
Number Decommissioned: **Three (3)** Number Retained: **Wells will be decommissioned after closure approval**
List enforcement actions taken: **None**
List enforcement action rescinded: **NA**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Susan L. Hugo Title: Hazardous Materials Specialist
Signature: Susan L Hugo Date: 2/3/99

Reviewed by:

Name: Thomas Peacock Title: Manager, LOP
Signature: Thomas Peacock Date: 2-3-99

Name: Don Hwang Title: Hazardous Materials Specialist
Signature: Don Hwang Date: 2/3/99

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response:

RWQCB Staff Name: Chuck Headlee Title: Engineering Geologist
Signature: Chuck Headlee Date: 2/11/99

VII. ADDITIONAL COMMENTS

The subject site consists of a three-story building and three one-story building located along the northern edge of the property and was occupied by a school from 1878 until the 1970s. The site is bordered by Peralta and Union Streets to the west, 32nd Street to the south, Magnolia Street to the east and residences to the north.

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

In June 1991, a preliminary site assessment was conducted at the subject property. During the investigation, a 2,500-gallon underground storage tank (UST) used for heating oil was discovered at the site. Twenty-nine (29) test borings were drilled and three (3) monitoring wells were installed during the investigation. Borings 1 thru 11 were drilled to depths ranging from 1 to 18 feet below ground surface (bgs). Borings 12 thru 19 and MW1 thru MW3 were drilled to depths ranging from 13 to 21 feet bgs. Soil samples collected from the borings found up to 1100 ppm Total Petroleum Hydrocarbon (TPH) as diesel, 990 ppm Total Recoverable Hydrocarbons (TRPH), 50 ppb toluene, 5.5 ppb xylenes and 347 ppm total lead (see Table 1 and Table 3). Groundwater sample collected from the wells found <0.2 ppm TPH diesel, nd for ethyl benzene, nd for benzene, nd for xylene and 3 ppb toluene (see Table 2). Methyl chloride was detected at low concentration (3.3 – 7.7 ppb) and may be due to cross contamination. A grab water sample collected from boring 6 near the tank area found up to 30 ppm of TPH diesel.

In April 1993, the heating oil UST was removed and the tank area was overexcavated. Approximately 130 cubic yards of soil was removed. Soil samples collected from the bottom of the excavation showed up to 430 ppm TPH diesel and 360 ppm TPH as motor oil. Benzene, ethyl benzene, toluene and xylene were non-detect. Soil samples collected along the piping trench at 3.5 to 5 feet bgs found no detectable level of petroleum hydrocarbon (see Table 4). However, the stockpiled soil samples showed up to 4,200 ppmTPH diesel and 4,100 ppm TPH as motor oil.

In March 1996, the three groundwater monitoring wells were sampled and found no detectable level of benzene, ethyl benzene, toluene, xylene and lead. TPH diesel was detected at very low concentration (850 ppb) in one well (MW-3) which is approximately 10 feet down-gradient of the tank area. The stockpiled soil was re-sampled and found very low levels of TPH diesel (15-94 ppm) and total lead (12-20 ppm) but non-detect for BTEX. The stockpiled soil was used to backfill the tank excavation.

Further site characterization was also conducted on January 30, 1998 to determine the extent of lead found in surface soil at the site. Twenty-one (21) borings were drilled at 0.5 to 2 feet bgs. Up to 614 ppm of total lead was found in the surficial soil (see Table 7). In May 1998, hot spot removal of soil with lead concentration exceeding 320 ppm was conducted at the site. Approximately 220 cubic yards of lead contaminated soil was excavated and disposed under manifest off-site. Confirmation soil samples showed up to 270 ppm total lead in soil remains at the site (seeTable 8).

No further investigations related to the USTs and the lead contaminated soil removed at the site are recommended since the site appears to meet the San Francisco Bay RWQCB's definition of a "low risk" soil and groundwater case:

1) Aggressive source removal has occurred at the site. The tank and lead contaminated soil exceeding 320 ppm have been removed. In addition, approximately 220 cubic yards of lead contaminated soil was excavated and disposed off-site.
2) The extent of soil and groundwater contamination has been adequately characterized. Although petroleum hydrocarbons in soil and groundwater remain at the site, it does not appear to be an on going source. Groundwater data collected to date showed that the plume is stable and not migrating.
3) Analytical groundwater data collected for the site showed no significant impact to groundwater.
4) No water wells, deeper drinking water wells, surface water or other sensitive receptors are likely to be impacted.
5) The site does not appear to present a significant risk to human health and the environment.
6) A risk management plan is required to manage the residual contamination left at the site and will include notifying ACDEH and City Building and Planning Department prior to any construction, redevelopment and /or change in land use.

Table 1.
Petroleum Hydrocarbons In Soil

Sample	Total Petroleum Hydrocarbons as Diesel (mg/kg)	Total Recoverable Hydrocarbons (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl-Benzene (ug/kg)	Total Xylenes (ug/kg)
1 @ 10.0'	110	--[1]	<5[2]	<5	<5	<5
1 @ 11.5'	110	500	<5	<5	<5	5.5
1 @ 14.5'	47	--	<5	6	<5	<5
1 @ 17.5'	<5	--	<5	<5	<5	<5
4 @ 8.0'	<5	--	<5	<5	<5	<5
4 @ 12.0'	240	960	<5	<5	<5	<5
4 @ 15.5	<5	--	<5	<5	<5	<5
5 @ 7.5'	<5	--	<5	<5	<5	<5
5 @ 13.0'	260	990	<5	<5	<5	5.5
5 @ 17.0'	80	--	<5	6	<5	<5
6 @ 6.0'	<5	--	<5	<5	<5	<5
6 @ 11.0'	130	280	<5	<5	<5	<5
6 @ 16.0'	<5	--	<5	<5	<5	<5
7 @ 10.0'	<5	--	<5	<5	<5	<5
8 @ 8.0'	<5	--	<5	<5	<5	<5
8 @ 13.0'	470	680	<5	6	<5	<5
9 @ 13.5'	<5	--	<5	<5	<5	<5
10@ 13.5'	<5	--	<5	<5	<5	<5
11@ 10.0'	<5	--	<5	<5	<5	<5
12@ 10.5'	<5	--	<5	<5	<5	<5
12@ 13.5'	<5	--	<5	5	<5	<5
12@ 16.5'	<5	--	<5	<5	<5	<5
13@ 10.5'	<5	--	<5	<5	<5	<5
13@ 14.0'	<5	--	<5	<5	<5	<5
14@ 3.5'	<5	--	<5	<5	<5	<5
14@ 7.5'	<5	--	<5	9	<5	<5
14@ 12.5'	<5	--	<5	<5	<5	<5
15@ 10.5'	<5	--	<5	<5	<5	<5
15@ 13.5'	<5	--	<5	8	<5	<5
16 @ 10.5'	<5	--	<5	<5	<5	<5
16 @ 14.5'	<5	--	<5	<5	<5	<5
17 @ 8.0'	<5	--	<5	16	<5	<5
17 @ 13.0'	<5	--	<5	10	<5	<5
18 @ 8.0'	<5	--	<5	18	<5	<5
18 @ 13.0'	31	--	<5	11	<5	<5
19 @ 8.0'	7	--	<5	<5	<5	<5
19 @ 13.0'	[illegible]	--	<5	50	<5	<5

1 -- = Test not requested
2 Less than reporting limit specified

Table 2
Contaminant Concentrations in Water

Sample	Total Petroleum Hydrocarbons as Diesel (mg/l)	Ethyl-Benzene (ug/l)	Total Toluene (ug/l)	Benzene (ug/l)	Xylenes (ug/l)	Methyl-Chloride (ug/l)	Other EPA 8010 Compounds (ug/l)
6	30	--	--	--	--	--	--
11	<5.0	--	--	--	--	--	--
MW-1	<0.2	<1.0	3.0	<1.0	<1.0	4.8	ND
MW-2	<0.2	<1.0	1.3	<1.0	<1.0	4.4	ND
MW-3	<0.2	<1.0	2.6	<1.0	<1.0	3.3	ND
Method Blanks	<0.2	<1.0	<1.0	<1.0	<1.0	7.7	ND

1 -- = Test not requested
2 Less then reporting limit specified
3 None detected, chemicals not present at concentrations above reporting limits

Table 3.
Lead Concentrations in Soil

Sample	Total Lead (mg/kg)	Soluble Lead (mg/l)
Tank Area		
6 @ 2.0'	22[2]	<0.10[1]
Fire Destroyed Building Area		
7 @ 1.5'	15[1]	<0.10
West Side of School Building		
11 @ 1.0'	260[1]	8.6
20 @ 0.5'	175	--
20 @ 3.5'	3.5	--
21 @ 1.5'	331	12.5
21 @ 3.0'	158	3.5
22 @ 1.0'	41.4	--
22 @ 2.5'	4.0	--
23 @ 0.5'	347	--
23 @ 3.5'	5.0	--
24 @ 3.0'	12.5	--
24 @ 4.5'	5.0	--
25 @ 1.0'	91.7	--
25 @ 4.0'	26.0	--
26 @ 0.5'	37.4	--
26 @ 2.0'	6.3	--
27 @ 1.5'	15.0	--
27 @ 4.5'	29.4	0.4
28 @ 2.5'	9.5	--
28 @ 4.0'	88.2	3.9
29 @ 0.5'	12.6	--
29 @ 2.0'	11.4	--

[1] Less than reporting limit specified
[2] Analysis performed on the sample after the maximum sample holding time had elapsed
[3] -- = Test not requested

Table 4
Summary of Chemical Analyses - Soil (UST Closure)
Oakland Unified School District - Clawson School
Oakland, California

Sample ID	Date Sampled	Approx. Sample Depth (ft)	EPA Test Method: BETX 5030/8020 Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	TPH-D 8015M Kerosene Range (mg/kg)	Diesel Range (mg/kg)	Motor Oil Range (mg/kg)	7420 Soluble Lead (mg/l)
Stockpiles										
SP-1	04/08/93	2	<0.005	0.014*	<0.005	0.066	**	570+	720+	NA
SP-2	04/08/93	2	<0.005	<0.005	<0.005	<0.005	**	510+	490+	NA
SP-3	04/08/93	2	<0.005	0.007	<0.005	0.014*	**	4,200+	4,100+	NA
Fill Lines										
FL-1	04/08/93	5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-2	04/14/93	4	<0.005	<0.005	<0.005	<0.005	**	19+	<30	NA
FL-3	04/14/93	4.5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-4	04/14/93	4	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-5	04/14/93	4	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-6	04/14/93	4	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-7	04/14/93	3.5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
Product Lines										
PL-1	04/08/93	5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
Excavation Base										
TB-W	04/08/93	12	<0.005	<0.005	<0.005	<0.005	**	64+	170+	NA
TB-E	04/08/93	12	<0.005	<0.005	<0.005	<0.005	**	430+	360+	NA
Test Pits										
TP-1-12.0	06/23/93	12	NA	NA	NA	NA	**	48	70	NA
TP-2-11.5	06/23/93	11.5	NA	NA	NA	NA	**	240	<300	NA
TP-3-12.0	06/23/93	12	NA	NA	NA	NA	**	200	<300	NA
W. Side of Site										
W-COMP-1	04/16/93	0.5	NA	NA	NA	NA	NA	NA	NA	19.0
Laboratory Reporting Limit			0.005	0.005	0.005	0.005	1	1	30	0.06

Notes:
TPH-D - Total petroleum hydrocarbons quantified as diesel fuel.
mg/kg - Milligrams per kilogram is equivalent to parts per million (ppm).
mg/l - Milligrams per liter is equivalent to parts per million (ppm).
* - Presence of this compound confirmed by second column; however confirmation concentration not reproducible.
** - Quantified as diesel due to overlap of hydrocarbon ranges.
+ - Pattern does not match standard.
NA - Not analyzed.

(TOC) well casing relative to MSL from a nearby benchmark. A copy of the surveyor's elevations and plot plan are included as Appendix 1.

Groundwater samples were collected from three onsite monitoring wells (MW-1, MW-2, and MW-3) on March 13, 1996. Work at the site included measuring depth to water, subjectively evaluating groundwater in the wells, and purging and sampling the wells for laboratory analysis. Information regarding well elevations and groundwater level measurements is summarized in Table 1.

TABLE 5 - GROUNDWATER DEPTH INFORMATION

Well No.	Date Sampled	Well Elevation* (above MSL)	Depth to Groundwater	Groundwater Elevation
MW-1	03/13/96	17.52	6.16	11.36
MW-2	03/13/96	17.76	7.21	10.55
MW-3	03/13/96	19.72	7.32	12.40

Notes: All measurements in feet
MSL = Mean sea level
*Well elevation measured to top of casing

After water level measurements were collected, each onsite well was purged by hand using a designated disposable Teflon® bailer. Groundwater pH, temperature, and electrical conductivity were monitored during well purging. Each well was considered to be purged when these

TABLE 6 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Well No.	Date Sampled	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	Total Lead (mg/L)
MW-1	03/13/96	<54	<0.5	<0.5	<0.5	<0.5	<0.005
MW-2	03/13/96	<50	<0.5	<0.5	<0.5	<0.5	<0.005
MW-3	03/13/96	850*	<0.5	<0.5	<0.5	<0.5	<0.005

Notes: µg/L = micrograms per liter (approximately equivalent to parts per billion)
* Unidentified hydrocarbons within diesel range, quantified as 850 ppb, using diesel standard

4.1.2 Groundwater Gradient

The groundwater gradient was calculated using the onsite monitoring wells. The location of the wells and groundwater flow direction are shown on Figure 3. Groundwater elevations were calculated from data collected from the wells on March 13, 1996.

TABLE ~~ONE~~ 7

Total Lead Concentrations In Soil

Soil Borings Drilled January 30, 1998

All Results in Parts Per Million

SAMPLE IDENTIFICATION	TOTAL LEAD	TOTAL LEAD ADJUSTED FOR 18% MOISTURE CONTENT
BH-A @ 0.5'	120	142
BH-A @ 1.0'	46	54
BH-A @2.0'	22	26
BH-B @ 0.5'	280	330
BH-B @ 1.0'	160	189
BH-B @ 2.0'	< 5.0	< 5.0
BH-C @ 0.5'	180	212
BH-C @ 1.0'	31	37
BH-D @ 0.5'	18	21
BH-D @ 1.0'	130	153
BH-D @ 2.0'	< 5.0	< 5.0
BH-E @ 0.5'	520	614
BH-E @ 1.0'	65	77
BH-F @ 0.5'	87	103
BH-F @ 1.0'	14	17
BH-F @ 2.0'	62	73
BH-G @ 0.5'	190	224
BH-G @ 1.0'	35	41
BH-H @ 0.5'	500	590
BH-H @ 1.0'	180	212
BH-H @ 2.0'	< 5.0	< 5.0
BH-I @ 0.5'	130	153
BH-I @ 1.0'	66	78
BH-I @ 2.0'	< 5.0	< 5.0
BH-J @ 0.5'	200	236
BH-J @ 1.0'	5.8	7
BH-K @ 0.5'	140	165
BH-K @ 1.0'	240	283
BH-L @ 0.5'	50	59
BH-L @ 1.0'	< 5.0	< 5.0
BH-M @ 0.5'	48	57
BH-M @ 1.0'	64	76
BH-N @ 0.5'	52	61

7

TABLE ~~ONE~~ (continued)

Total Lead Concentrations In Soil

Soil Borings Drilled January 30, 1998

All Results in Parts Per Million

SAMPLE IDENTIFICATION	TOTAL LEAD	TOTAL LEAD ADJUSTED FOR 18% MOISTURE CONTENT
BH-N @ 1.0'	< 5.0	< 5.0
BH-O @ 0.5'	120	142
BH-O @ 1.0'	< 5.0	< 5.0
BH-P @ 0.5'	99	117
BH-P @ 1.0'	5.6	7
BH-Q @ 0.5'	190	224
BH-Q @ 1.0'	97	114
BH-R @ 0.5'	120	142
BH-R @ 1.0'	22	26
BH-S @ 0.5'	170	201
BH-S @ 1.0'	28	33
BH-T @ 0.5'	24	28
BH-T @ 1.0'	< 5.0	< 5.0
BH-U @ 0.5'	250	295
BH-U @ 1.0'	74	87
NOTE:		
Bolded items depict soil samples and depths with lead concentrations exceeding the target cleanup value of 320 parts per million.		

TABLE ~~FOUR~~ 8

Total Lead Concentrations In Soil

Confirmation Soil Samples

All Results in Parts Per Million

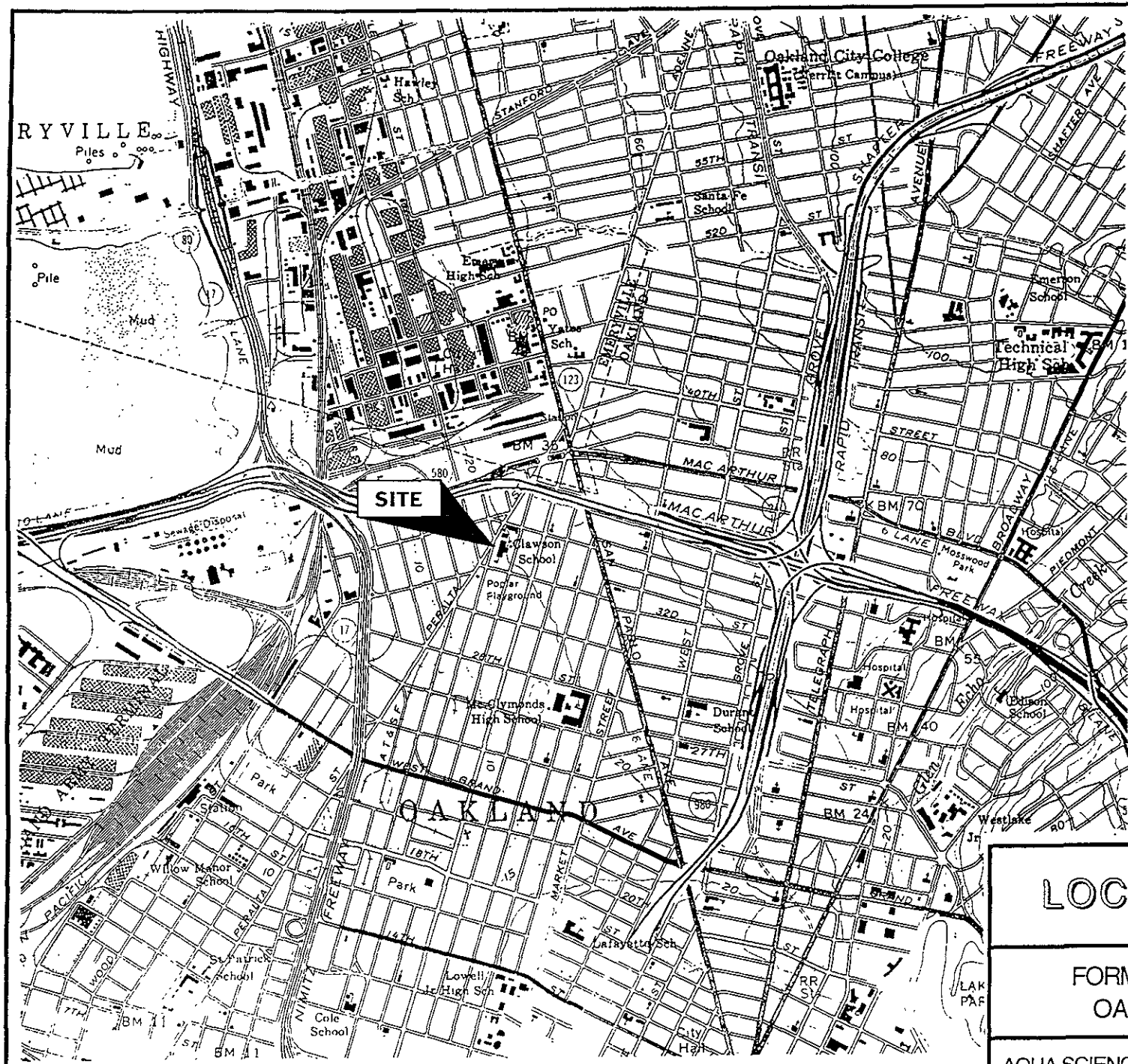
SAMPLE IDENTIFICATION	DATE SAMPLED	TOTAL LEAD
GRAB-A	MAY-20-98	10
GRAB-B	MAY-20-98	< 5.0
GRAB-C	MAY-20-98	11
GRAB-D	MAY-20-98	7.9
GRAB-E	MAY-20-98	210
GRAB-F	MAY-20-98	91
GRAB-G	MAY-20-98	45
GRAB-H	MAY-20-98	150
GRAB-I	MAY-20-98	22
GRAB-J	MAY-20-98	27
GRAB-K	MAY-20-98	32
GRAB-L	MAY-20-98	**380**
GRAB-M	MAY-20-98	240
GRAB-N	MAY-20-98	6.6
GRAB-O	MAY-20-98	48
GRAB-P	MAY-20-98	< 5.0
GRAB-Q	MAY-20-98	**340**
GRAB-R	MAY-20-98	8.7
GRAB-S	MAY-20-98	27
GRAB-T	MAY-20-98	< 5.0
GRAB-L-24"	JUNE-5-98	< 5.0
GRAB-Q-24"	JUNE-5-98	2~~1~~0

Bolded items depict soil samples with total lead concentrations exceeding the target cleanup value of 320 ppm, but were subsequently resampled after deeper overexcavation (see June 5 results).

Table 9.
Groundwater Level Measurements

Well	Top of Casing Elevation (feet)[1]	Date	Groundwater Depth (ft)	Groundwater Elevation (ft.)
MW-1	97.71	06/11/91	10.06	87.65
		06/17/91	10.21	87.50
		06/25/91	10.20	87.51
		07/22/91	11.46	86.25
		08/27/91	10.74	86.97
MW-2	97.93	06/11/91	11.12	86.81
		06/17/91	11.25	86.68
		06/25/91	11.20	86.73
		07/22/91	12.45	85.48
		08/27/91	11.76	86.17
MW-3	99.89	06/11/91	13.27	86.62
		06/17/91	11.37	88.52
		06/25/91	11.18	88.71
		07/22/91	12.39	87.50
		08/27/91	11.64	88.25

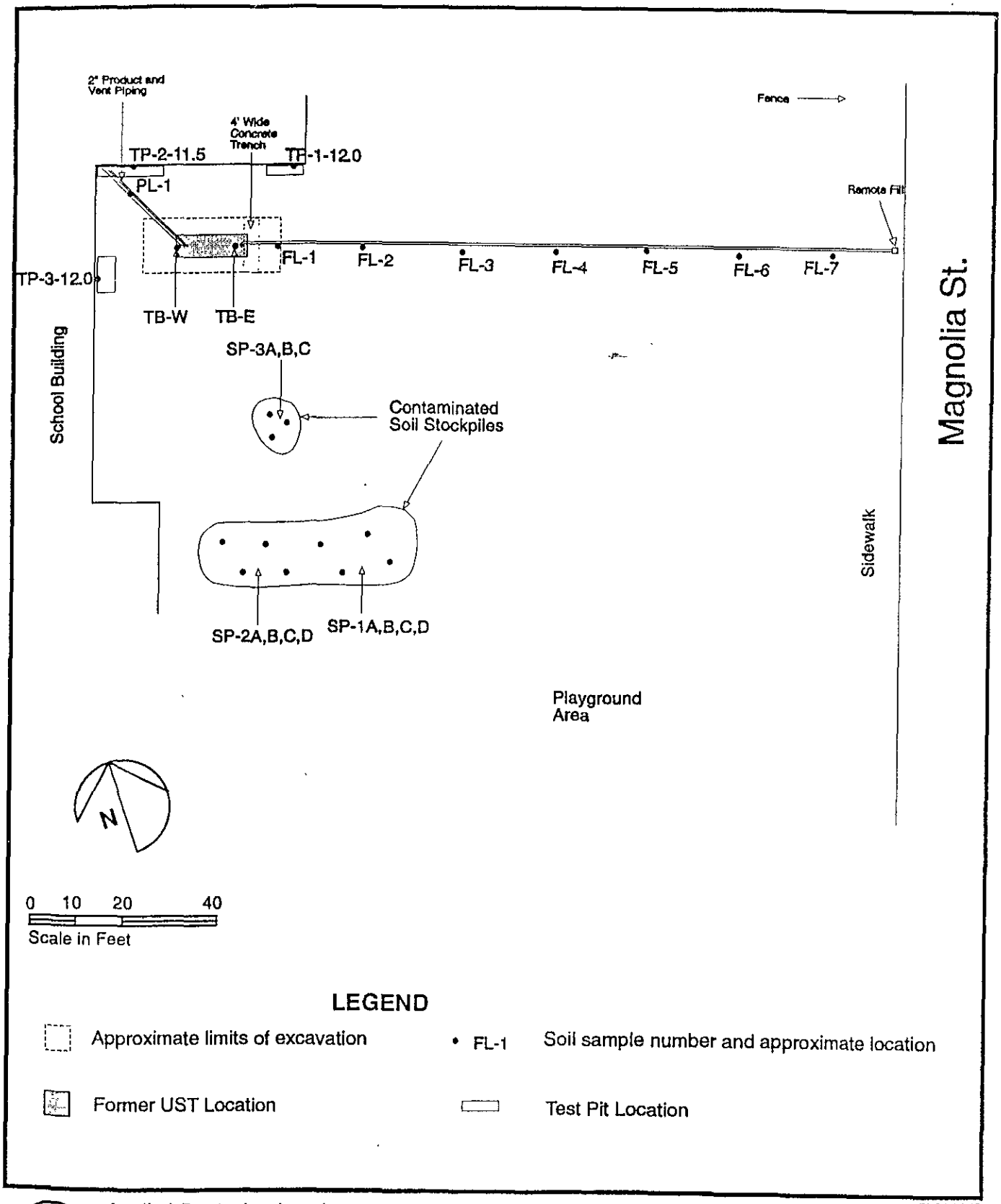
[1] Elevation Reference: Bottom of stairs at west side of Clawson School Building (see Plate 1) is assumed to be at elevation 100.00 feet.



LOCATION MAP

FORMER CLAWSON SCHOOL
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 1



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Site Plan

Oakland Unified School District/Clawson School
Oakland, California

FIGURE 2

JOB NUMBER	DRAWN	APPROVED	DATE	REVISED	DATE
15,692.001.04	JBA		3 May 93		

ELEVATION DATUM:
CONCRETE SLAB AT
BOTTOM OF STAIRS
ASSUMED AT 100.00 FEET

UNION STREET

SIDEWALK

PERALTA STREET

SIDEWALK

32ND STREET

SIDEWALK

MW-1

MW-2

MW-3

20 175

21 3314

22 41.4

23 347

24 12.5

25 91.7

26 37.4

27 29.4

28 88.2

29 126

1 110

2

3

4 240

5 260

6 130 22

7 <5 15

8 470

9 <5

10 <5

11 <5 260

12 <5

13 <5

14 <5

15 <5

16 <5

17 <5

18 31

19 1100

86.5'

87.0'

87.5'

88.0'

block out

CLAWSON SCHOOL BUILDING

PROGRESSIVE
SENIOR CENTER
1961 TO PRESENT

OUT BUILDING
1961? TO PRESENT

UNCONFIRMED
CLAWSON SCHOOL
LOCATION
1878 – 1892
(MOVED)

FORMER CLAWSON SCHOOL LOCATION
1892–1914 (DESTROYED BY FIRE)

OUT
BUILDING
1961? TO
PRESENT

SIDEWALK

MAGNOLIA STREET

TEST BORING – PHASE 1 STUDY
TEST BORING – PHASE 2 STUDY
MONITORING WELL
TEST BORING TO INVESTIGATE LEAD
APPROXIMATE LOCATION OF TANK
FORMER BUILDING LOCATION

86.5' GROUNDWATER CONTOURS FOR AUGUST 27, 1991 READING
ESTIMATED LIMIT OF SOIL CONTAMINATION
470 HIGHEST TPH CONCENTRATION ENCOUNTERED IN SOIL (mg/kg)
PROPERTY LINE
347 HIGHEST TOTAL LEAD CONCENTRATION IN SOIL (mg/kg)

N

APPROXIMATE SCALE (feet)
0 40 80

SITE PLAN

Subsurface Consultants

CLAWSON SCHOOL SITE – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
272 023	6/17/91	

PLATE 3

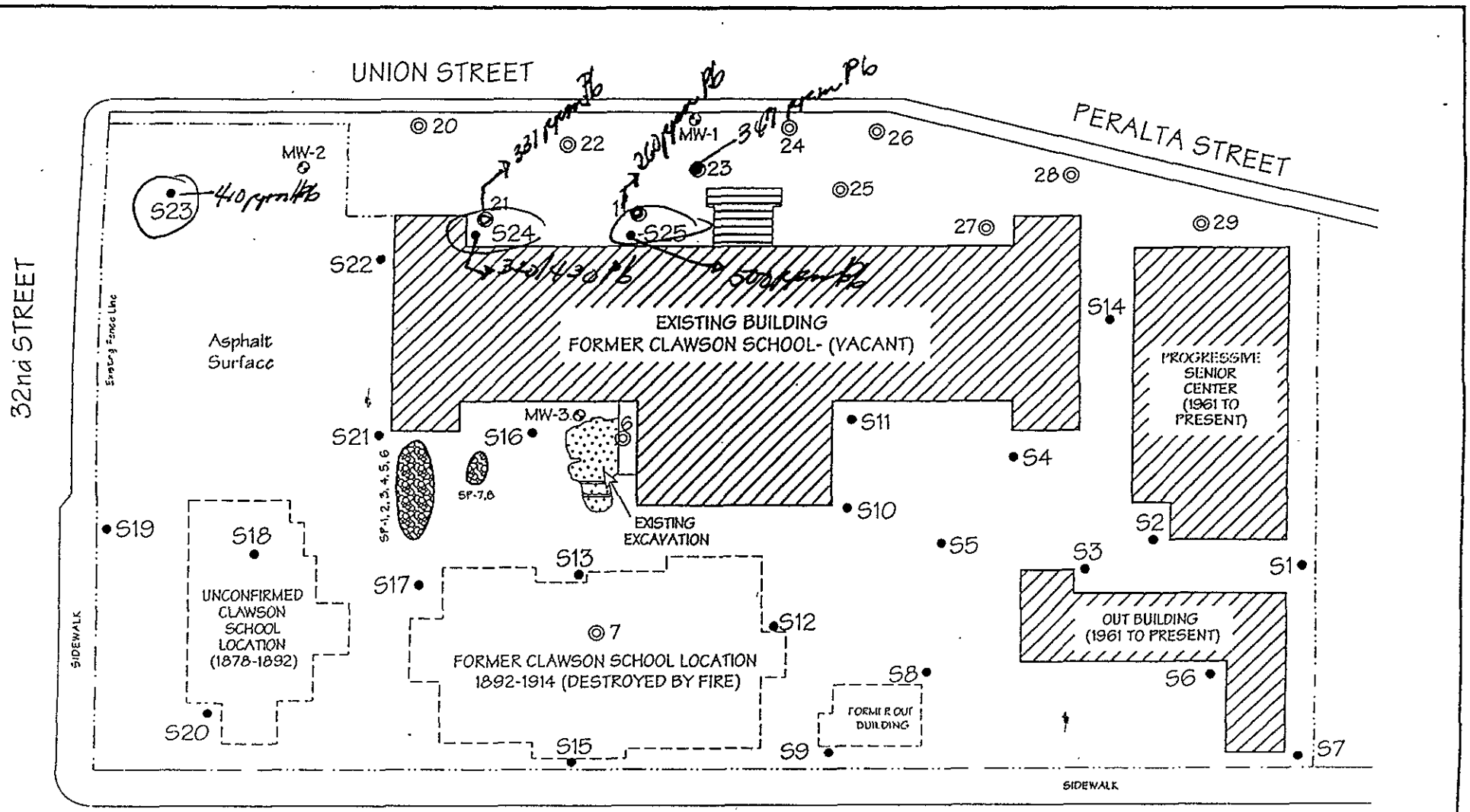
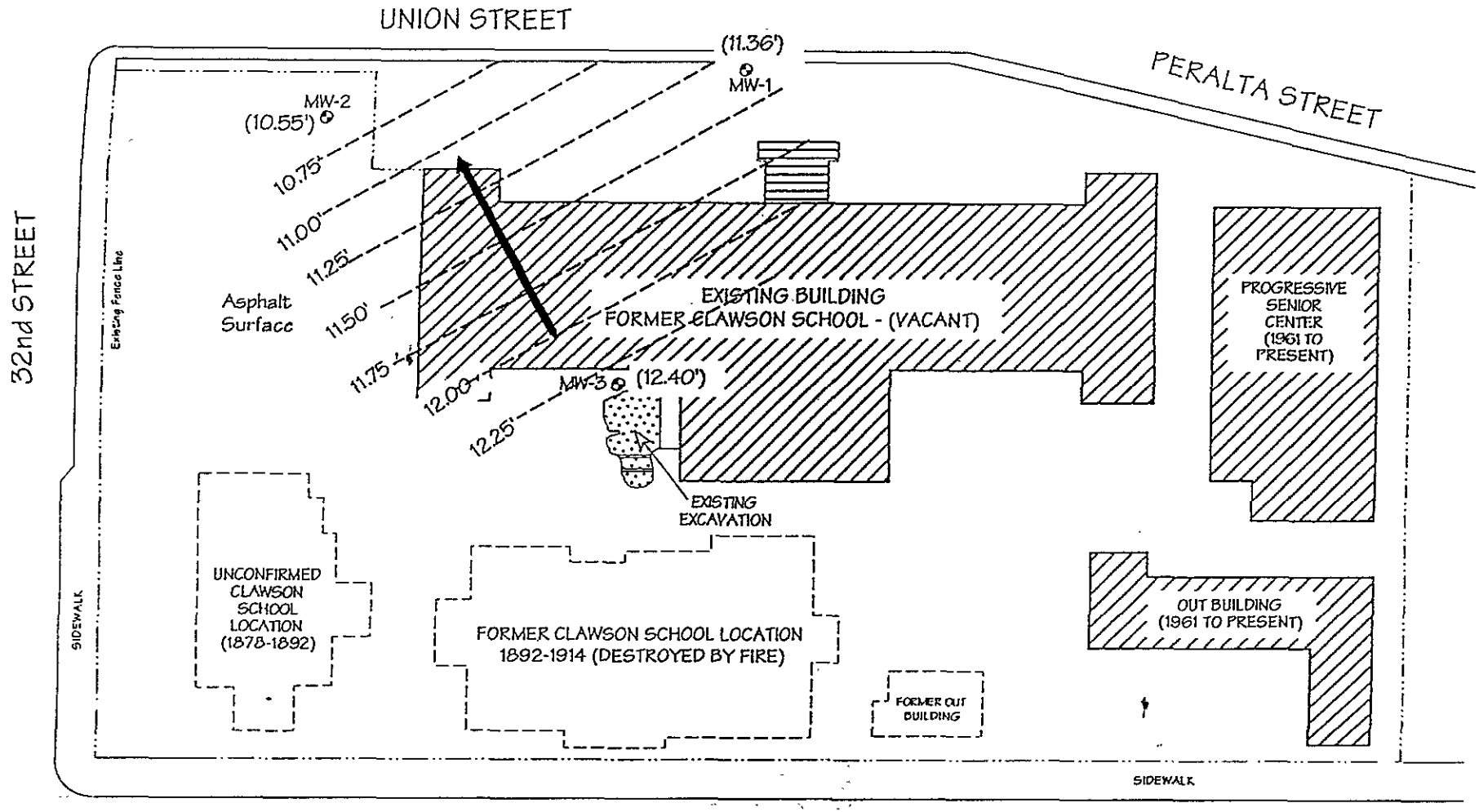


FIGURE 4

Title:	Site Plan Clawson School Site Oakland, California
Figure Number: 2.0	Scale: 1" = 60"
Drawn By: JVC / MCR	Date: 3/19/96
Project Number: 6287-2.1	

ACC Environmental Consultants
7977 Capwell Drive, Suite 100
Oakland, California 94621
(510) 638-8400 Fax: (510) 638-8404



FIGURES

LEGEND

MW-2 ⊙ - Existing Groundwater Monitoring Well

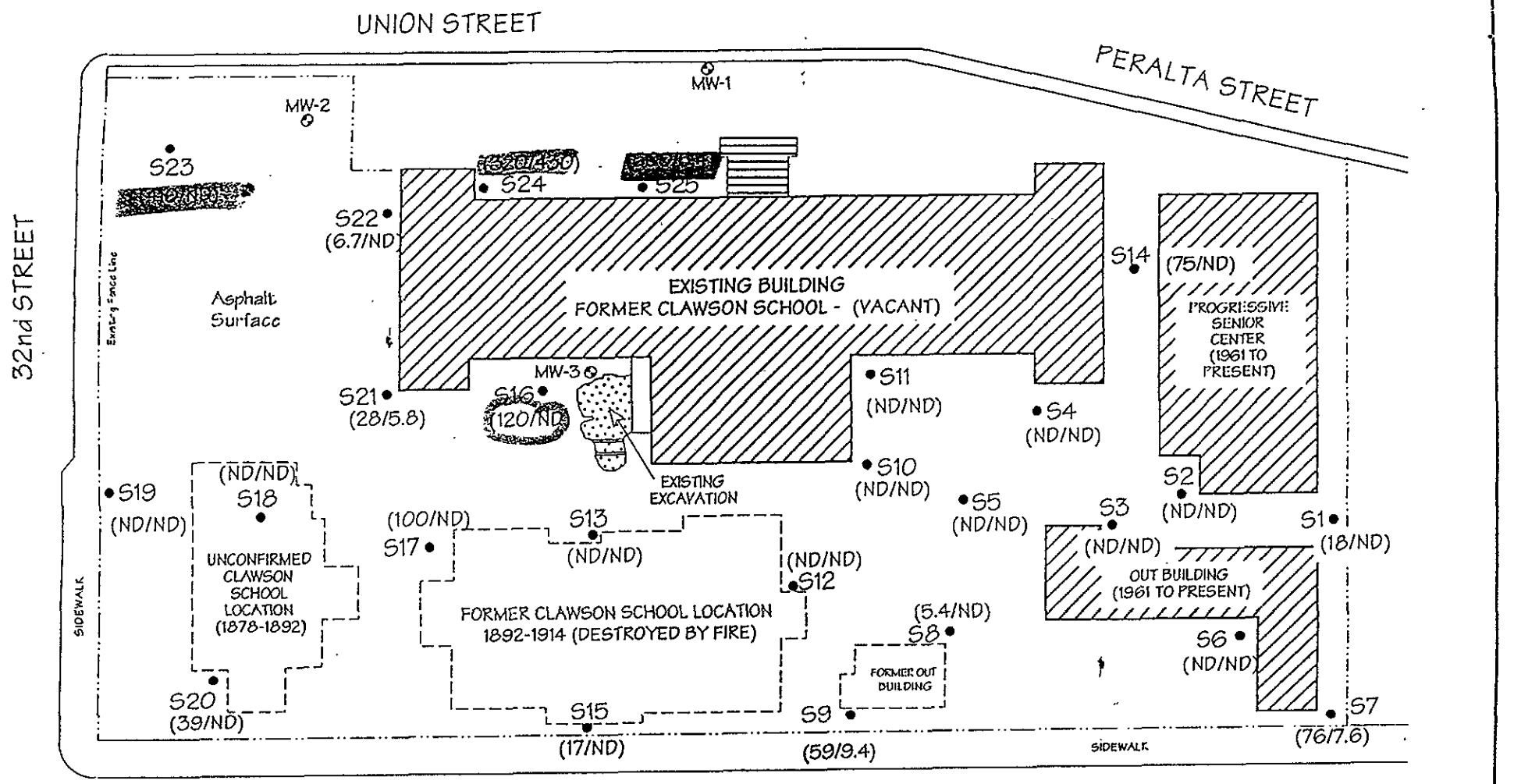
(#) - Groundwater elevation as calculated from levels measured on March 13, 1996

- Groundwater Flow Direction

Title:	Groundwater Gradient Clawson School Site Oakland, California
Figure Number: 3.0	Scale: 1" = 60"
Drawn By: JVC / MCR	Date: 3/19/96
Project Number: 6287-2.1	

ACC Environmental Consultants
7977 Capwell Drive, Suite 100
Oakland, California 94621
(510) 638-8400 Fax: (510) 638-8404

N W E S



LEGEND

MW-2 ⊙ - Existing Groundwater Monitoring Well

S15 • - Soil Boring Location (March 14, 1996)

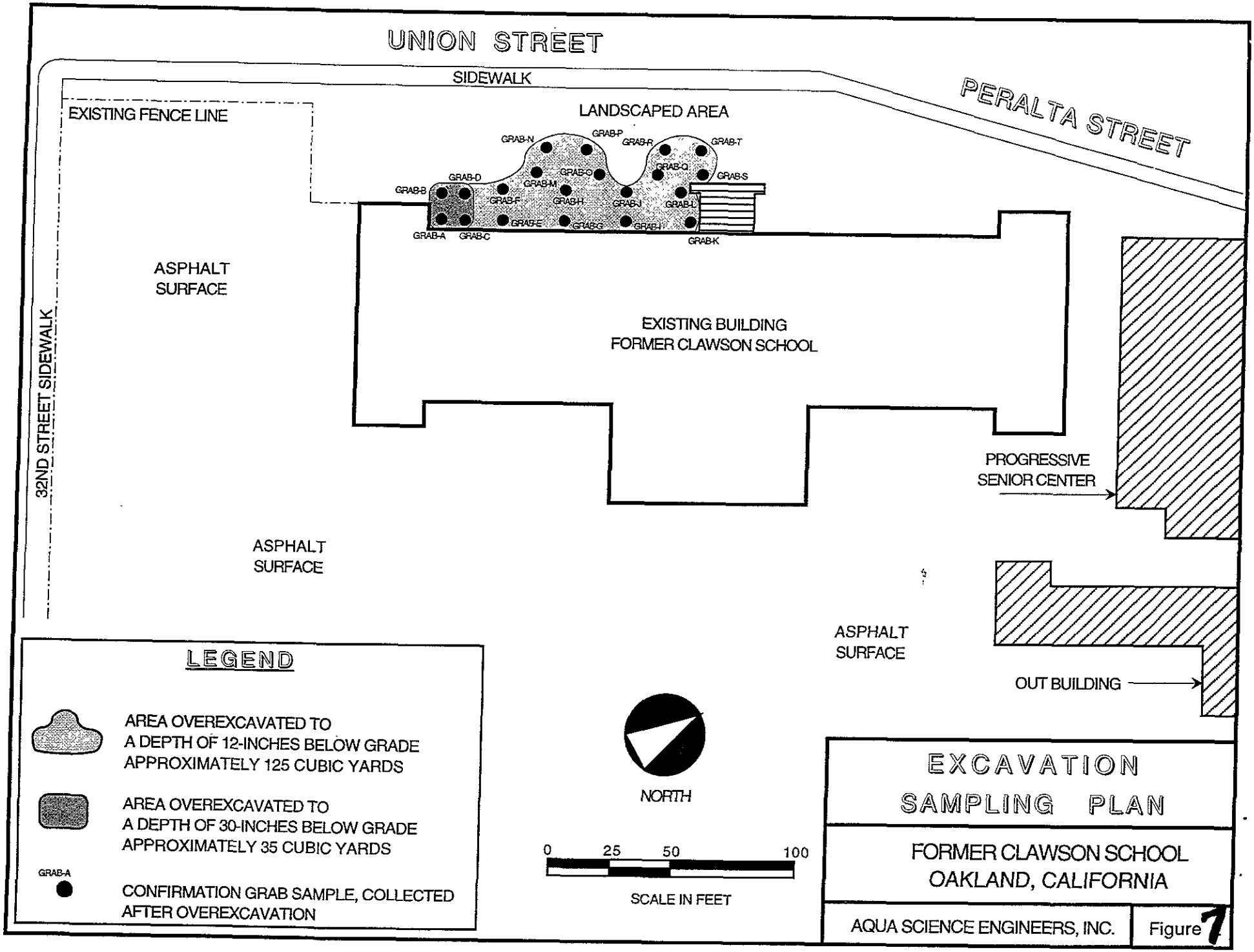
(#/#) - Total lead concentration from samples collected at a (shallow/deeper) depth below ground surface (in parts per million)

ND - Not detected above reporting limit of 5.0 mg/kg

FIGURE 6

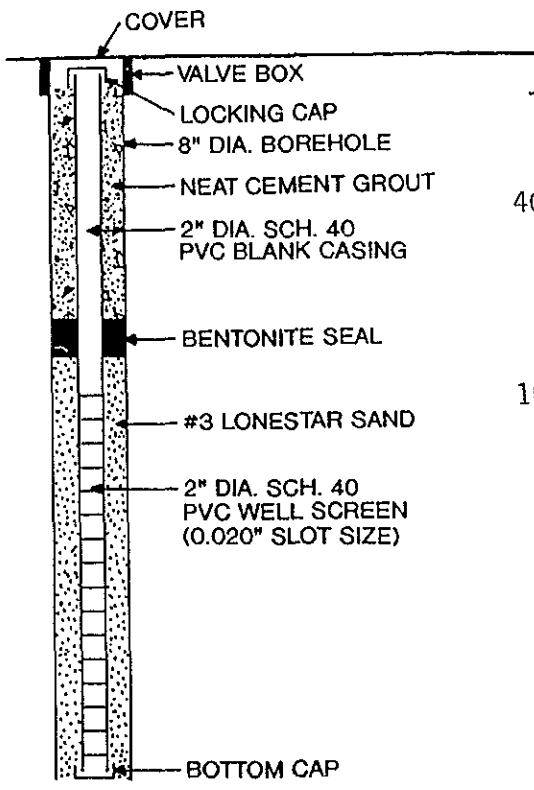
Title: Lead Results Clawson School Site Oakland, California	
Figure Number: 4.0	Scale: 1" = 60"
Drawn By: JVC / MCR	Date: 3/19/96
Project Number: 6287-2.1	

ACC Environmental Consultants
7977 Capwell Drive, Suite 100
Oakland, California 94621
(510) 638-8400 Fax: (510) 638-8404


UNION STREET
SIDEWALK
PERALTA STREET
EXISTING FENCE LINE
LANDSCAPED AREA
GRAB-A
GRAB-B
GRAB-C
GRAB-D
GRAB-E
GRAB-F
GRAB-G
GRAB-H
GRAB-I
GRAB-J
GRAB-K
GRAB-L
GRAB-M
GRAB-N
GRAB-O
GRAB-P
GRAB-Q
GRAB-R
GRAB-S
GRAB-T
ASPHALT SURFACE
EXISTING BUILDING
FORMER CLAWSON SCHOOL
32ND STREET SIDEWALK
PROGRESSIVE SENIOR CENTER
ASPHALT SURFACE
ASPHALT SURFACE
OUT BUILDING
LEGEND
AREA OVEREXCAVATED TO A DEPTH OF 12-INCHES BELOW GRADE APPROXIMATELY 125 CUBIC YARDS
AREA OVEREXCAVATED TO A DEPTH OF 30-INCHES BELOW GRADE APPROXIMATELY 35 CUBIC YARDS
GRAB-A
CONFIRMATION GRAB SAMPLE, COLLECTED AFTER OVEREXCAVATION
NORTH
0 25 50 100
SCALE IN FEET
EXCAVATION SAMPLING PLAN
FORMER CLAWSON SCHOOL
OAKLAND, CALIFORNIA
AQUA SCIENCE ENGINEERS, INC.
Figure 7

LOG OF TEST BORING MW-1

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/7/91
ELEVATION 97.71 feet



OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
-	0			DARK BROWN SILTY CLAY (CL) medium stiff, moist
			19	
40			35	MOTTLED RED-BROWN AND BROWN SANDY CLAY (CL) stiff, moist, coarse grained sand
	5			
			15	LIGHT BROWN SILTY CLAY (CL) medium stiff, moist, with fine grained sand
10				
	10 ▼			GROUNDWATER LEVEL 6/25/91
	*▼			GROUNDWATER LEVEL DURING DRILLING
5			19	RED-BROWN CLAYEY SAND (SC) medium dense, wet
	15			
15	20		10	GRAY CLAYEY SILT (ML) medium stiff, wet, with fine grained sand
	25			
	30			
	35			
	40			

*BASED UPON REFERENCE WITH ASSUMED ELEVATION, AS SHOWN ON PLATE 1.

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

Subsurface Consultants

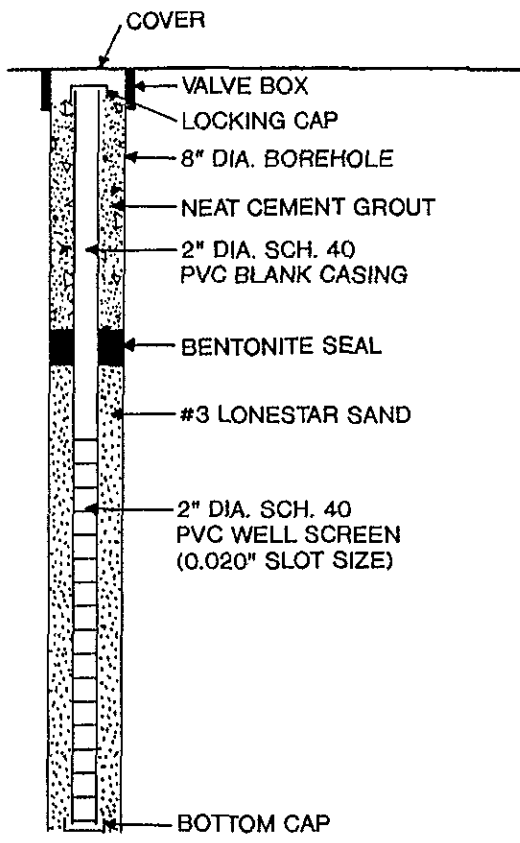
CLAWSON SCHOOL SITE - PHASE 2

JOB NUMBER	DATE	APPROVED
272.023	6/25/91	

PLATE 1

LOG OF TEST BORING MW-2

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/7/91
ELEVATION 97.93 feet



OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
	0			ASPHALTIC CONCRETE - 2" thick
35			10	DARK BROWN SILTY CLAY (CL) medium stiff, moist, with gravel
	5			
			25	MOTTLED LIGHT BROWN AND BROWN SANDY CLAY (CL) medium stiff, moist, with gravel
	10			GROUNDWATER LEVEL 6/25/91
15			11	(no sample recovered)
				GROUNDWATER LEVEL DURING DRILLING
94	15		13	RED-BROWN CLAYEY SAND (SC) medium dense, wet
	20			
60			10	LIGHT BROWN SANDY CLAY (CL) medium stiff, moist, medium grained sand
	25			
	30			
	35			
	40			

Subsurface Consultants

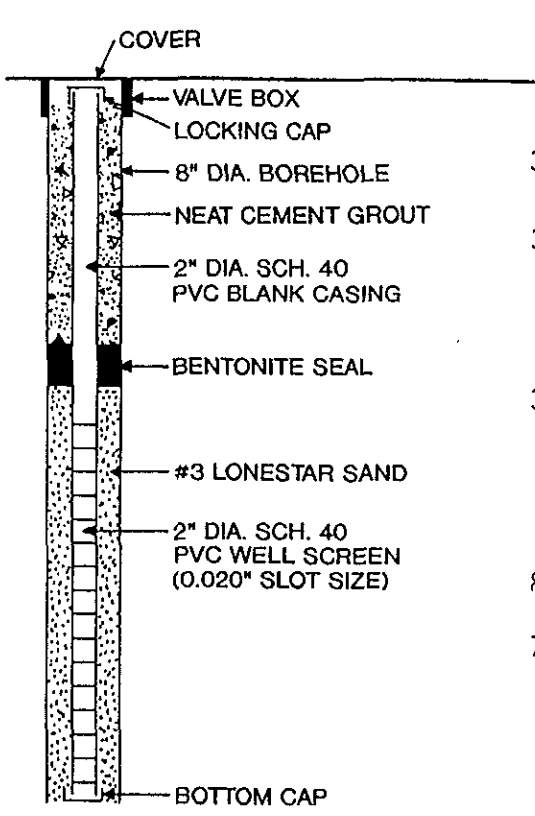
CLAWSON SCHOOL SITE - PHASE 2

JOB NUMBER 272.023 | DATE 6/25/91 | APPROVED

PLATE 2

LOG OF TEST BORING MW-3

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/7/91
ELEVATION 99.89 feet



OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
	0			ASPHALTIC CONCRETE - 3" thick
30			11	BLACK SILTY CLAY (CL) medium stiff, moist
30			13	gray below 4 feet
	5			
				LIGHT BROWN SILTY CLAY (CL) medium stiff, moist
35			15	
	10			GROUNDWATER LEVEL 6/25/91
80			11	(no sample recovered)
75	15		push	GROUNDWATER LEVEL DURING DRILLING MOTTLED GRAY-BROWN AND BROWN SILTY CLAY (CL) medium stiff, wet, with fine grained sand with small pockets of black oily substance and oil odor at 14 feet
30	20		30	
	25			
	30			
	35			
	40			

Subsurface Consultants

CLAWSON SCHOOL SITE - PHASE 2

JOB NUMBER 272.023 | DATE 6/25/91 | APPROVED

PLATE 3

Table 1.
Petroleum Hydrocarbons In Soil

Sample	Total Petroleum Hydrocarbons as Diesel (mg/kg)	Total Recoverable Hydrocarbons (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl-Benzene (ug/kg)	Total Xylenes (ug/kg)
1 @ 10.0'	110	--[1]	<5[2]	<5	<5	<5
1 @ 11.5'	110	500	<5	<5	<5	5.5
1 @ 14.5'	47	--	<5	6	<5	<5
1 @ 17.5'	<5	--	<5	<5	<5	<5
4 @ 8.0'	<5	--	<5	<5	<5	<5
4 @ 12.0'	240	960	<5	<5	<5	<5
4 @ 15.5	<5	--	<5	<5	<5	<5
5 @ 7.5'	<5	--	<5	<5	<5	<5
5 @ 13.0'	260	990	<5	<5	<5	5.5
5 @ 17.0'	80	--	<5	6	<5	<5
6 @ 6.0'	<5	--	<5	<5	<5	<5
6 @ 11.0'	130	280	<5	<5	<5	<5
6 @ 16.0'	<5	--	<5	<5	<5	<5
7 @ 10.0'	<5	--	<5	<5	<5	<5
8 @ 8.0'	<5	--	<5	<5	<5	<5
8 @ 13.0'	470	680	<5	6	<5	<5
9 @ 13.5'	<5	--	<5	<5	<5	<5
10@ 13.5'	<5	--	<5	<5	<5	<5
11@ 10.0'	<5	--	<5	<5	<5	<5
12@ 10.5'	<5	--	<5	<5	<5	<5
12@ 13.5'	<5	--	<5	5	<5	<5
12@ 16.5'	<5	--	<5	<5	<5	<5
13@ 10.5'	<5	--	<5	<5	<5	<5
13@ 14.0'	<5	--	<5	<5	<5	<5
14@ 3.5'	<5	--	<5	<5	<5	<5
14@ 7.5'	<5	--	<5	9	<5	<5
14@ 12.5'	<5	--	<5	<5	<5	<5
15@ 10.5'	<5	--	<5	<5	<5	<5
15@ 13.5'	<5	--	<5	8	<5	<5
16 @ 10.5'	<5	--	<5	<5	<5	<5
16 @ 14.5'	<5	--	<5	<5	<5	<5
17 @ 8.0'	<5	--	<5	16	<5	<5
17 @ 13.0'	<5	--	<5	10	<5	<5
18 @ 8.0'	<5	--	<5	18	<5	<5
18 @ 13.0'	31	--	<5	11	<5	<5
19 @ 8.0'	7	--	<5	<5	<5	<5
19 @ 13.0'	[illegible]	--	<5	50	<5	<5

1 -- = Test not requested
2 Less than reporting limit specified

Table 2
Contaminant Concentrations in Water

Sample	Total Petroleum Hydrocarbons as Diesel (mg/l)	Ethyl-Benzene (ug/l)	Total Toluene (ug/l)	Benzene (ug/l)	Xylenes (ug/l)	Methyl-Chloride (ug/l)	Other EPA 8010 Compounds (ug/l)
6	30	--	--	--	--	--	--
11	<5.0	--	--	--	--	--	--
MW-1	<0.2	<1.0	3.0	<1.0	<1.0	4.8	ND
MW-2	<0.2	<1.0	1.3	<1.0	<1.0	4.4	ND
MW-3	<0.2	<1.0	2.6	<1.0	<1.0	3.3	ND
Method Blanks	<0.2	<1.0	<1.0	<1.0	<1.0	7.7	ND

1 -- = Test not requested
2 Less then reporting limit specified
3 None detected, chemicals not present at concentrations above reporting limits

Table 3.
Lead Concentrations in Soil

Sample	Total Lead (mg/kg)	Soluble Lead (mg/l)
Tank Area		
6 @ 2.0'	22[2]	<0.10[1]
Fire Destroyed Building Area		
7 @ 1.5'	15[1]	<0.10
West Side of School Building		
11 @ 1.0'	260[1]	8.6
20 @ 0.5'	175	--
20 @ 3.5'	3.5	--
21 @ 1.5'	331	12.5
21 @ 3.0'	158	3.5
22 @ 1.0'	41.4	--
22 @ 2.5'	4.0	--
23 @ 0.5'	347	--
23 @ 3.5'	5.0	--
24 @ 3.0'	12.5	--
24 @ 4.5'	5.0	--
25 @ 1.0'	91.7	--
25 @ 4.0'	26.0	--
26 @ 0.5'	37.4	--
26 @ 2.0'	6.3	--
27 @ 1.5'	15.0	--
27 @ 4.5'	29.4	0.4
28 @ 2.5'	9.5	--
28 @ 4.0'	88.2	3.9
29 @ 0.5'	12.6	--
29 @ 2.0'	11.4	--

[1] Less than reporting limit specified
[2] Analysis performed on the sample after the maximum sample holding time had elapsed
[3] -- = Test not requested

Table 4

Summary of Chemical Analyses - Soil (UST Closure)
Oakland Unified School District - Clawson School
Oakland, California

Sample ID	Date Sampled	Approx. Sample Depth (ft)	EPA Test Method: BETX 5030/8020 Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	TPH-D 8015M Kerosene Range (mg/kg)	Diesel Range (mg/kg)	Motor Oil Range (mg/kg)	7420 Soluble Lead (mg/l)
Stockpiles										
SP-1	04/08/93	2	<0.005	0.014*	<0.005	0.066	**	570+	720+	NA
SP-2	04/08/93	2	<0.005	<0.005	<0.005	<0.005	**	510+	490+	NA
SP-3	04/08/93	2	<0.005	0.007	<0.005	0.014*	**	4,200+	4,100+	NA
Fill Lines										
FL-1	04/08/93	5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-2	04/14/93	4	<0.005	<0.005	<0.005	<0.005	**	19+	<30	NA
FL-3	04/14/93	4.5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-4	04/14/93	4	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-5	04/14/93	4	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-6	04/14/93	4	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
FL-7	04/14/93	3.5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
Product Lines										
PL-1	04/08/93	5	<0.005	<0.005	<0.005	<0.005	<1	<1	<30	NA
Excavation Base										
TB-W	04/08/93	12	<0.005	<0.005	<0.005	<0.005	**	64+	170+	NA
TB-E	04/08/93	12	<0.005	<0.005	<0.005	<0.005	**	430+	360+	NA
Test Pits										
TP-1-12.0	06/23/93	12	NA	NA	NA	NA	**	48	70	NA
TP-2-11.5	06/23/93	11.5	NA	NA	NA	NA	**	240	<300	NA
TP-3-12.0	06/23/93	12	NA	NA	NA	NA	**	200	<300	NA
W. Side of Site										
W-COMP-1	04/16/93	0.5	NA	NA	NA	NA	NA	NA	NA	19.0
Laboratory Reporting Limit			0.005	0.005	0.005	0.005	1	1	30	0.06

Notes:
TPH-D - Total petroleum hydrocarbons quantified as diesel fuel.
mg/kg - Milligrams per kilogram is equivalent to parts per million (ppm).
mg/l - Milligrams per liter is equivalent to parts per million (ppm).
* - Presence of this compound confirmed by second column; however confirmation concentration not reproducible.
** - Quantified as diesel due to overlap of hydrocarbon ranges.
+ - Pattern does not match standard.
NA - Not analyzed.

and plot plan are included as Appendix 1.

Groundwater samples were collected from three onsite monitoring wells (MW-1, MW-2, and MW-3) on March 13, 1996. Work at the site included measuring depth to water, subjectively evaluating groundwater in the wells, and purging and sampling the wells for laboratory analysis. Information regarding well elevations and groundwater level measurements is summarized in Table 1.

TABLE 5 - GROUNDWATER DEPTH INFORMATION

Well No.	Date Sampled	Well Elevation* (above MSL)	Depth to Groundwater	Groundwater Elevation
MW-1	03/13/96	17.52	6.16	11.36
MW-2	03/13/96	17.76	7.21	10.55
MW-3	03/13/96	19.72	7.32	12.40

Notes: All measurements in feet
MSL = Mean sea level
*Well elevation measured to top of casing

After water level measurements were collected, each onsite well was purged by hand using a designated disposable Teflon® bailer. Groundwater pH, temperature, and electrical conductivity were monitored during well purging. Each well was considered to be purged when these

TABLE 6 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Well No.	Date Sampled	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	Total Lead (mg/L)
MW-1	03/13/96	<54	<0.5	<0.5	<0.5	<0.5	<0.005
MW-2	03/13/96	<50	<0.5	<0.5	<0.5	<0.5	<0.005
MW-3	03/13/96	50*	<0.5	<0.5	<0.5	<0.5	<0.005

Notes: µg/L = micrograms per liter (approximately equivalent to parts per billion)
* Unidentified hydrocarbons within diesel range, quantified as 850 ppb, using diesel standard

4.1.2 Groundwater Gradient

The groundwater gradient was calculated using the onsite monitoring wells. The location of the wells and groundwater flow direction are shown on Figure 3. Groundwater elevations were calculated from data collected from the wells on March 13, 1996.

TABLE ~~ONE~~ 7

Total Lead Concentrations in Soil

Soil Borings Drilled January 30, 1998

All Results in Parts Per Million

SAMPLE IDENTIFICATION	TOTAL LEAD	TOTAL LEAD ADJUSTED FOR 18% MOISTURE CONTENT
BH-A @ 0.5'	120	142
BH-A @ 1.0'	46	54
BH-A @2.0'	22	26
BH-B @ 0.5'	280	330
BH-B @ 1.0'	160	189
BH-B @ 2.0'	< 5.0	< 5.0
BH-C @ 0.5'	180	212
BH-C @ 1.0'	31	37
BH-D @ 0.5'	18	21
BH-D @ 1.0'	130	153
BH-D @ 2.0'	< 5.0	< 5.0
BH-E @ 0.5'	520	614
BH-E @ 1.0'	65	77
BH-F @ 0.5'	87	103
BH-F @ 1.0'	14	17
BH-F @ 2.0'	62	73
BH-G @ 0.5'	190	224
BH-G @ 1.0'	35	41
BH-H @ 0.5'	500	590
BH-H @ 1.0'	180	212
BH-H @ 2.0'	< 5.0	< 5.0
BH-I @ 0.5'	130	153
BH-I @ 1.0'	66	78
BH-I @ 2.0'	< 5.0	< 5.0
BH-J @ 0.5'	200	236
BH-J @ 1.0'	5.8	7
BH-K @ 0.5'	140	165
BH-K @ 1.0'	240	283
BH-L @ 0.5'	50	59
BH-L @ 1.0'	< 5.0	< 5.0
BH-M @ 0.5'	48	57
BH-M @ 1.0'	64	76
BH-N @ 0.5'	52	61

7

TABLE ~~ONE~~ (continued)

Total Lead Concentrations In Soil

Soil Borings Drilled January 30, 1998

All Results in Parts Per Million

SAMPLE IDENTIFICATION	TOTAL LEAD	TOTAL LEAD ADJUSTED FOR 18% MOISTURE CONTENT
BH-N @ 1.0'	< 5.0	< 5.0
BH-O @ 0.5'	120	142
BH-O @ 1.0'	< 5.0	< 5.0
BH-P @ 0.5'	99	117
BH-P @ 1.0'	5.6	7
BH-Q @ 0.5'	190	224
BH-Q @ 1.0'	97	114
BH-R @ 0.5'	120	142
BH-R @ 1.0'	22	26
BH-S @ 0.5'	170	201
BH-S @ 1.0'	28	33
BH-T @ 0.5'	24	28
BH-T @ 1.0'	< 5.0	< 5.0
BH-U @ 0.5'	250	295
BH-U @ 1.0'	74	87
NOTE:		
Bolded items depict soil samples and depths with lead concentrations exceeding the target cleanup value of 320 parts per million.		

TABLE ~~FOUR~~ 8

Total Lead Concentrations In Soil

Confirmation Soil Samples

All Results in Parts Per Million

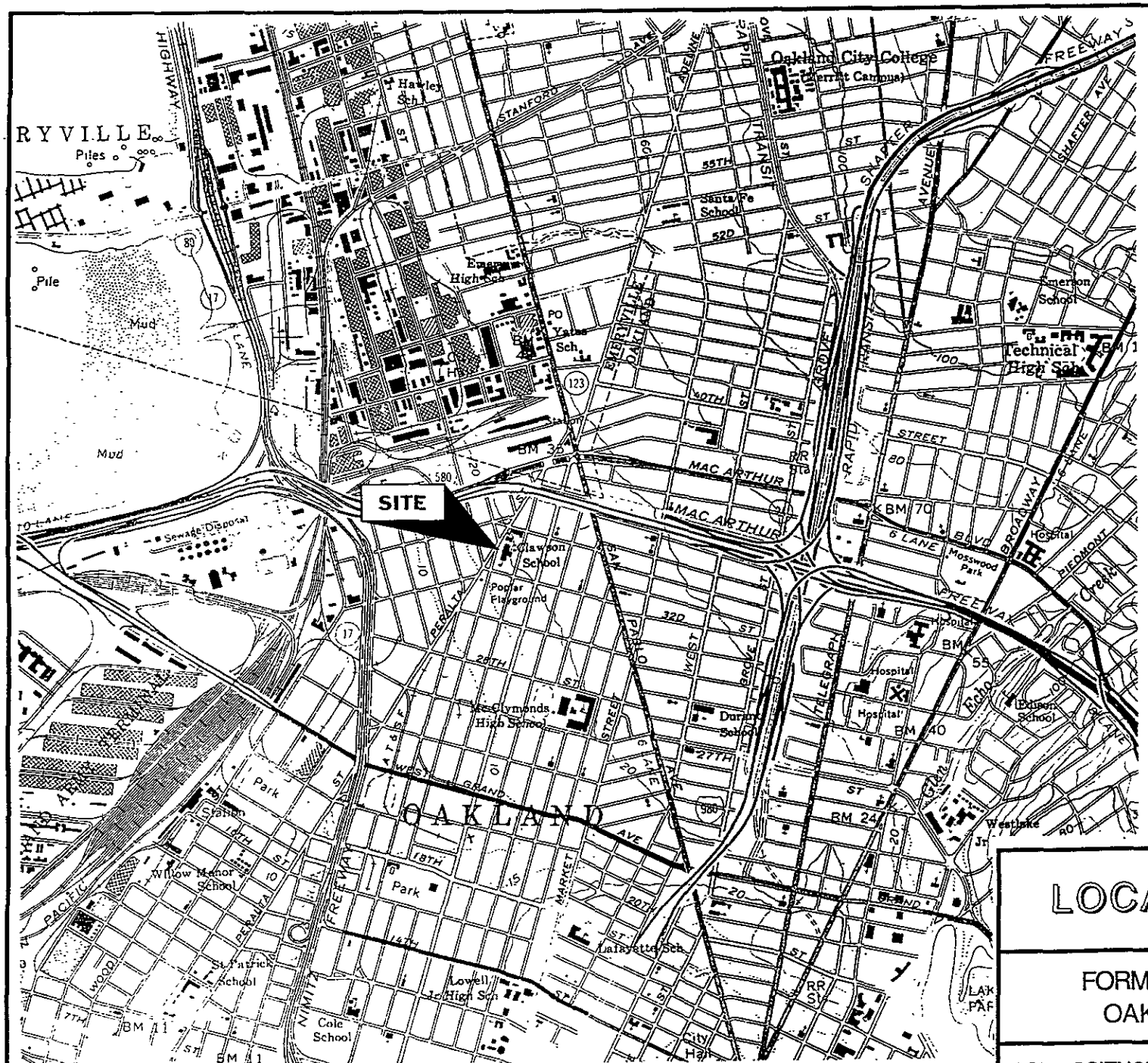
SAMPLE IDENTIFICATION	DATE SAMPLED	TOTAL LEAD
GRAB-A	MAY-20-98	10
GRAB-B	MAY-20-98	< 5.0
GRAB-C	MAY-20-98	11
GRAB-D	MAY-20-98	7.9
GRAB-E	MAY-20-98	210
GRAB-F	MAY-20-98	91
GRAB-G	MAY-20-98	45
GRAB-H	MAY-20-98	150
GRAB-I	MAY-20-98	22
GRAB-J	MAY-20-98	27
GRAB-K	MAY-20-98	32
GRAB-L	MAY-20-98	**380**
GRAB-M	MAY-20-98	240
GRAB-N	MAY-20-98	6.6
GRAB-O	MAY-20-98	48
GRAB-P	MAY-20-98	< 5.0
GRAB-Q	MAY-20-98	**340**
GRAB-R	MAY-20-98	8.7
GRAB-S	MAY-20-98	27
GRAB-T	MAY-20-98	< 5.0
GRAB-L-24"	JUNE-5-98	< 5.0
GRAB-Q-24"	JUNE-5-98	240

Bolded items depict soil samples with total lead concentrations exceeding the target cleanup value of 320 ppm, but were subsequently resampled after deeper overexcavation (see June 5 results).

Table 9.
Groundwater Level Measurements

Well	Top of Casing Elevation (feet)[1]	Date	Groundwater Depth (ft)	Groundwater Elevation (ft.)
MW-1	97.71	06/11/91	10.06	87.65
		06/17/91	10.21	87.50
		06/25/91	10.20	87.51
		07/22/91	11.46	86.25
		08/27/91	10.74	86.97
MW-2	97.93	06/11/91	11.12	86.81
		06/17/91	11.25	86.68
		06/25/91	11.20	86.73
		07/22/91	12.45	85.48
		08/27/91	11.76	86.17
MW-3	99.89	06/11/91	13.27	86.62
		06/17/91	11.37	88.52
		06/25/91	11.18	88.71
		07/22/91	12.39	87.50
		08/27/91	11.64	88.25

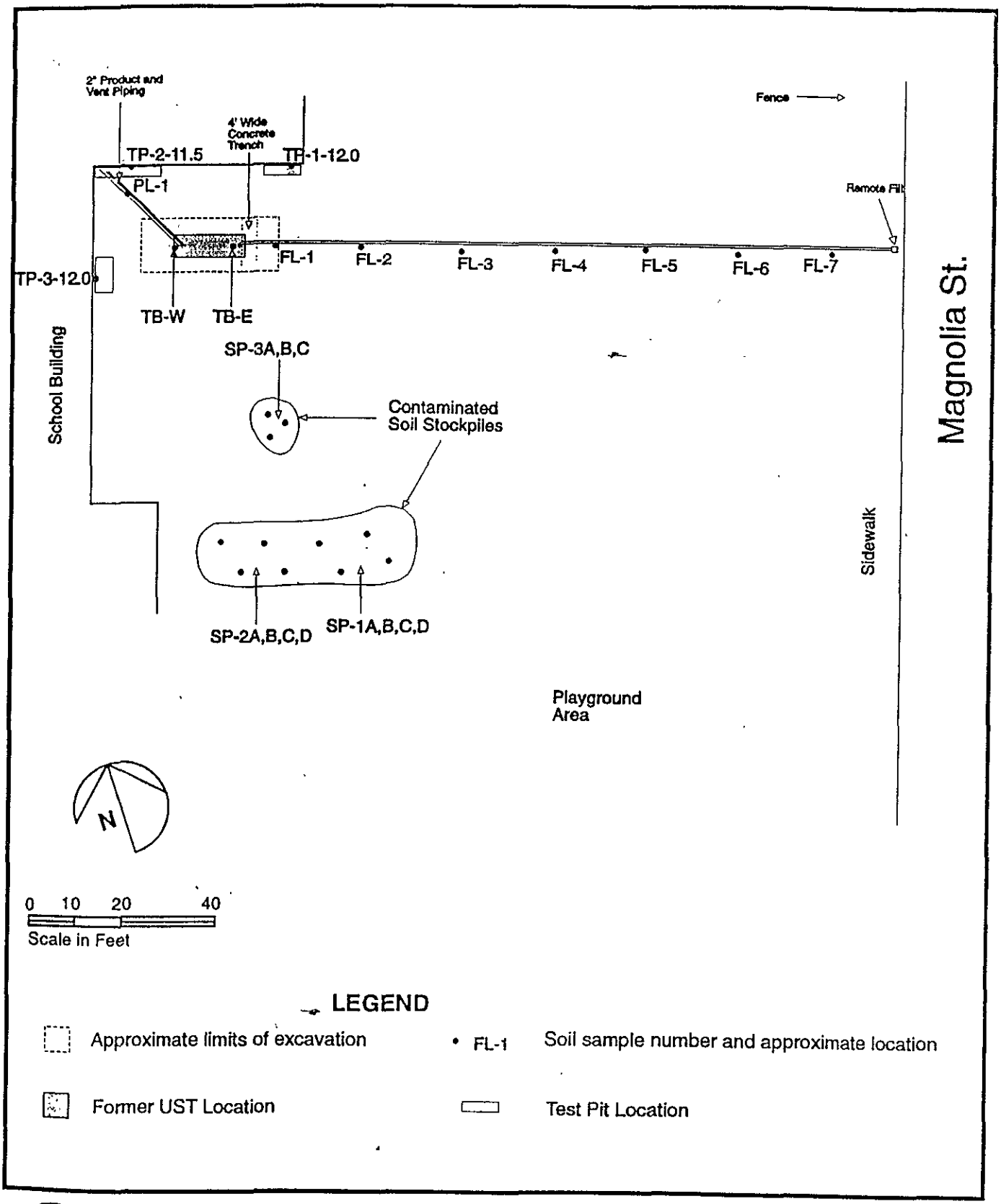
[1] Elevation Reference: Bottom of stairs at west side of Clawson School Building (see Plate 1) is assumed to be at elevation 100.00 feet.



LOCATION MAP

FORMER CLAWSON SCHOOL
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 1



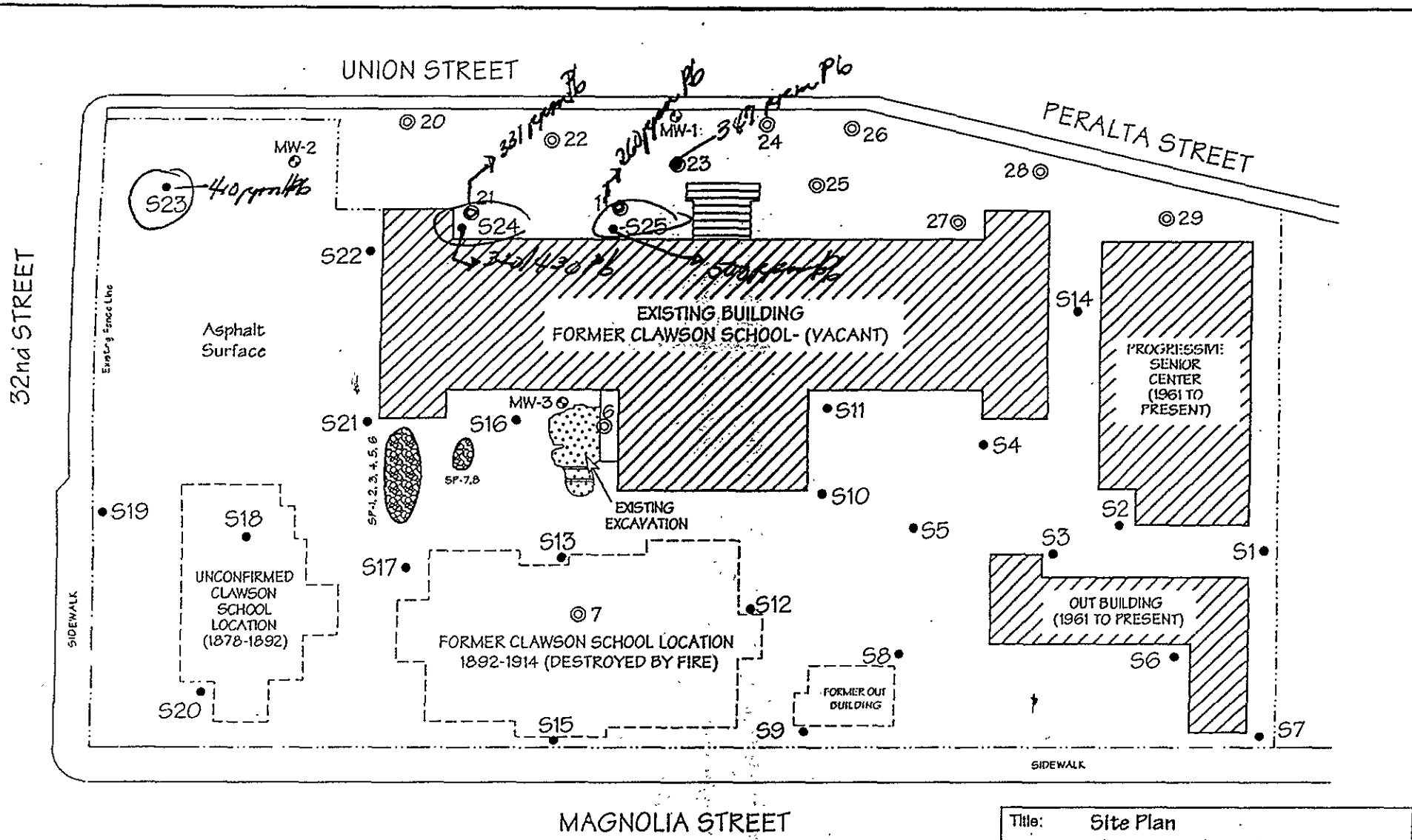
Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Site Plan

Oakland Unified School District/Clawson School
Oakland, California

FIGURE 2

JOB NUMBER	DRAWN	APPROVED	DATE	REVISED	DATE
15,692.001.04	JBA		3 May 93		



LEGEND

MW-2 ⊙ - Existing Groundwater Monitoring Well

S15 • - Soil Boring Location (March 14, 1996)

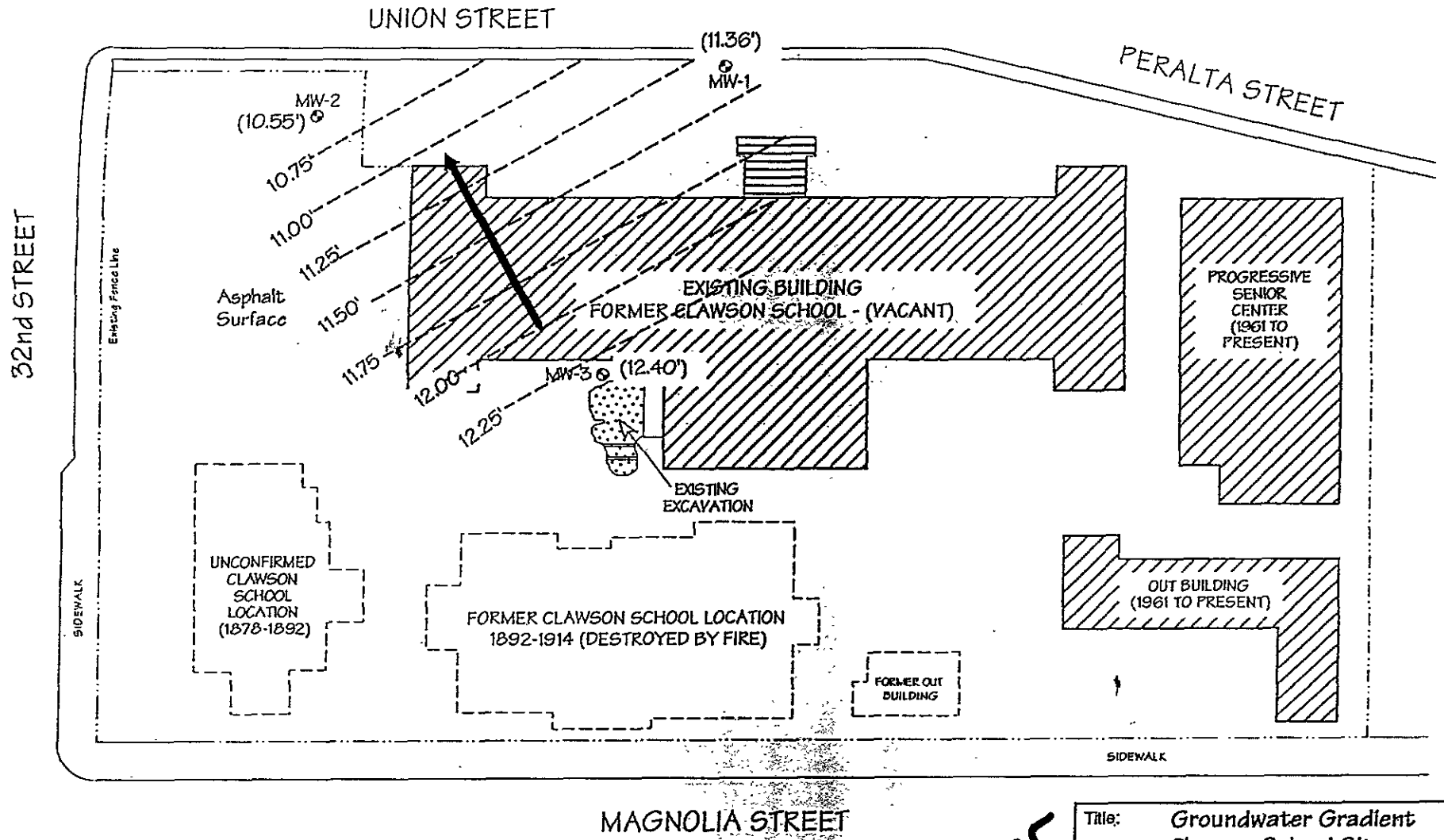
20 ◎ - Previous Soil Boring Location to investigate lead

- Existing Soil Stockpile

FIGURE 4

Title:	Site Plan Clawson School Site Oakland, California
Figure Number: 2.0	Scale: 1" = 60"
Drawn By: JVC / MCR	Date: 3/19/96
Project Number: 6287-2.1	

ACC Environmental Consultants
7977 Capwell Drive, Suite 100
Oakland, California 94621
(510) 638-8400 Fax: (510) 638-8404



FIGURES

LEGEND

MW-2 ⊙ - Existing Groundwater Monitoring Well

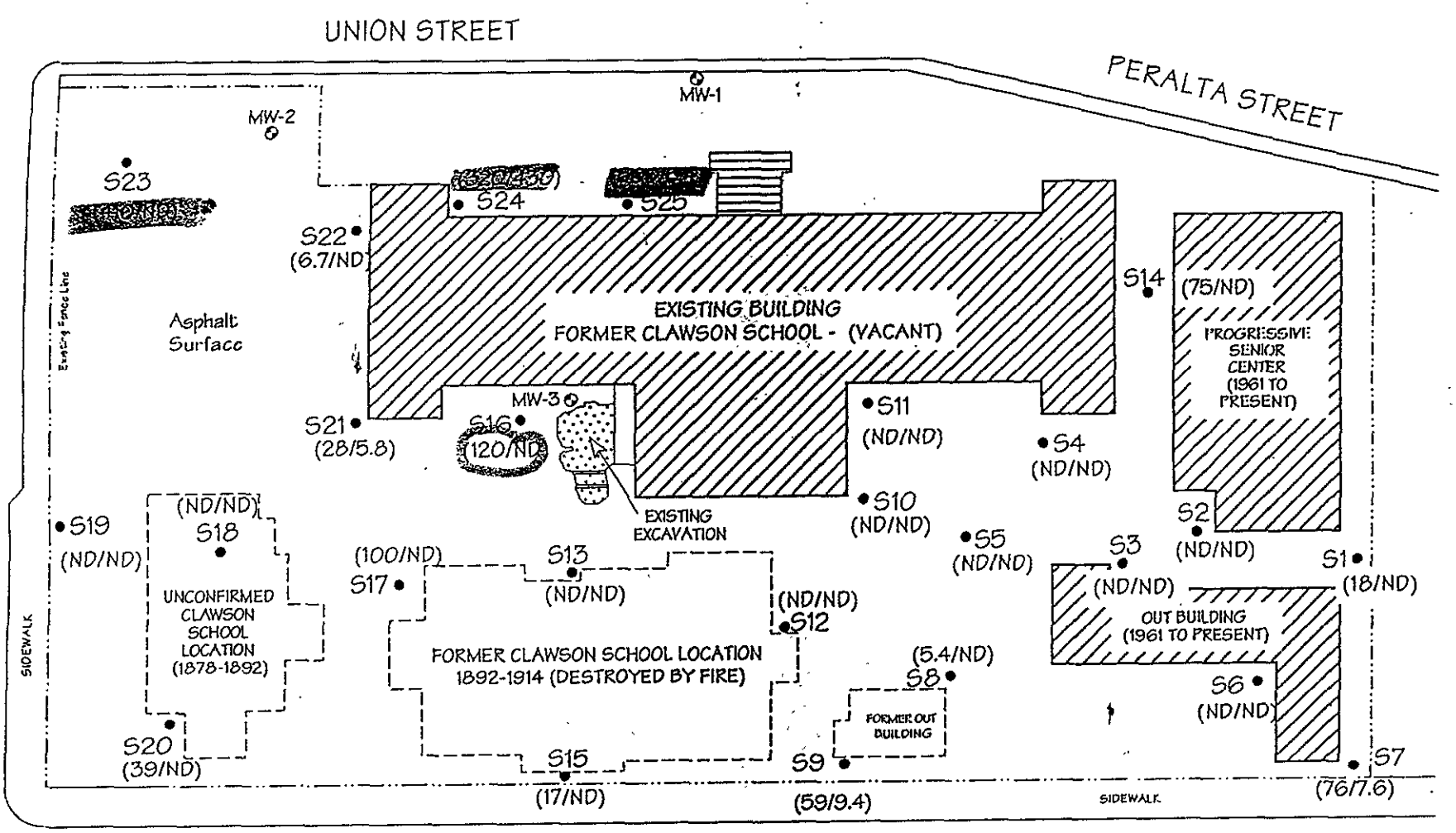
(#) - Groundwater elevation as calculated from levels measured on March 13, 1996

- Groundwater Flow Direction

Title:	Groundwater Gradient Clawson School Site Oakland, California		
Figure Number:	3.0	Scale:	1" = 60"
Drawn By:	JVC / MCR	Date:	3/19/96
Project Number:	6287-2.1		

ACC Environmental Consultants
7977 Capwell Drive, Suite 100
Oakland, California 94621
(510) 638-8400 Fax: (510) 638-8404

W N S E



LEGEND

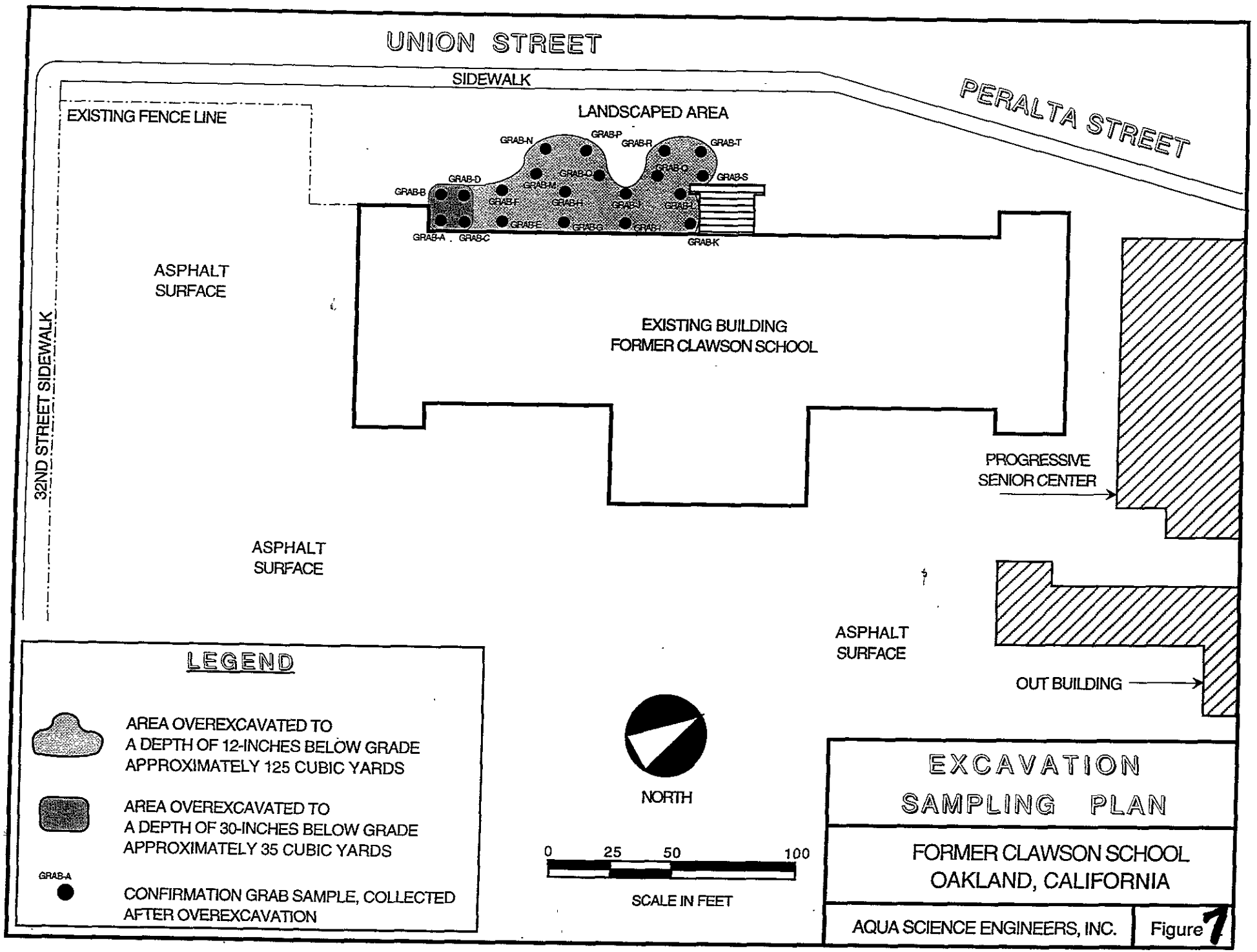
- MW-2 ⊙ - Existing Groundwater Monitoring Well
- S15 • - Soil Boring Location (March 14, 1996)
- (#/#) - Total lead concentration from samples collected at a (shallow/deeper) depth below ground surface (in parts per million)
- ND - Not detected above reporting limit of 5.0 mg/kg

FIGURE 6

Title: Lead Results, Clawson School Site, Oakland, California	
Figure Number: 4.0	Scale: 1" = 60"
Drawn By: JVC / MCR	Date: 3/19/96
Project Number: 6287-2.1	

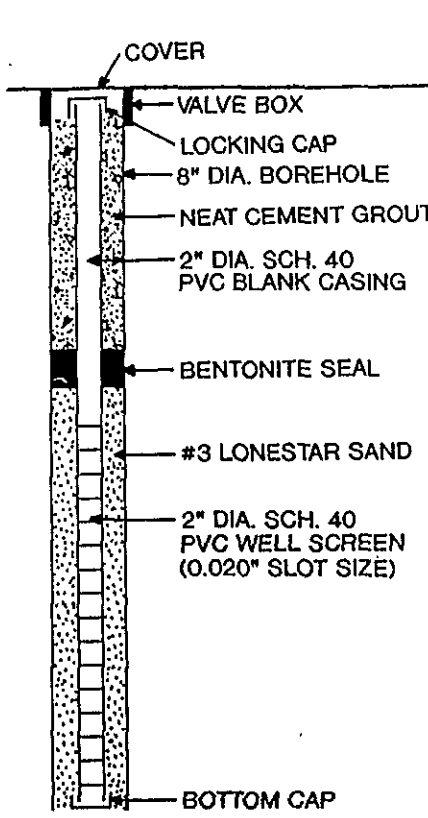
ACC Environmental Consultants
7977 Capwell Drive, Suite 100
Oakland, California 94621
(510) 638-8400 Fax: (510) 638-8404

N W E S


UNION STREET
SIDEWALK
PERALTA STREET
EXISTING FENCE LINE
LANDSCAPED AREA
GRAB-N
GRAB-P
GRAB-R
GRAB-T
GRAB-D
GRAB-M
GRAB-C
GRAB-O
GRAB-S
GRAB-B
GRAB-F
GRAB-H
GRAB-J
GRAB-L
GRAB-A
GRAB-C
GRAB-E
GRAB-G
GRAB-I
GRAB-K
ASPHALT SURFACE
32ND STREET SIDEWALK
EXISTING BUILDING
FORMER CLAWSON SCHOOL
PROGRESSIVE SENIOR CENTER
ASPHALT SURFACE
ASPHALT SURFACE
OUT BUILDING
LEGEND
AREA OVEREXCAVATED TO A DEPTH OF 12-INCHES BELOW GRADE APPROXIMATELY 125 CUBIC YARDS
AREA OVEREXCAVATED TO A DEPTH OF 30-INCHES BELOW GRADE APPROXIMATELY 35 CUBIC YARDS
GRAB-A
CONFIRMATION GRAB SAMPLE, COLLECTED AFTER OVEREXCAVATION
NORTH
0 25 50 100
SCALE IN FEET
EXCAVATION SAMPLING PLAN
FORMER CLAWSON SCHOOL
OAKLAND, CALIFORNIA
AQUA SCIENCE ENGINEERS, INC.
Figure 1

LOG OF TEST BORING MW-1

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/7/91
ELEVATION 97.71 feet



OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
-	0			
			19	DARK BROWN SILTY CLAY (CL) medium stiff, moist
40			35	MOTTLED RED-BROWN AND BROWN SANDY CLAY (CL) stiff, moist, coarse grained sand
	5			
			15	LIGHT BROWN SILTY CLAY (CL) medium stiff, moist, with fine grained sand
10				
	10			GROUNDWATER LEVEL 6/25/91
				GROUNDWATER LEVEL DURING DRILLING
5			19	RED-BROWN CLAYEY SAND (SC) medium dense, wet
	15			
15	20		10	GRAY CLAYEY SILT (ML) medium stiff, wet, with fine grained sand
	25			
	30			
	35			
	40			

*BASED UPON REFERENCE WITH ASSUMED ELEVATION, AS SHOWN ON PLATE 1.

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

Subsurface Consultants

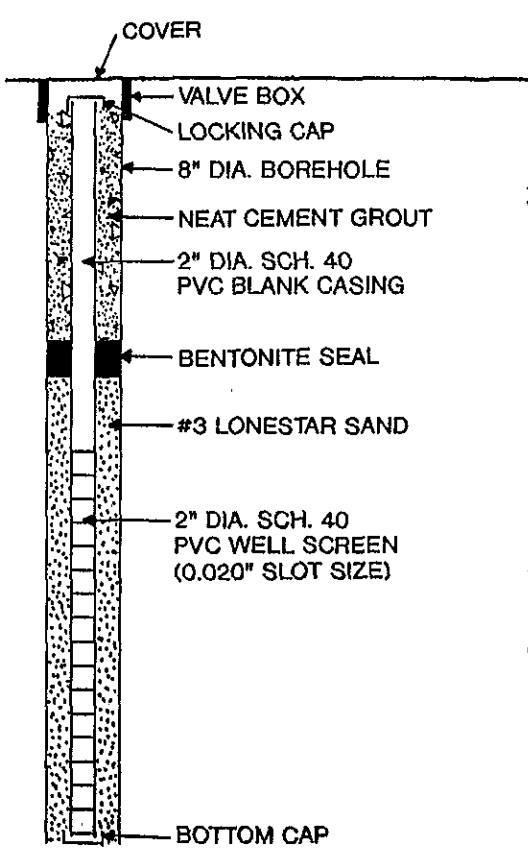
CLAWSON SCHOOL SITE - PHASE 2

JOB NUMBER	DATE	APPROVED
272.023	6/25/91	

PLATE 1

LOG OF TEST BORING MW-2

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/7/91
ELEVATION 97.93 feet



OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
	0			ASPHALTIC CONCRETE - 2" thick
35			10	DARK BROWN SILTY CLAY (CL) medium stiff, moist, with gravel
	5			
			25	MOTTLED LIGHT BROWN AND BROWN SANDY CLAY (CL) medium stiff, moist, with gravel
	10			
				GROUNDWATER LEVEL 6/25/91
15			11	(no sample recovered)
				GROUNDWATER LEVEL DURING DRILLING
94	15		13	RED-BROWN CLAYEY SAND (SC) medium dense, wet
	20			
60			10	LIGHT BROWN SANDY CLAY (CL) medium stiff, moist, medium grained sand
	25			
	30			
	35			
	40			

Subsurface Consultants

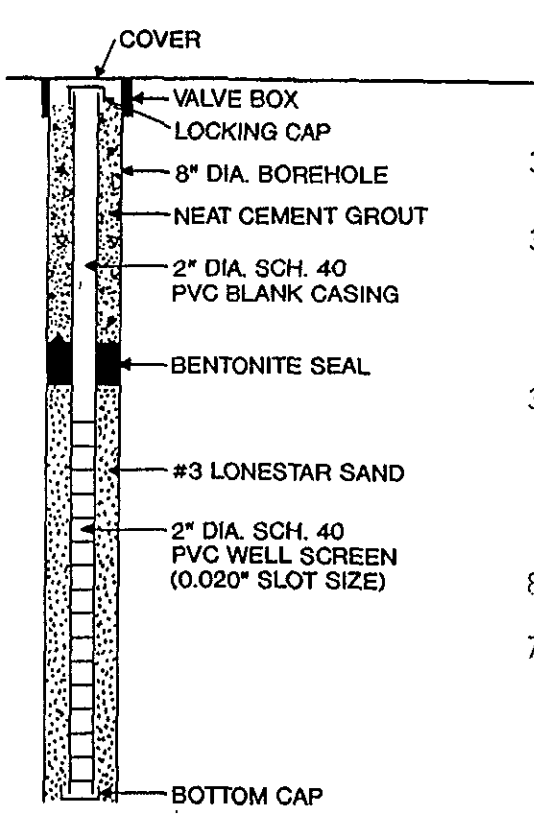
CLAWSON SCHOOL SITE - PHASE 2

JOB NUMBER 272.023 | DATE 6/25/91 | APPROVED

PLATE 2

LOG OF TEST BORING MW-3

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/7/91
ELEVATION 99.89 feet



OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
	0			ASPHALTIC CONCRETE - 3" thick
30			11	BLACK SILTY CLAY (CL) medium stiff, moist
30	5		13	gray below 4 feet
				LIGHT BROWN SILTY CLAY (CL) medium stiff, moist
35			15	
	10			GROUNDWATER LEVEL 6/25/91
80			11	(no sample recovered)
75	15		push	GROUNDWATER LEVEL DURING DRILLING MOTTLED GRAY-BROWN AND BROWN SILTY CLAY (CL) medium stiff, wet, with fine grained sand with small pockets of black oily substance and oil odor at 14 feet
30	20		30	
	25			
	30			
	35			
	40			

Subsurface Consultants

CLAWSON SCHOOL SITE - PHASE 2

JOB NUMBER 272.023 | DATE 6/25/91 | APPROVED

PLATE 3