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

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

October 3, 1997

StID# 2690

Mr. Scott Hilyard
Military Dept., Acct., -#43,
P.O. Box 269101,
Sacramento, CA 95826-9101

Re: Fuel Leak Site Case Closure for the California National Guard Facility, at 16501 Ashland Ave., San Lorenzo 94580

Dear Mr. Hilyard:

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 Protection Division 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:

- 600 parts per billion(ppb) TPH(g) remains in the ground water in the area of the former underground tank. BTEX levels are 9., 1.3, 74, and 22.(ppb) respectively.

- If a change in the land use is proposed, then an evaluation of risk from exposure to contaminated soil/groundwater must be made.

If you have any questions, please contact this office at (510) 567-6737.

Sincerely

Brian P. Oliva, REHS, REA,
Hazardous Materials Specialist

enclosure:
1. Case Closure Letter, Case Closure Summary

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

August 11, 1997

STID #2690

REMEDIAL ACTION COMPLETION CERTIFICATION

Mr. Scott Hilyard
Military Dept., Acct.-#43,
P.O. Box 269101,
Sacramento, CA 95826-9101

Subject: California National Guard Facility, 16501 Ashland Ave., San Lorenzo, CA 94580 - 2,000 gallon gasoline underground storage tank

Dear Mr. Hilyard,

This letter confirms the completion of a site investigation and remedial action for the underground storage tank 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 upon the available 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 storage 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 Brian P. Oliva, at (510) 567-6737 if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung
Director of Environmental Health Services

enclosure

c: Chief, Hazardous Materials Division - files
Brian P. Oliva, ACDEH
Kevin Graves, RWQCB
Lori Casias, SWRCB
Cheryl Gordon, State Cleanup Fund
Jim Ferdinand, Alameda County Fire Depatment

01-1095

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

Department of Environmental Health

MAY 01 1997

I. AGENCY INFORMATION

Agency name: **Alameda County-HazMat**
Date:City/State/Zip: **Alameda, CA 94502**
Responsible staff person: **Amy Leech**
Date: **February 26, 1997**
Address: **1131 Harbor Bay Pkwy**
Phone: **(510) 567-6700**
Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **National Guard Organization Maintenance Shop No. 35**
Site facility address: **16501 Ashland Ave., San Lorenzo CA 94580**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **2690**
URF filing date: **12/13/89** SWEEPS No: **N/A**

Responsible Parties:	Address:	Phone Numbers:
Attn: Scott Hilyard Military Dept., Acct. #42	PO Box 269101 Sacramento CA 95826-9101	
c: Homer Lin Office of State Architect Special Projects	400 "P" St., 5th Floor Sacramento CA 95814	916-445-6939

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	2,000	gasoline	removed	04/22/93

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Corrosion holes in product piping.**

Site characterization complete? **Yes**

Monitoring Wells installed? **Yes** Number: **3**

Proper screened interval? **Yes**

Highest GW depth below ground surface: **4.5 ft** Lowest depth: **9.4 ft (shallow aquifer)**

Flow direction: **Predominantly to the north but has varied northeast to southwest. (The gradient of the deeper aquifer is unknown. Investigations assumed that sampling of "downgradient" wells screened in the shallow aquifer would address downgradient conditions of the deeper aquifer.)**

Most sensitive current use: **Commercial**

Are drinking water wells affected? **No** Aquifer name: **N/A**

Is surface water affected? **No** Nearest affected SW name:**N/A**

Off-site beneficial use impacts (addresses/locations): **none**

Report(s) on file? **YES** Where is report(s) filed?
Alameda County, 1131 Harbor Bay Pkwy, Alameda, CA 94502

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (cont'd)

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	1-2,000 gallon UST	Erickson, 255 Parr Blvd., Richmond CA	04/22/93
Rinsate	400 gallons	Gibson Oil, 475 Sea Port Blvd., Redwood City CA	04/22/93

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[3]	After[4]
TPH (Gasoline)	73	NA	110,000	4,100
TPH (Diesel)	17	"	56	ND
Benzene	0.438	"	7,210	18
Toluene	3.4	"	13,500	4.2
Ethylbenzene	1.7	"	2,680	110
Xylene	10.4	"	12,000	27
MTBE	NT	NT	NT	ND

NT=not tested

1"Before" soil sample collected from the gasoline UST pit after the tank was removed in 04/93; TPH-D result collected from boring B-3 at 10 ft. bgs.
2 The removal of contaminated soil was not completed at this site.
3"Before" water collected as a "grab" sample from the gasoline UST pit in April 1993, except for TPH-G result was collected from a "grab" groundwater sample from boring B-3 and TPH-D result was collected from boring B-9 in July 1993.
4"After" water represents the max. conc. detected during four quarters of sampling monitoring wells MW1-MW3 from 1993 to 1996.

Comments (Depth of Remediation, etc.): See "Additional Comments" section.

IV. CLOSURE

Does corrective action protect public health for current land use? **Yes**
Site management requirements: **If a change in land use is proposed or excavation of soils is planned at this site, then an evaluation of risk from exposure to contaminated soil and groundwater must be made.**

Should corrective action be reviewed if land use changes? **YES**

Monitoring wells Decommissioned: **Pending case closure approval.**
Number Decommissioned: **0** Number Retained: **3 (MW1-MW3)**

List enforcement actions taken: **n/a**
List enforcement actions rescinded: **n/a**

V. ADDITIONAL COMMENTS

The National Guard Organization Maintenance Shop No. 35 located at 16501 Ashland Avenue in San Lorenzo, California has been a military staging post since the Korean War era. One 2,000-gallon gasoline underground storage tank (UST) of single-walled steel construction was installed at this site around 1951 and was used intermittently until it was removed in 1993. (See attachment 1 for site location and layout.)

In November and December 1989, the gas tank piping system was upgraded to double walled-fiberglass piping

V. ADDITIONAL COMMENTS (cont'd)

and a new diesel UST system was installed. Large corrosion holes were discovered in the gasoline product piping during pipe removal activities. Soil contamination was reportedly observed beneath the piping. County field notes indicate that the contractor was asked to excavate contaminated soil along the pipe trench prior to installing the new pipes. Two soil samples were reportedly collected from stockpile soil and the pipe trench where the corrosion holes were found. (See attachment 2 for sample locations and results.) It is not known if these samples were collected prior to or subsequent to overexcavation of the pipe trench.

In April 1993, the 2,000-gallon gasoline UST was removed. Both the tank and the double-walled piping appeared in good condition. Groundwater was present in the UST pit at 7 feet below ground surface (bgs). Soil was stained and free-product was noted on the groundwater. Sidewall soil samples were collected at both ends of the UST. Up to 73 parts per million (ppm) Total Petroleum Hydrocarbons as Gasoline (TPH-G) and 0.438, 1.7, 3.4, 10.4 ppm benzene, ethylbenzene, toluene, and xylene (BETX), respectively, were identified in sample SL-3 collected at the east end of the pit. Up to 51,000 parts per billion (ppb) TPH-G and 7,210, 2,680, 13,500, 12,000 ppb BETX, respectively, were detected in the "grab" groundwater sample collected from the UST pit. Note that no samples were collected along the pipe trench where contamination was observed in 1989, and no overexcavation of contaminated soils was performed. (See attachment 3 for sample locations and results.)

In July 1993, eleven (11) soil borings (B1-B3, B5, B7, B9, B13-B17) were drilled at the site to assess the extent of soil and groundwater contamination. Forty-six soil samples were collected and analyzed. Only five samples contained detectable concentrations of petroleum hydrocarbons. Up to 450 ppm TPH-G and 2.4 ppm benzene were detected in the 10 ft. sample of boring B-3; this sample was within the capillary fringe. A minimum of one "grab" groundwater sample was collected from each of the boring locations. A free-product sheen was reportedly observed in a "grab" groundwater sample collected from Boring B-13, and up to 110,000 ppb TPH-G and 3,400 ppb benzene were detected in groundwater collected from boring B-3; lead concentrations were below threshold values. (See attachment 4 for sample locations and results.)

Three of the borings B-1, B-14, and B-13 were converted into monitoring wells MW1, MW-2, and MW-3, respectively. (See attachment 4 for boring locations and results and attachment 5 for boring logs and well construction details.)

In order to further define the extent of groundwater contamination at this site, five additional borings (GP-1 through GP-5) were installed in April 1995 in the vicinity of the former UST system and in a grass covered field at San Lorenzo High School located west of the former UST pit. Groundwater sampled from boring GP-5 was collected from a deeper aquifer located between 22 and 25 ft. bgs to determine if any impact of petroleum hydrocarbons had occurred. Groundwater samples collected from these borings were all non-detect for all constituents sought. (See attachment 6 for sample locations and results.)

In November 1996, two additional "grab" groundwater samples GS-1 and GS-2 were collected at the site to assess groundwater conditions north of monitoring well MW-3. TPH-G, TPH-D, and BTEX were non-detect in both samples. (See attachment 7 for sample locations and results.)

Groundwater has been sampled and analyzed from monitoring wells MW-1 through MW-3 four times from July 1993 through August 1996 (7/93, 5/95, 8/95, 8/96). Depth to groundwater has varied from 4.5 ft. bgs to 9.4 ft. bgs. Groundwater gradient has predominantly been toward the north but directions ranging from northeast to southwest have been recorded at this site. Gradient has ranged from 0.006 ft/ft to 0.016 ft/ft.

Up to 4,100 ppb TPH-G and 18, 4.2, 27, and 110 BTEX, respectively, were detected in monitoring well

V. ADDITIONAL COMMENTS (cont'd)

MW-3 between 7/93 and 8/96. TPH-G, TPH-D, and BTEX were not detected in MW-1 and MW-2. MTBE was not detected in any of the monitoring wells. (See attachment 8 for historical groundwater data.)

No further investigations are recommended since this site appears to meet the San Francisco RWQCB's definition of a low risk groundwater case:

1. The source of contamination was abated by removal of the UST system. Although there are no written reports that overexcavation of contaminated soil occurred at this site, soil samples collected from borings within the vicinity of the UST system were ND for TPH-G and BTEX, except for a sample collected at 10 ft. bgs within the capillary fringe from boring B-3.

2. The extent of impact to soil and groundwater has been evaluated at this site by analysis of multiple soil and groundwater samples collected within and in the vicinity of the former UST system.

3. Analytical groundwater data collected 4 times over 3 years has shown that the dissolved hydrocarbon plume is not significantly migrating and concentrations have shown significant attenuation since 1993.

4. The residual contamination left in soil and groundwater at this site is not expected to significantly impact water wells, deeper drinking water aquifers, surface water, or other sensitive receptors. Shallow groundwater at this site is not used for municipal or domestic purposes. A deeper water-bearing (sandy) layer has been encountered between 22 and 25 feet bgs. "Grab" groundwater samples have been collected from this deeper water-bearing layer in three different locations at the site. TPH-G, TPH-D, and BTEX were non-detect in all samples. (See attachment 9 for sample locations and results.) A well survey completed in 1996 reported there are 27 wells within a 1/2-mile radius of the site. The closest of these wells to the tank area are irrigation wells located approximately 400 feet to the north and 300 feet to the southeast. All wells appear to be screened below the first shallow water bearing layer. (See attachment 10 for well locations.)

5. No significant risk to human health was found for outdoor inhalation for commercial exposure scenarios to benzene from soil or groundwater contamination using the ASTM E1739-95 Tier 1 RBSL Look-up Table for a $1x10^{-5}$ excess cancer risk. There are currently no buildings or structures over the soil and groundwater contaminant plume.

6. It does not appear that sensitive ecological receptors are currently impacted by the petroleum hydrocarbon release from this site; therefore, an environmental risk analysis was not performed.

A risk management strategy should be developed to:

- If appropriate, mitigate any potential negative impacts posed by the residual contamination remaining on site (e.g., install vapor barriers beneath new building construction).

- Develop a strategy to address any risk posed to the construction or utility worker exposure during earth moving activities in the vicinity of the former tank pit.

- Take precautions to avoid making vertical or lateral conduits that may cause cross contamination between the shallow and deeper aquifers.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Name: Amy Leech
Signature: A Leech
Title: Hazardous Materials Specialist
Date: 3/28/94

Reviewed by
Name: Juliet Shin
Signature: Juliet Shin
Title: Senior Hazardous Materials Specialist
Date: 3/11/97

Name: Thomas Peacock
Signature: Thomas Peacock
Title: Supervising, Hazardous Materials Spec.
Date: 3-27-97

VII. RWQCB NOTIFICATION

Date Submitted to RB:
RWQCB Staff Name: Kevin Graves, P.E.
Title: Assoc. Water Resources Control Engineer

RB Response: Approved
Signature: K Graves
Date: 4/21/97

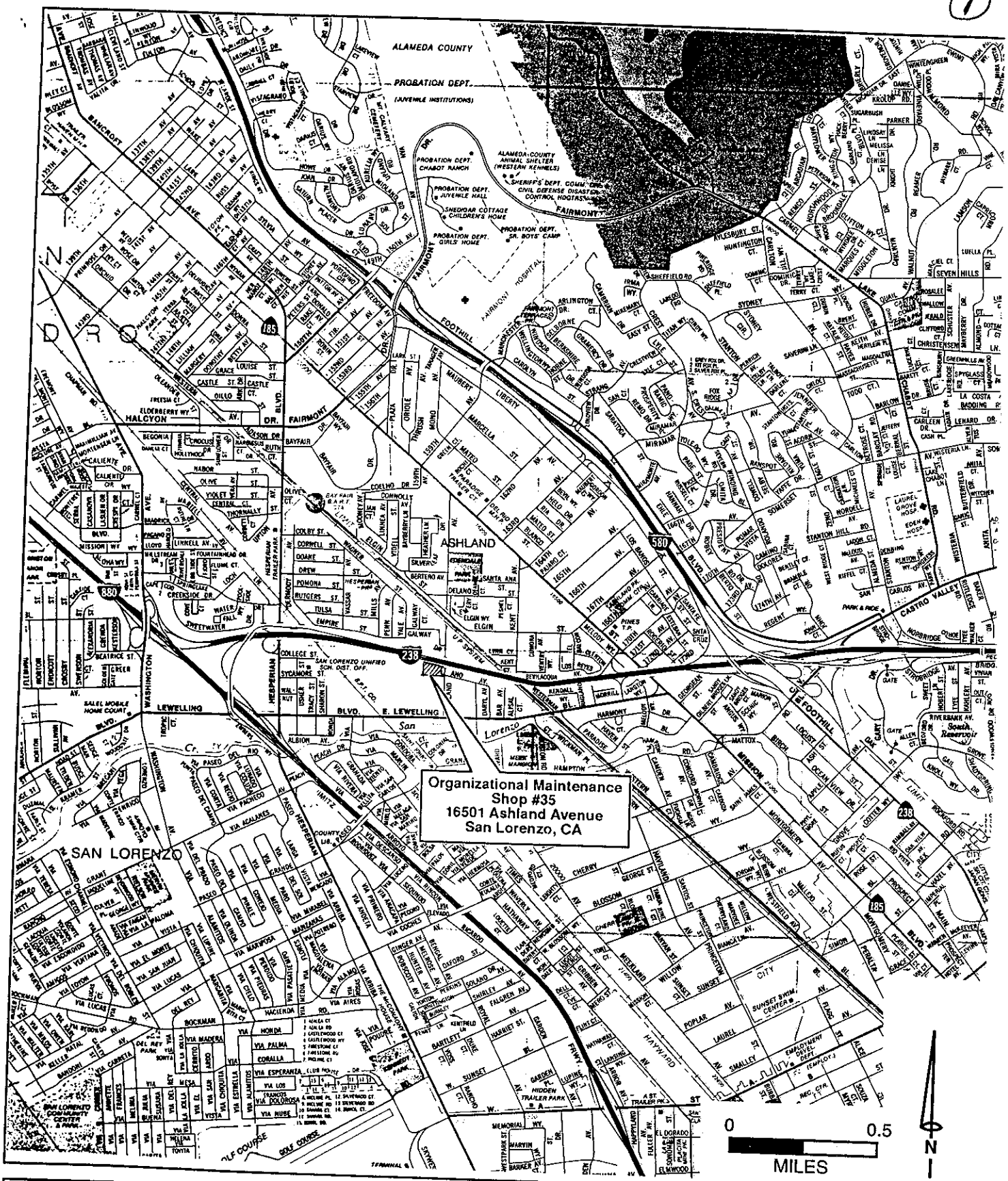
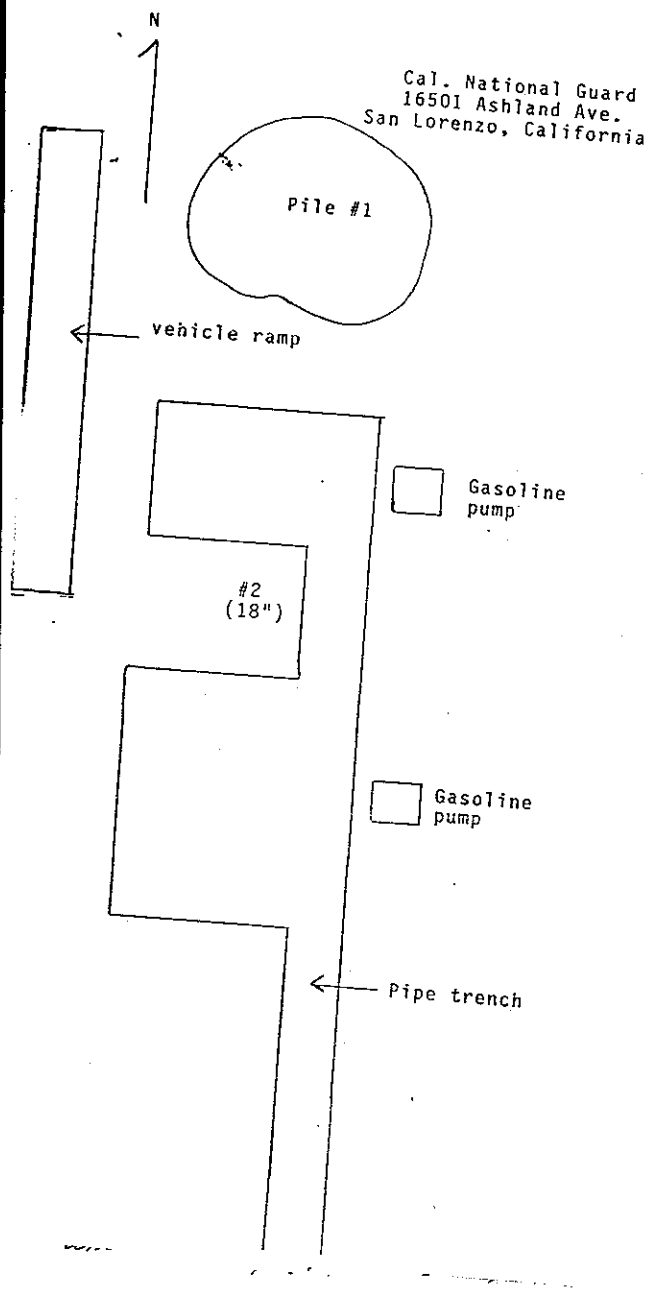


Figure 1B **Site Location Map**

Trace Analysis Laboratory, Inc.



Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
(415) 783-690

DATE: 12/12/89

LOG NO.: 8125

DATE SAMPLED: 12/4/89

DATE RECEIVED: 12/4/89

CUSTOMER: R.S. Eagan and Company

REQUESTER: Bob Eagan

PROJECT: Cal. National Guard, 16501 Ashland Avenue, San Lorenzo, CA

		Sample Type: Soil			
		Stockpile No. 1		Excavation piping No. 2	
Constituent	Units	Concentration	Detection Limit	Concentration	Detection Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	mg/kg	250	30	0.9	0.6
Modified EPA Method 8020:					
Benzene	mg/kg	1.6	0.8	< 0.05	0.05
Toluene	mg/kg	12	0.6	< 0.05	0.05
Xylenes	mg/kg	42	2	< 0.2	0.2
Ethylbenzene	mg/kg	8.9	0.8	0.058	0.05

Louis W. DuPuis
Quality Assurance/Quality Control Manager

LWD:jon

2

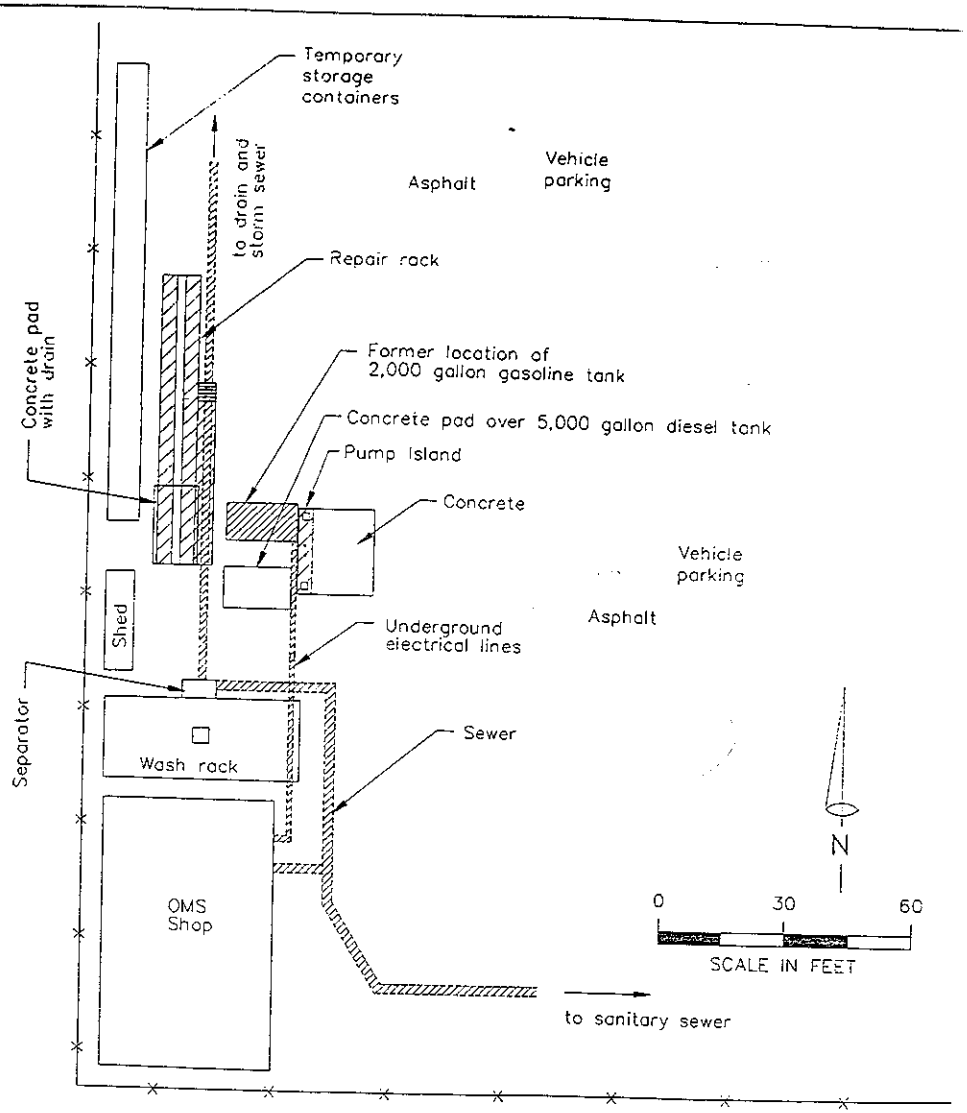


Figure 2 Site Map

PROJECT NO.9410-01 DRAWN BY EH DATE 6/3/93 FILE NO. SITEPLAN

93

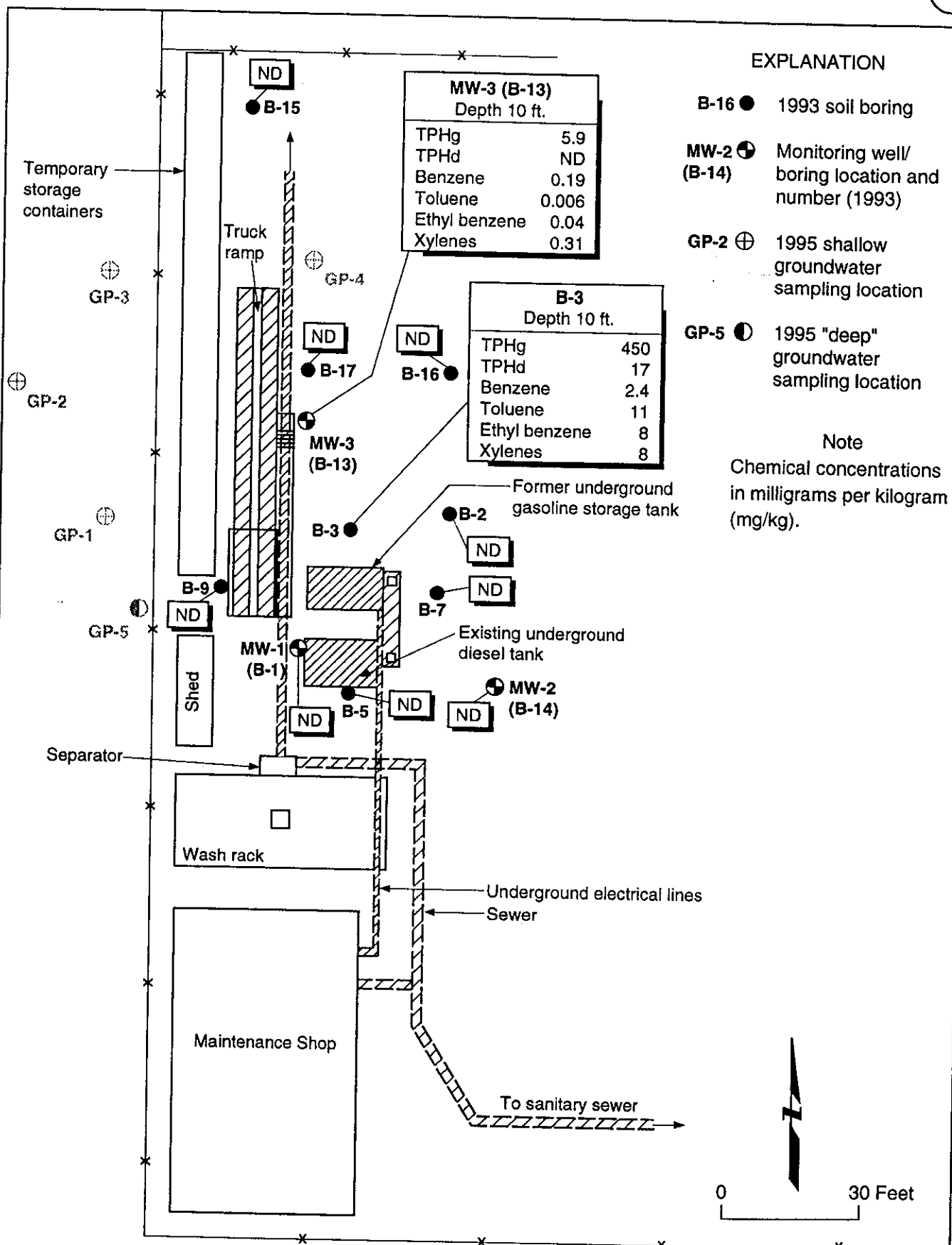
Table 1
Analytical Results for Ground Water and Soil Samples Collected April 22, 1992 from the Tank Removal Excavation at OMS #35
16501 Ashland Avenue, San Lorenzo, CA

Sample No.	Sample type and location	Depth (ft)	TPH-g (ppm)[1]	Benzene (ppb)[2]	Ethyl benzene (ppb)[2]	Toluene (ppb)[2]	Xylenes (ppb)[2]
SL-1	stockpiled soil	not applicable	297	450	5,790	6,420	35,800
SL-2	ground water from the excavation	~7	51.4	7,210	2,680	13,500	12,000
SL-3	soil, E sidewall	~5	73	438	1,700	3,410	10,400
SL-4	soil, W sidewall	~6.5	ND<1.0	ND<5	ND<5	ND<5	ND<15
SL-5	soil, W sidewall	between 6.5 and 7.5	ND<1.0	ND<5	ND<5	ND<5	23

(1) ppm = parts per million = mg/l for water, mg/kg for soil
(2) ppb = parts per billion = µg/l for water, µg/kg for soil

Lab Analytical Reports not included w/this report.

(2)



Reference: Tetra Tech, Inc., 1993

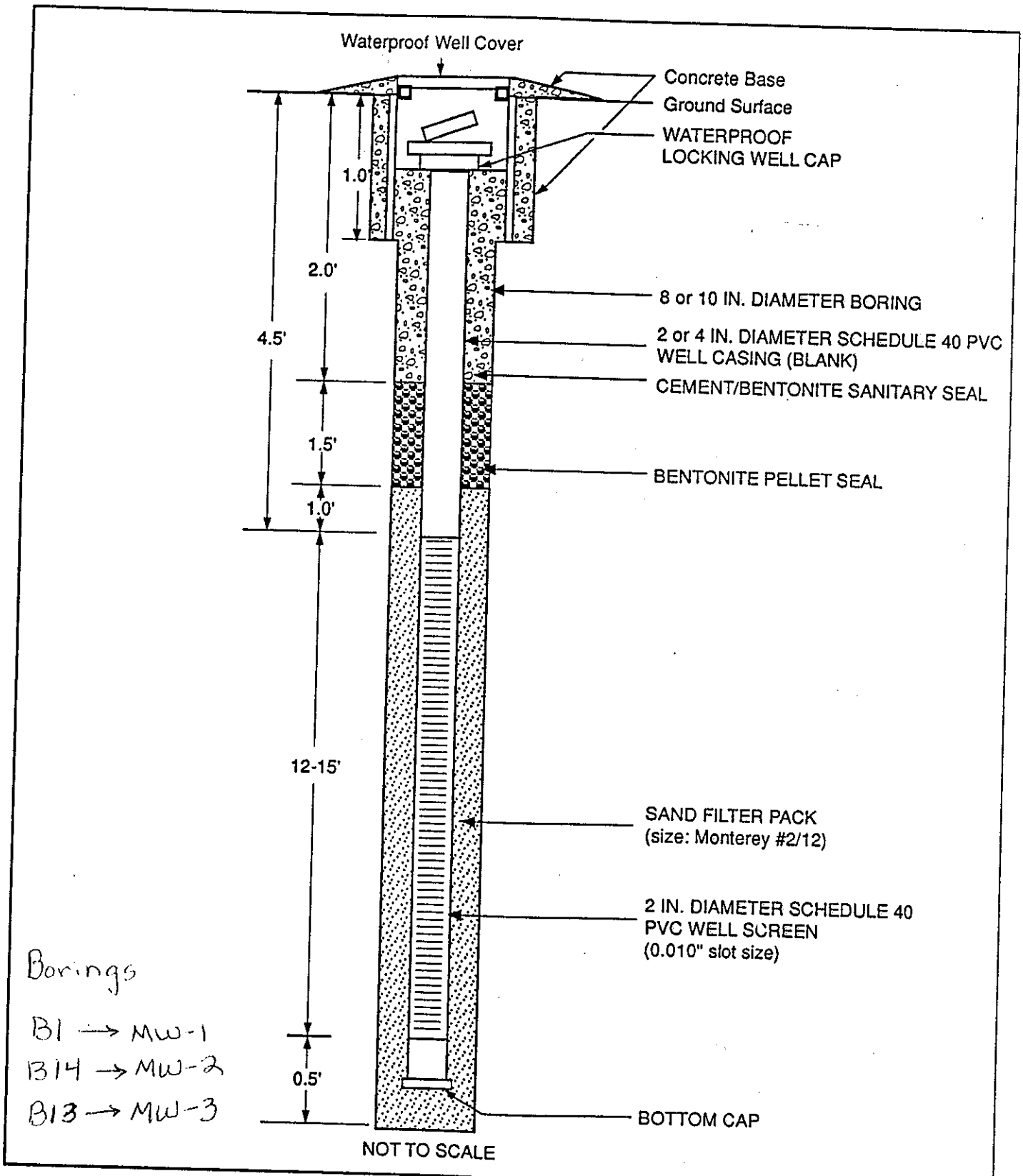
GEOMATRIX

MAXIMUM CONCENTRATIONS DETECTED IN SOIL
National Guard Organizational Maintenance Shop #35
16501 Ashland Avenue
San Lorenzo, California

Figure 3

Project No. 2868.03

2868.03.003



Borings

B1 → MW-1
B14 → MW-2
B13 → MW-3

Figure 3 **Monitoring Well Construction Diagram**

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: B-1/MW-1
Sheet 1 of 2

Project Name and Location: San Lorenzo, OMS #35
TC Number: 9410-02
Elevation: 35.69'
Date and Time Started: 7/7/93 @ 8:30
Date and Time Completed: 7/7/93 @ 10:00
Completion Depth: 20'
Number of Samples: 4
Drive: 4
1-liter: 1
VOA: 6 VOAS
Other: 1 - 200 ml
Boring Diameter & Drilling Method: 8" HOLLOW STEM AUGER
Water Level: First (date/time): 15' 7/7/93 @ 10:02
Second (date/time): 10.83 (7/7/93/1125)
Sampler: SPLIT SPOON
Hammer Wt.: 140
Drop: 30"
Boring Location: 126' NORTH, 39' EAST.
Drilling Co: Great Sierra Exploration
Driller: Phillip Reise
Geologist: K. Bishop

Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
0	HAND				0-4" ASPHALT								
1	AUGERING TO 2½'				PUT GRAVEL. PUT GRAVEL.								
2					DARK BROWN, DAMP DENSE, SILTY CLAY (CL)		CL		20	80			
3	CONTINUOUS CORE		4	9	DARK BROWN, DAMP DENSE CLAY. AS ABOVE				20	80			
			4	7					20	80			
4			6	11					20	60			
	KB B1-4.5		4	9	DARK BROWN DAMP-MOIST CLAY.								
5	B1-5.5		6	6	DARK BROWN DAMP-MOIST CLAY,		CL					0	
	B1-5		6	10	HARD, NO ODOR		CL					0.0	0900.
6	CC			3	DARK BROWN, MOIST DENSE CLAY				10	10	80	0.0	0900.
	CC			6	NO ODOR				10	20	80		
7	CC			11	AS ABOVE, DAMP				10	10	80		
	CC			5	AS ABOVE				10	10	80		
8	CC			14	AS ABOVE				10	10	80		
	CC			16	DARK BROWN, CLAY, DAMP NO ODOR				10	10	80		
9				4					10	10	80		
				3	DK BROWN CLAY, MOIST, HARD, NO								
10	B1-9.5		6"	5	ODOR		(CL)		20	80			
	B1-10		6"	6	AS ABOVE				20	80	0.3	0915	
11				6					20	80	0.2	0915	
				9									
12				11									
				5	BROWN BLACK, CLAY, DAMP, HARD								
13				7	NO ODOR, WHITE CALCAREOUS SPECKS		(CL)		20	80			
				9	AS ABOVE		CL		20	80			
14									20	80			
				5	BROWN BLACK CLAY, DAMP, HARD								
15	B1-14.5		6"	6			CL						
	B1-15		6"	11	GREY, BROWN CLAY DAMP, HARD.							0.4	0933
				5	BROWN, ~~SANDY~~ CLAY, MOIST.							0.3	0933
16				7	BROWN, ~~SANDY~~ CLAY, MOIST, HARD, NO ODOR.		CL	20		60	~~20~~		

MW-1

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: B1
Sheet 2 of 2

Project Name and Location: San Lorenzo, OMS #35
TC Number: 9410-02

Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
15													
16													
17				14	BROWN SANDY CLAY HARD,								
				6	WET NO ODOR,		CL		30		70		
18				9	AS ABOVE				30		70		
				11	AS LIGHT BROWN/OLIVE SILTY CLAY								
19				14	HARD & MOIST, NO ODOR		CL		10	30	60		
				14	OLIVE BROWN CLAYEY SILT, NO				10	30	60		
20	B1-19.5			29	ODOR, DAMP HARD.		ML		10	70	80		
	B1-20			22	AS ABOVE.		ML			40	60	0.3	0950
21							ML			40	60	0.4	0950.
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: B14/MW2
Sheet 1 of 2

Project Name and Location: SAN LORENZO
TC Number: 9410
Elevation:
Date and Time Started: 7/8/93 1515
Date and Time Completed: 7/8/93 @ 1620
Completion Depth: 20.5'
Number of Samples:
Drive: 3
1-liter: 8 1
VOA: 7
Other:
Boring Diameter & Drilling Method: 8" HOLLOW STEM.
Water Level: First (date/time): 11.5' (7/8/93 1595)
Second (date/time):
Sampler: SPLIT SPOON
Hammer Wt.: 140
Drop: 6C
Boring Location: 18' NORTH, 74' EAST OF FENCE LINE
Drilling Co.: GREAT SOUTHWEST EXPLORATION
Driller: P. REESE
Geologist: K. BISHOP

Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
0					NIC.								
1					RIPROCK.								
2					DK BROWN SILTY CLAY MOSTLY NAND NO ODOR, SOFT.								CUTTINGS
3							CL						
4													
5													
6													
7													
8													
9													
10		V	V	10	DK BROWN SILTY CLAY, DAMP, FIRM NO ODOR		CL						
	B14-9.5			11	MED. BROWN SAND						ND	1540	
11	B14-10.			15	BROWN SILTY CLAY, DAMP		SP				0.0	1540	
					STIFF, NO ODOR.		CL						
12					HIT H_2O TOOK H_2O SAMPLES							H_2O	
13													
14													
		V	6	13	DK BROWN OLIVE SILTY CLAY, V. STIFF, DAMP NO ODOR		CL				ND	1555	
15	B14-14.5		6	17	SAME AS ABOVE								
	B14-15.0		0	20									
16													

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: B14
Sheet 2 of 2

Project Name and Location: SAN LORENZO, CMS #35
TC Number: 9410-02

Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
15													
16													
17													
18													
19													
		V	14		~~DK~~ BROWN BLACK SILTY CLAY V. STIFF. NO ODOR.								
20	B14-20.5 FI.5		19				CL					6	1600
	B14-20.0		21		CLAYEY SILT, OLIVE, WET V. HARD NO ODOR.								1602
21							ML				0.0		
22					T.D. @ 20.5'.								
23					INSTALLED 2" WELL. @ 15' SCREEN - 0.10 SLOT 5' BLANK SCREEN								
24					SAND PACK UPTO 4' BGS								
25					BENTONITE PELLETS TO 2.5 BGS								
26					SEALED WITH CEMENT GROUT								
27					ENCLOSED WELL BOX + LOCKING CAP.								
28													
29													
30													
31													
2													
3													

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: B13 / MW3
Sheet 1 of 2

Project Name and Location: SAN LORENZO, CNL #35
TC Number: 9410-02
Elevation:
Date and Time Started: 7/6/93 0853
Date and Time Completed: 7/6/93 1500
Completion Depth: 17'
Number of Samples: Drive: 2 1-liter: 1 VOA: 7 Other:
Boring Diameter & Drilling Method: 10" HOLLOW STEM AUGER
Water Level: First (date/time): 10.51 7/6/93 0920 Second (date/time):
Sampler: SPLIT SPOON
Hammer Wt.: 140 Drop: 60"
Boring Location: SEE NORTH OF TANK PIT.
Drilling Co.: GREAT SOUTHERN EXPLORATION
Driller: P. REESE
Geologist: K. BISHOP.

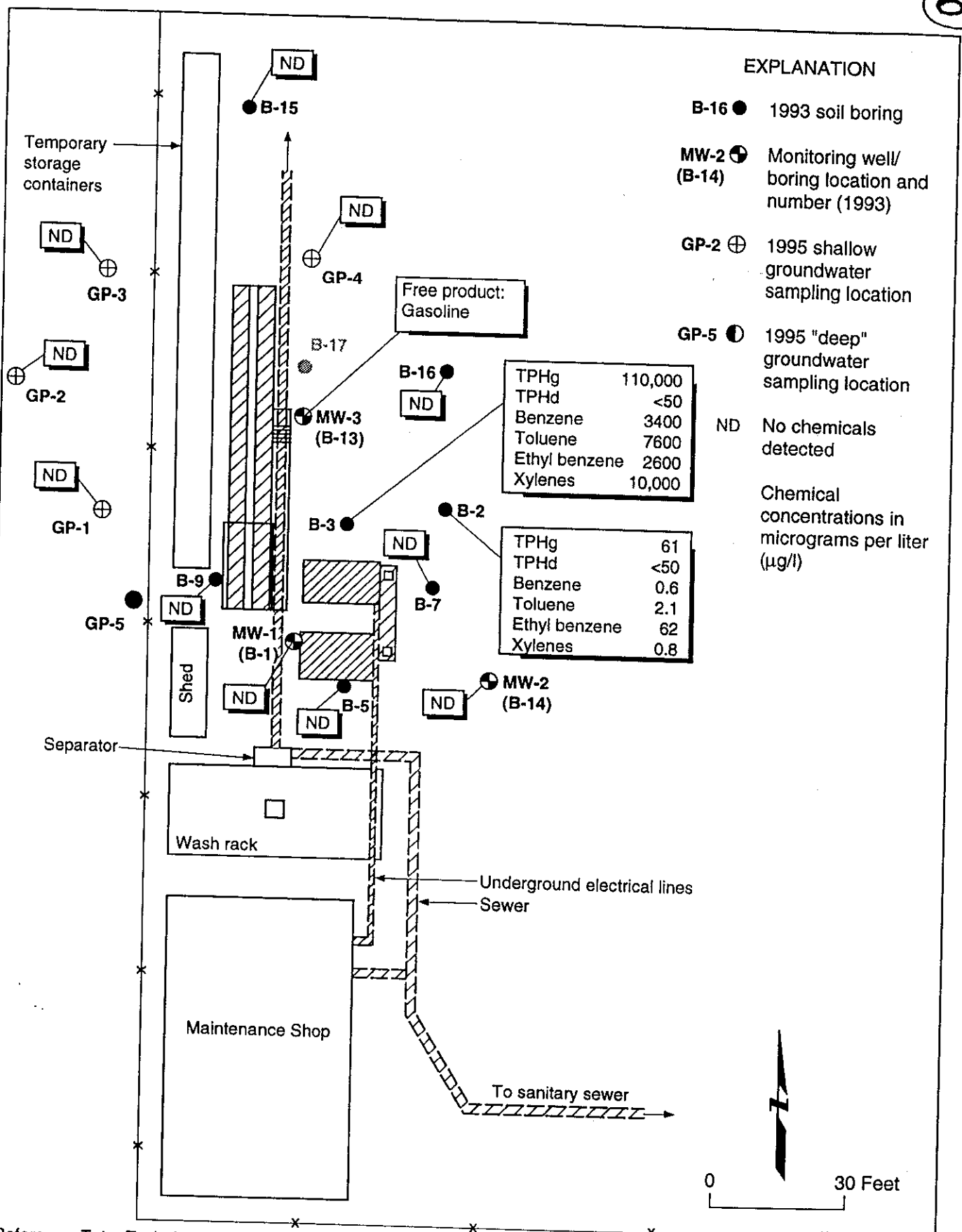
Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
0					MIX.								
1					BASEROCK								
2					DK BROWN, SILTY, CLAY, DAMP								
3													
4													
5			4		DK BROWN SILTY, CLAY, DAMP								
			6		NO ODOR		CL					0.0	0855
6			9		DK BROWN-BLACK SILTY CLAY W/ GREEN MOTTLING, NO ODOR, DAMP.								
7													
8			7		DK BROWN-GREEN, SILTY CLAY, DAMP								
9			9		NO ODOR SHEEN, MOTTLING GREEN/BLACK.		CL						
			13										
10	B13-9.5		8		DK GREEN-BLACK, SILTY CLAY, DAMP, STIFF, SLIGHT CHEMICAL ODOR								
	B13-10.		6		AS ABOVE		CL				0.1	0920	
11			16		BLACK SILTY CLAY GREEN MOTTLING, SLIGHT CHEMICAL ODOR, STIFF, H2O ENCOUNTERED, FREE PRODUCT SHEEN ON SAMPLES OBSERVED.		CL				0.6	0920	
							CL				6.4	0920	
12													
13													
14													
			2		OLIVE BROWN SILTY CLAY, SOME MOTTLING, DAMP, SLIGHTLY ODOR, STIFF								
15	B13-14.5		3		AS ABOVE		CL				2.8	1446	
	B13-15		5		AS ABOVE.		CL				2.6	1446	
16							CL						

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: B13 / MW3
Sheet 2 of 2

Project Name and Location: SAN LORENZO, CNL #35
TC Number: 9410-02

Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
15													
16			1		7 DK OLIVE BROWN SILTY CLAY; DAMP, SLIGHTLY ODOR.							0.0	
			1		9 AS ABOVE							0.9	
17			1		12 AS ABOVE								
18					R.D.H. @ 17'.								
					2" WELL INSTALLED.								
19					0.10 SLOT SCREEN FROM 17'-5' BGS								
					BLANK PIPE 5' - SURFACE								
20					SAND 17' - 4'								
					BENTONITE 4' - 2.5'								
21					CEMENT 2.5 - 0.5'								
					CONCRETE IN WELL BOX W/ LOCKING CAP.								
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													
33													
34													
35													



Reference: Tetra Tech, Inc., 1993

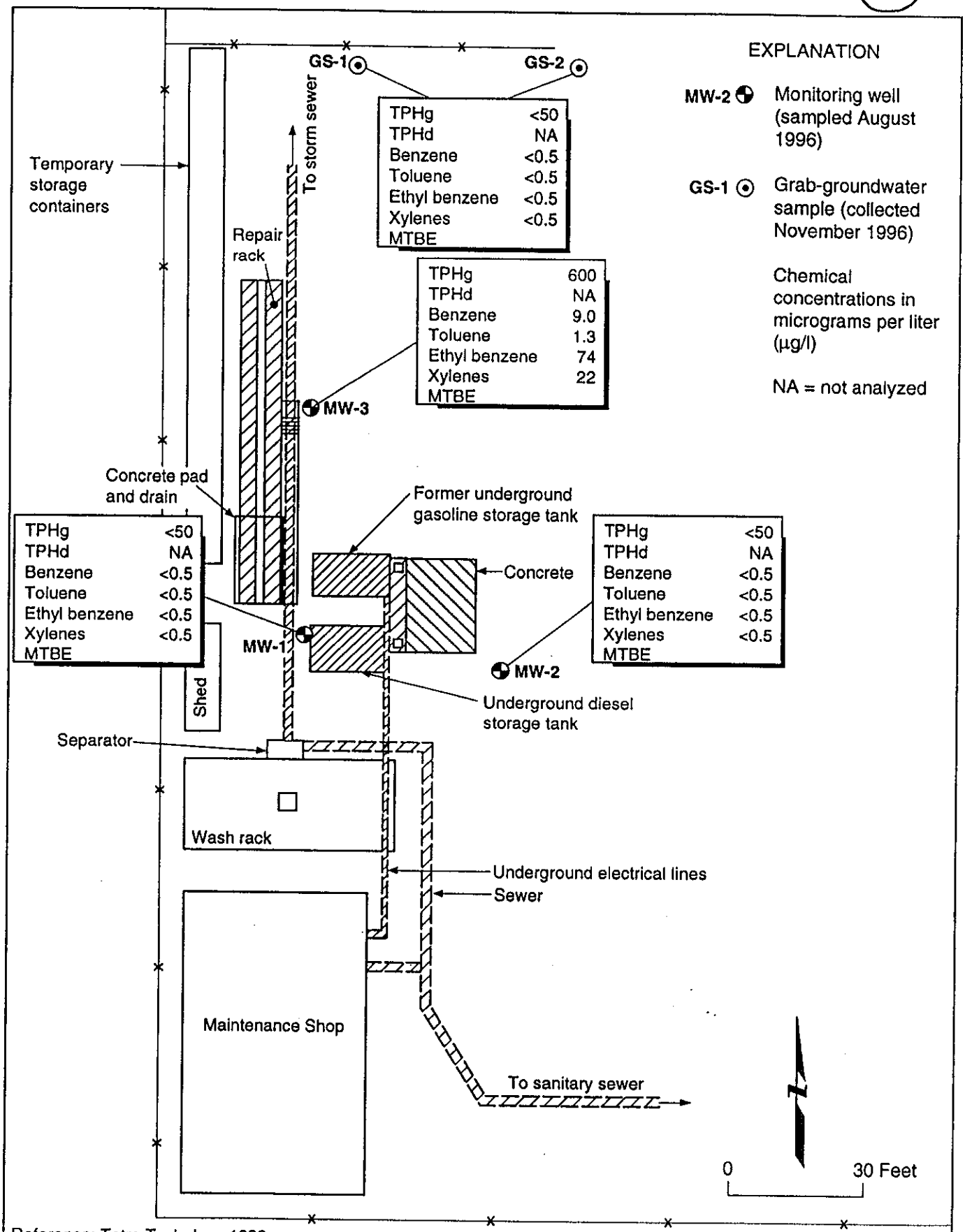
GEOMATRIX

PREVIOUS SHALLOW GRAB GROUNDWATER RESULTS
JULY 1993 AND APRIL 1995
National Guard Organizational Maintenance Shop #35
San Lorenzo, California

Figure 4

Project No. 2868.03

2868.01.004



Reference: Tetra Tech, Inc., 1993

GEOMATRIX

RECENT GROUNDWATER RESULTS
National Guard Organizational Maintenance Shop No. 35
San Lorenzo, California

Figure 6

Project No. 2868.03

2868.03.006

GEOMATRIX

TABLE 4

HISTORICAL WATER LEVEL MEASUREMENTS
National Guard Organizational Maintenance Shop
San Lorenzo, California

Well No.	Date	Depth Below TOC[1] (feet)	TOC Elevation (feet, msl[2])	Groundwater Elevation (feet, msl)
MW-1	11/22/94	8.92	35.53	26.61
	1/6/95	8.31	35.53	27.22
	4/20/95	5.12	35.53	30.41
	5/3/95	5.34	35.53	30.19
	6/9/95	6.14	35.53	29.39
	7/18/95	6.55	35.53	28.98
	8/11/95	7.13	35.53	28.40
	9/8/95	7.61	35.53	27.92
	8/9/96	6.73	35.53	28.80
MW-2	11/22/94	9.41	36.32	26.91
	1/6/95	8.50	36.32	27.82
	4/20/95	6.16	36.32	30.16
	5/3/95	6.13	36.32	30.19
	6/9/95	6.92	36.32	29.40
	7/18/95	7.47	36.32	28.85
	8/11/95	7.90	36.32	28.42
	9/8/95	8.38	36.32	27.94
	8/9/96	7.51	36.32	28.81
MW-3	11/22/95	7.89	34.54	26.65
	1/6/95	7.03	34.54	27.51
	4/20/95	4.55	34.54	29.99
	5/3/95	4.70	34.54	29.84
	6/9/95	5.51	34.54	29.03
	7/18/95	9.00	34.54	25.54
	8/11/95	6.48	34.54	28.06
	9/8/95	6.90	34.54	27.64
	8/9/96	6.10	34.54	28.44

Notes:

1 TOC = Top of casing (measuring point).
2 msl = Above mean sea level.

GEOMATRIX

TABLE 2

MONITORING WELL ANALYTICAL RESULTS[1]
National Guard Organizational Maintenance Shop
San Lorenzo, California

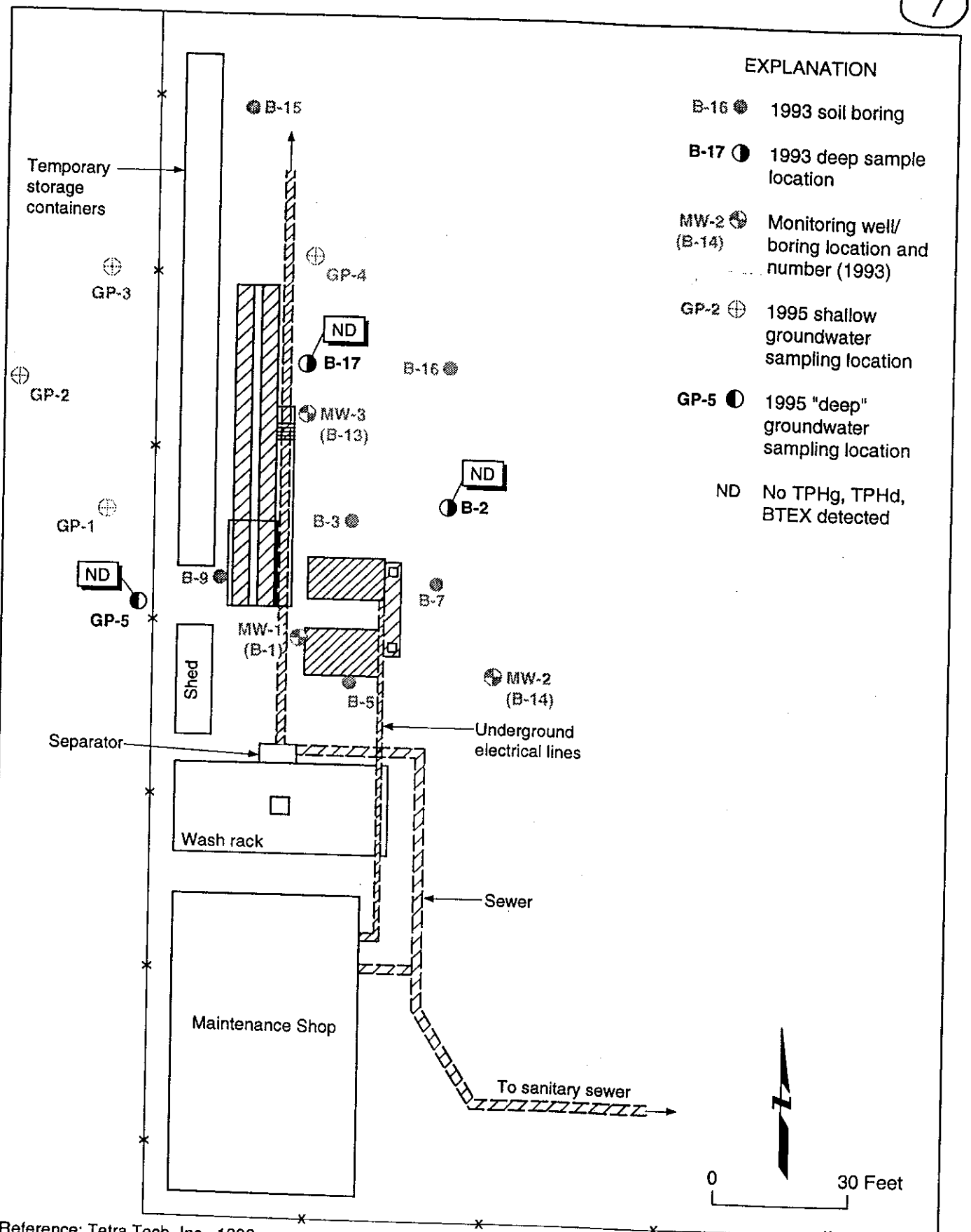
Concentrations in micrograms per liter (µg/l)

Sample No.	Date Collected	TPHd[2]	TPHg[3]	Benzene	Toluene	Xylenes	Ethyl-benzene	MTBE[4]
MW-1	7/14/93	ND[5]	ND	ND	ND	ND	ND	NA[6]
	5/3/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA
	8/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA
	8/9/96	NA	<50	<0.5	<0.5	<0.5	<0.5	<5
MW-2	7/14/93	ND	ND	ND	ND	ND	ND	NA
	5/3/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA
	8/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA
	8/9/96	NA	<50	<0.5	<0.5	<0.5	<0.5	<5
MW-3	7/14/93	<200	4100	ND	ND	640	ND	NA
	5/3/95	<50	600	18	4.2	27	110	NA
	8/11/95	<50	710	11	3.2	23	110	NA
	8/9/96	NA	600	9.0	1.3	22	74	<5

Notes:

1 Chemical analyses performed by Chromalab, Inc., of Pleasanton, California. Laboratory analytical reports detailing the analyses performed, method detection limits for each constituent, and analytical results are included in Appendix A.
2 TPHd = total petroleum hydrocarbons as diesel. Analysis by modified EPA Method 8015.
3 TPHg = total petroleum hydrocarbons as gasoline. Analysis by modified EPA Method 8015.
4 MTBE = methyl tert butyl ether
5 ND = not detected at or above detection limit; detection limit for these samples is unknown. Sampling conducted and performed by TetraTech, Inc.
6 NA = not analyzed.

8



Reference: Tetra Tech, Inc., 1993

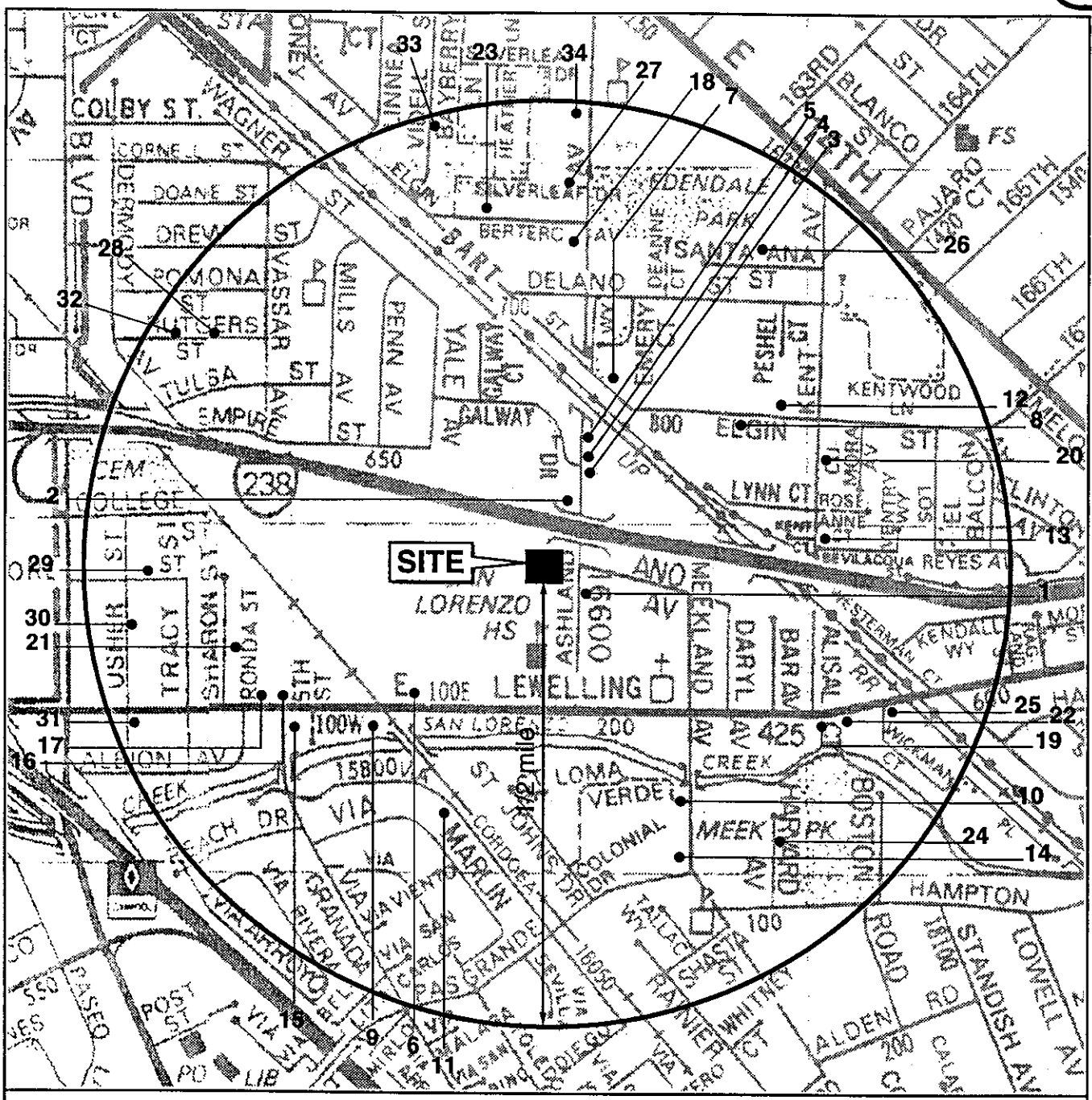
GEOMATRIX

PREVIOUS "DEEP" GRAB GROUNDWATER RESULTS
JULY 1993 AND APRIL 1995
National Guard Organizational Maintenance Shop #35
San Lorenzo, California

Figure 5

Project No. 2868.03

2868.03.005



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EXPLANATION

21 ● Approximate location of well. See Table 5 for detailed information.

N

0 1000 Feet

GEOMATRIX

WELL SURVEY
National Guard Organization Maintenance Shop No. 35
16501 Ashland Avenue
San Lorenzo, California

Figure 8

Project No. 2868

2868.03.008