Fuller Excavating & Demolition, Inc.

P.O. BOX 6595 SAN JOSE, CALIFORNIA 95150

(408) 267-8345 (408) 265-2629

License No. 505228

11/12/96

REPORT for the

THIRD QUARTER 1996 GROUNDWATER SAMPLING

at the

Former Minami Nursery Site

Penny Lane

San Lorenzo, California

Project No. 5107

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October 24, 1996

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INTRODUCTION

At the request of Mr. Jay Woidtke, attorney for the estate of Mr. George Minami, Jr., this report summarizes groundwater monitoring work performed by Fuller Excavating and Demolition, Inc. (FE&DI) to evaluate for the presence of petroleum hydrocarbons in the groundwater beneath the site in the area of one former 1,000-gallon gasoline underground storage tank (UST #1) and one former 2,000-gallon fuel oil underground storage tank (UST #2) at the above-referenced property. This groundwater monitoring work was performed in accordance with a Work Plan submitted to the Environmental Protection Division of the Department of Environmental Health of the Alameda County Health Care Services Agency (ACHCSA) by Engineering-Science Inc. in October 1993 (ESI, October 1993).

The groundwater monitoring activities for the site included the following tasks:

- Updating the Site Safety Plan.
- Measuring monthly water levels in the three groundwater monitoring wells (MW-1, MW-2, and MW-3) at the site, and performing an inspection for floating hydrocarbons in each of the wells.
- Collecting quarterly groundwater samples from each of the three groundwater monitoring wells at the site for chemical analysis.
- Documenting the sampling and analysis methodologies, and presenting the results and our conclusions in the form of this written report.

SITE DESCRIPTION

The former Minami Nursery site is currently located on Penny Lane in San Lorenzo, California, as shown on the Site Vicinity Map (Figure No. 1). The site is currently a vacant lot that was originally a portion of the Minami Nursery property, which has been largely developed as a residential subdivision, as shown on the Site Location Map (Figure No. 2). The site is relatively flat and lies at an elevation of approximately 40 feet above Mean Sea Level. The site is currently vacant, except for a large stockpile of soil which is present in the central area of the site. Residential properties are located to the north, south, and east of the site, while commercial businesses are located to the west of the site. The site boundaries and approximate locations of selected features on the site are shown on the Generalized Site Plan (Figure No. 3).

REGIONAL AND LOCAL HYDROGEOLOGY

The site lies on the East Bay Plain between San Francisco Bay to the west and north, the Hayward Fault and foothills of the Diablo Range to the east, and the city limit of Hayward to the south. The East Bay Plain lies within the Coast Range geomorphic province and is characterized by broad alluvial fans deposited at the foot of the Diablo Range to the east. The broad alluvial fans slope westward to San Francisco Bay.

Within the East Bay Plain, the site is located in the west-central portion of the hydrogeologic zone known locally as San Lorenzo Cone (Hickenbottom and Muir, 1988). This cone consists of unconsolidated deposits in an alluvial fan formed by nearby San Lorenzo Creek (Muir, 1993). Interbedded fluvial deposits of the San Lorenzo Cone, including silt, sand, gravel, and clay, underlie the site (Helley et al., 1979). The soils encountered in previous borings at the site have consisted primarily of silty clay, sandy silt, silty sand, and clayey silt (FE&DI, 1996).

The framework of the hydrogeologic deposits in the site area consist of random continuous and discontinuous sequences of saturated coarse-grained zones that form aquifers in the site area (Muir, 1993). These aquifers are (from shallowest to deepest) the upper aquifer, the Newark Aquifer, the Centerville Equivalent Aquifer, the Fremont Aquifer and the Deeper Aquifer. The depths of these aquifers are estimated to range from the ground surface to 50 feet, 30 to 75 feet, 130 to 220 feet, 250 to 400 feet, and greater than 400 feet deep, respectively. These aquifers generally slope to the west (Maslonkowski, 1984). The Holocene-age unconsolidated alluvium of the upper aquifer yields small amounts of groundwater to wells sufficient only for local usage, since most of this younger alluvium lies above the regional zone of saturation (Muir, 1993).

The site is located approximately 3,000 feet north of Ward Creek, one mile east of Sulphur Creek, one mile south of San Lorenzo Creek, and two miles east of the eastern shoreline of San Francisco Bay. The active Hayward Fault is approximately two miles east of the site.

[redacted] The direction of groundwater flow has previously been measured to be towards the west-northwest.

PREVIOUS ENVIRONMENTAL WORK

Prior to the present investigation, FED&I and others performed environmental investigations at the site related to the removal of the two former USTs, including the following activities:

- a Preliminary Subsurface Assessment prior to removal of the USTs (Emcon Associates, December 1988);
- an Environmental Investigation related to the removal of the USTs and additional soil excavation (ESI, August 1990);
- documentation of the backfilling of the two excavations for the former USTs with clean fill (ESI, August 1990);
- a Work Plan discussing proposed work to evaluate the level of contamination residing in the stockpiled soil and the soil materials underlying the stockpiled soil, and proposed work to characterize the lateral extent of groundwater contamination beneath the site (ESI, October 1993); and
- a Preliminary Site Assessment Investigation implementing the work proposed to evaluate the stockpiled soil, the subsurface soil, and the groundwater contamination beneath the site (FED&I, June 1996).

A summary of the previous work performed at the site was provided in the Preliminary Site Assessment Investigation conducted by FED&I at the site earlier this year (FED&I, June 1996). Figures showing the locations of the former USTs, the two excavations, the confirmatory soil samples, and the borings drilled by Emcon Associates are included in the ESI Workplan. Tables summarizing the results of the laboratory chemical analyses conducted by Emcon and ESI are also included in the ESI Workplan.

FIELD WORK

Groundwater Level Monitoring

On July 11, August 26, and September 24, 1996, the static water level in each well was measured to the nearest 0.01-foot using a Solinst® electric water-level sounder cleaned with Alconox® and tap water before use in each well. The liquid in each well was examined for visual evidence of hydrocarbons by gently lowering approximately half the length of a Teflon® bailer (cleaned with Alconox® and tap water) past the air / water interface. The water sample was then retrieved and inspected for floating product, sheen, emulsion, color, and clarity.

The groundwater elevations for each well on July 11, August 26, and September 24, 1996 were calculated by subtracting the depth-to-water (DTW) measurements from the surveyed elevation of the top of the well casing. The DTW measurements, wellhead elevations, and groundwater elevations are presented in Table 1, Cumulative Groundwater Monitoring Data, on the following page.

Based on the groundwater elevations calculated on July 11, August 26, and September 24, 1996, **an average local groundwater gradient of approximately 0.004 foot per foot (0.4-foot per 100 feet) to the west-northwest was interpreted for the site.** The Groundwater Gradient Maps (Figure Nos. 4, 5, and 6) are graphic interpretations of the groundwater gradient based on the July 11, August 26, and September 24, 1996 groundwater monitoring data, respectively.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Minami Nursery Site
Penny Lane
San Lorenzo, California

Well Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Field Observations
MW-1				
05/31/96	42.57	16.89	25.68	Noticeable Odor
06/04/96		16.92	25.65	Noticeable Odor
07/11/96		17.23	25.34	Noticeable Odor
08/26/96		17.59	24.98	Noticeable Odor
09/24/96		17.84	24.73	Noticeable Odor
MW-2				
05/31/96	42.17	16.69	25.48	No Odor
06/04/96		16.65	25.52	No Odor
07/11/96		17.04	25.13	No Odor
08/26/96		17.31	24.86	No Odor
09/24/96		17.59	24.58	No Odor
MW-3				
05/31/96	43.01	17.75	25.26	No Odor
06/04/96		17.77	25.24	No Odor
07/11/96		18.06	24.95	No Odor
08/26/96		18.37	24.64	No Odor
09/24/96		18.60	24.41	No Odor

Wellhead Elevation based on benchmark: "HESP-BAR" a brass disc at the south end of the return on the southeast corner of the intersection of Hesperian Boulevard and Bartlett Avenue. Elevation taken as 43.73 feet above Mean Sea Level, City of San Lorenzo datum.

Elevations in feet above mean sea level. Depths in feet.

Groundwater Sampling

On September 24, 1996, the FE&DI Project Geologist purged and sampled each of the three groundwater monitoring wells at the site. The field work consisted of measuring the static depth-to-water (DTW) level in each monitoring well, subjectively evaluating groundwater from each monitoring well for the presence of petroleum fuel hydrocarbons, the purging of groundwater from each monitoring well, and the sampling of groundwater from each monitoring well for laboratory analysis. Field methods used during the purging and sampling are described in Appendix A of this report.

No evidence of measurable floating product was observed in any of the three wells. No evidence of hydrocarbon vapor was noted in the water samples collected from monitoring wells MW-2 and MW-3; however, a noticeable odor was detected in the water samples collected from monitoring well MW-1. Each of the three monitoring wells were purged and sampled in accordance with the attached groundwater sampling protocol in Appendix A. Well Purge Data Sheets with the parameters monitored from the wells are included in Appendix B.

Approximately 10 gallons of water were purged from each monitoring well prior to sampling, and has been temporarily stored in DOT-approved 55-gallon metal drums at the site. The purge water remains the responsibility of the Property Owner. If necessary, FE&DI can arrange to have the water-filled drums removed to an appropriate disposal facility with the Property Owner's authorization.

LABORATORY ANALYSES

Analytical Methods for Groundwater Samples

Groundwater samples collected from wells MW-1, MW-2, and MW-3 were also submitted with a Chain-of-Custody Record to the Priority Environmental Laboratory in Milpitas, California (ELAP No. 1708). The groundwater samples were analyzed for the following petroleum fuel compounds, as requested by the ACHCSA:

1) TPHg by GCFID (LUFT Method) following sample purge and trap by EPA Method 5030;
2) the volatile hydrocarbon constituents BTEX by EPA Test Method 602;
3) TPHd using EPA Methods 3550 and modified 8015; and
4) TOG by EPA Standard Method 5520 C, D, and F.

Laboratory Results for Groundwater Samples

Laboratory results of the water samples collected from the monitoring wells on September 24, 1996, indicated the following:

(1) An elevated concentration of 4,700 parts per billion (ppb) of TPHg, a detectable concentration of 800 ppb of TOG, detectable concentrations of the gasoline BTEX constituents benzene (4.5 ppb), toluene (2.4 ppb), ethylbenzene (12 ppb), and total xylene isomers (21 ppb), and nondetectable concentrations of TPHd (less than 50 ppb) were measured in the groundwater samples collected from monitoring well MW-1.

(2) Nondetectable concentrations of TOG (less than 500 ppb), nondetectable concentrations of TPHd (less than 50 ppb), nondetectable concentrations of TPHg (less than 50 ppb), and nondetectable concentrations of each of the BTEX constituents (less than 0.5 ppb) were measured in the groundwater samples collected from monitoring well MW-2.

(3) Nondetectable concentrations of TOG (less than 500 ppb), nondetectable concentrations of TPHd (less than 50 ppb), nondetectable concentrations of TPHg (less than 50 ppb), and nondetectable concentrations of each of the BTEX constituents (less than 0.5 ppb) were measured in the groundwater samples collected from monitoring well MW-3.

The results of the laboratory analyses of the groundwater samples are presented in Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples, on the following page, and the Laboratory Data Sheet is included in Appendix B.

The Groundwater Concentration Maps for TPHg, TOG, and Benzene (Figure Nos. 7, 8, and 9) are graphic interpretations of the contaminants detected in the groundwater beneath the site on September 24, 1996.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Minami Nursery Site
Penny Lane
San Lorenzo, California

Well Date	TOG	TPHd	TPHg	B	T	E	X	MTBE
MW-1								
06/04/96	1,800	<50	4,100	4.2	4.2	6.0	36	<0.5
09/24/96	800	<50	4,700	4.5	2.4	12	21	NA
MW-2								
06/04/96	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/24/96	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	NA
MW-3								
06/04/96	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/24/96	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	NA

Measurements are in parts per billion (ppb).

TPHd: Total Petroleum Hydrocarbons as diesel analyzed by EPA Methods 3550 and modified 8015.

TPHg: Total Petroleum Hydrocarbons as gasoline analyzed by EPA Methods 5330 and modified 8015.

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Methods 5030 and modified 602.

MTBE: Methyl Tertiary Butyl Ether analyzed by modified EPA Method 602.

TOG: Total Oil and Grease analyzed by EPA Standard Method 5520 C, D, and F.

<: Less than the laboratory detection limit = NonDetectable.

NA: Not Analyzed.

CONCLUSIONS

Based on the finding of this investigation and previous work performed at the site, FE&DI concludes the following:

Groundwater Gradient

The groundwater gradient appears to average approximately 0.004 foot per foot (0.4 foot per 100 feet) to the west-northwest. This direction of groundwater flow is similar to the inferred direction of groundwater flow, based on the local topography, and previous measurements collected earlier in 1996.

Hydrocarbons in Groundwater

o The groundwater samples collected from well MW-1 indicate that groundwater has been impacted by petroleum hydrocarbons (TPHg, TOG, and BTEX) in the immediate area of the former USTs.

o The groundwater samples collected from wells MW-2 and MW-3 indicate that groundwater has not been impacted by petroleum hydrocarbons in the site boundary area downgradient of the former USTs.

These findings are consistent with the results of laboratory analyses of the "grab" groundwater samples collected by Emcon Associates in August and September 1988 during their Phase II and III assessments. The nondetectable results measured in the groundwater samples from wells MW-2 and MW-3 suggest that the groundwater contamination detected in the immediate area of the former USTs appears to not have migrated the short distance (less than 100 feet) to well MW-3 which is located directly downgradient from well MW-1. This could be the result of the petroleum contaminants effectively being trapped along the asymmetrical stratigraphic contact of the water-bearing materials with the backfilled excavation materials adjacent to the water table level.

RECOMMENDATIONS

The Environmental Protection Division of the Department of Environmental Health of the Alameda County Health Care Services Agency (ACHCSA) is the local implementing agency (LIA) for the oversight of investigations and remediation of soil and groundwater contamination from USTs in the site area. The ACHCSA generally requires environmental investigations at UST sites with petroleum fuel-impacted soils and groundwater. The shallow depth to first groundwater, and the fact that the groundwater has been impacted beneath the site suggest that continued quarterly groundwater monitoring will be required for the site by the ACHCSA, and additional subsurface environmental investigations might also be required for the site.

Based upon the above conclusions, to approach closure at this site, FE&DI recommends the following work:

- Continue quarterly sampling of the wells for a period of one year (through June 1997) to evaluate trends in gasoline and fuel oil hydrocarbon concentrations in the groundwater beneath the site.

- Continue monthly monitoring of the wells for a period of one year (through June 1997) to evaluate trends in the direction of groundwater flow beneath the site.

REPORT DISTRIBUTION

FE&DI recommends that copies of this report be forwarded to the following agency representative:

Ms. Amy Leech, REHS
Hazardous Materials Specialist
Environmental Protection Division
Department of Environmental Health
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite #250
Alameda, California 94502-6577

LIMITATIONS

This report was prepared in accordance with generally accepted standards of environmental, geological, and engineering practice in California at the time of the investigation. The investigation was conducted solely to evaluate environmental conditions of the shallow groundwater for gasoline and fuel oil hydrocarbons beneath the site in the area of two former USTs. No soil engineering or geotechnical implications are stated, nor should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Further investigation, including subsurface exploration and laboratory testing of soil and groundwater samples at the site, can aid in evaluating subsurface environmental conditions and reduce the inherent uncertainties associated with this type of limited investigation. Subsurface conditions may vary away from the data points available.

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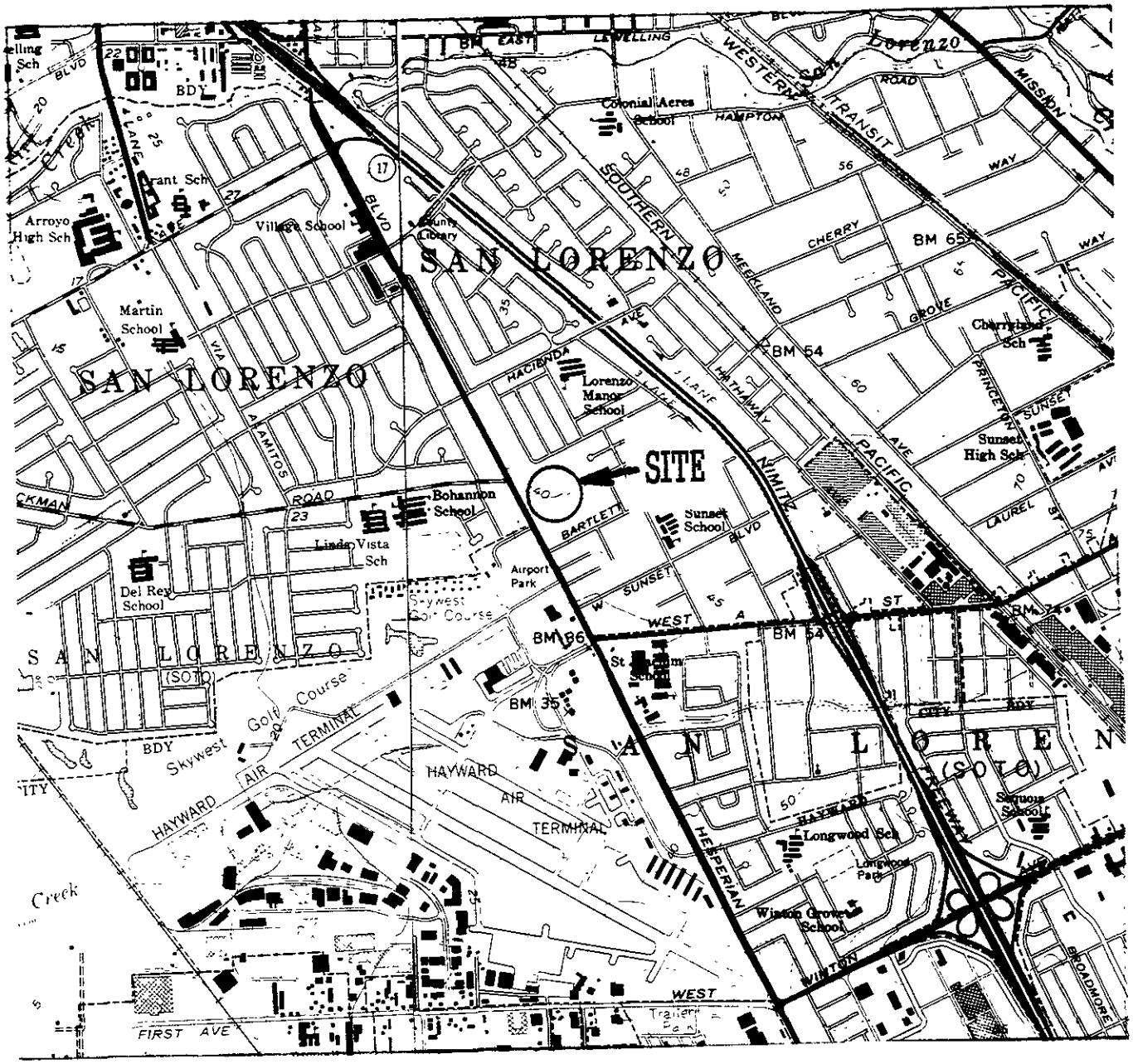
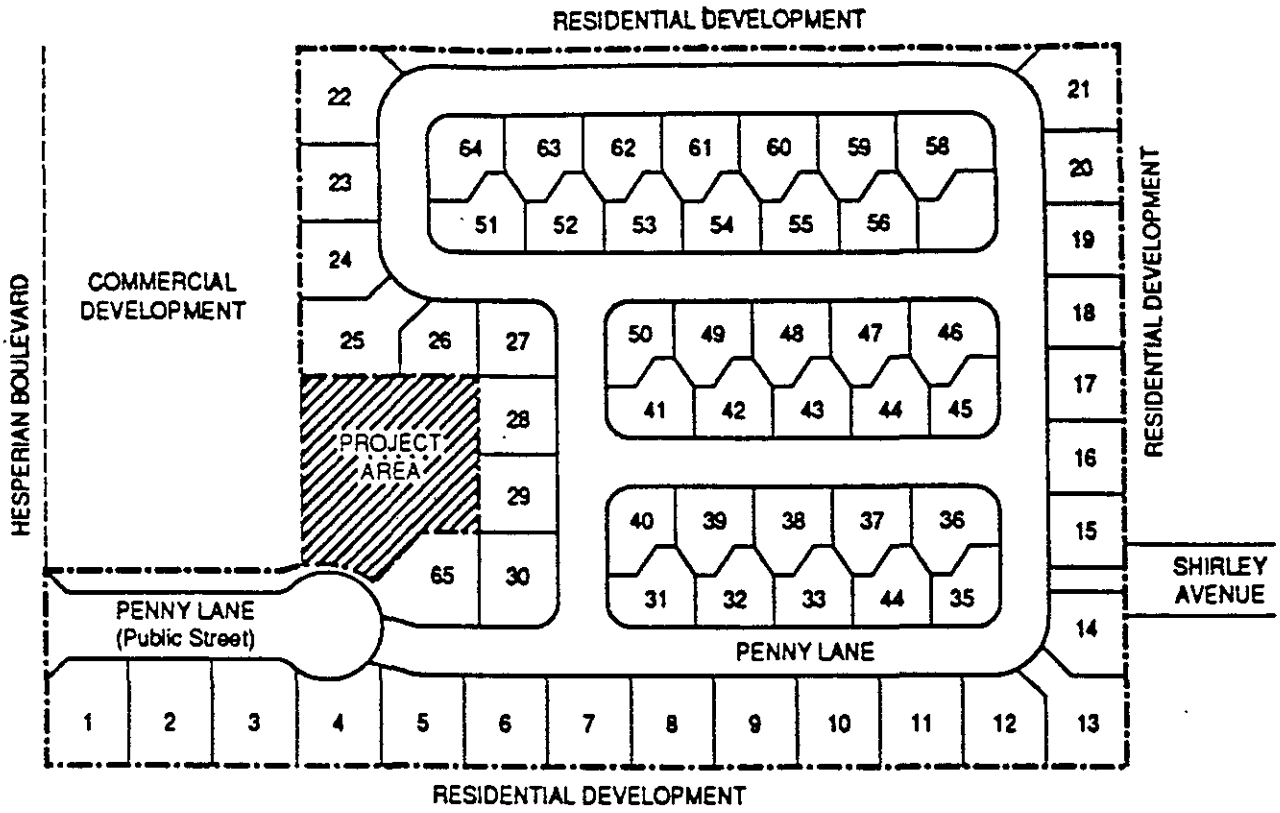


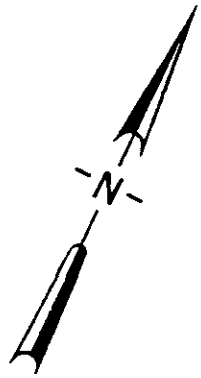
Base Map: United States Geological Survey 7.5-minute Topographic Quadrangle Maps, Hayward and San Leandro Maps. Photorevised 1980.

-N-

Map Scale: 1 inch = 2,000 feet

FULLER EXCAVATING & DEMOLITION, Inc.	SITE VICINITY MAP	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	1

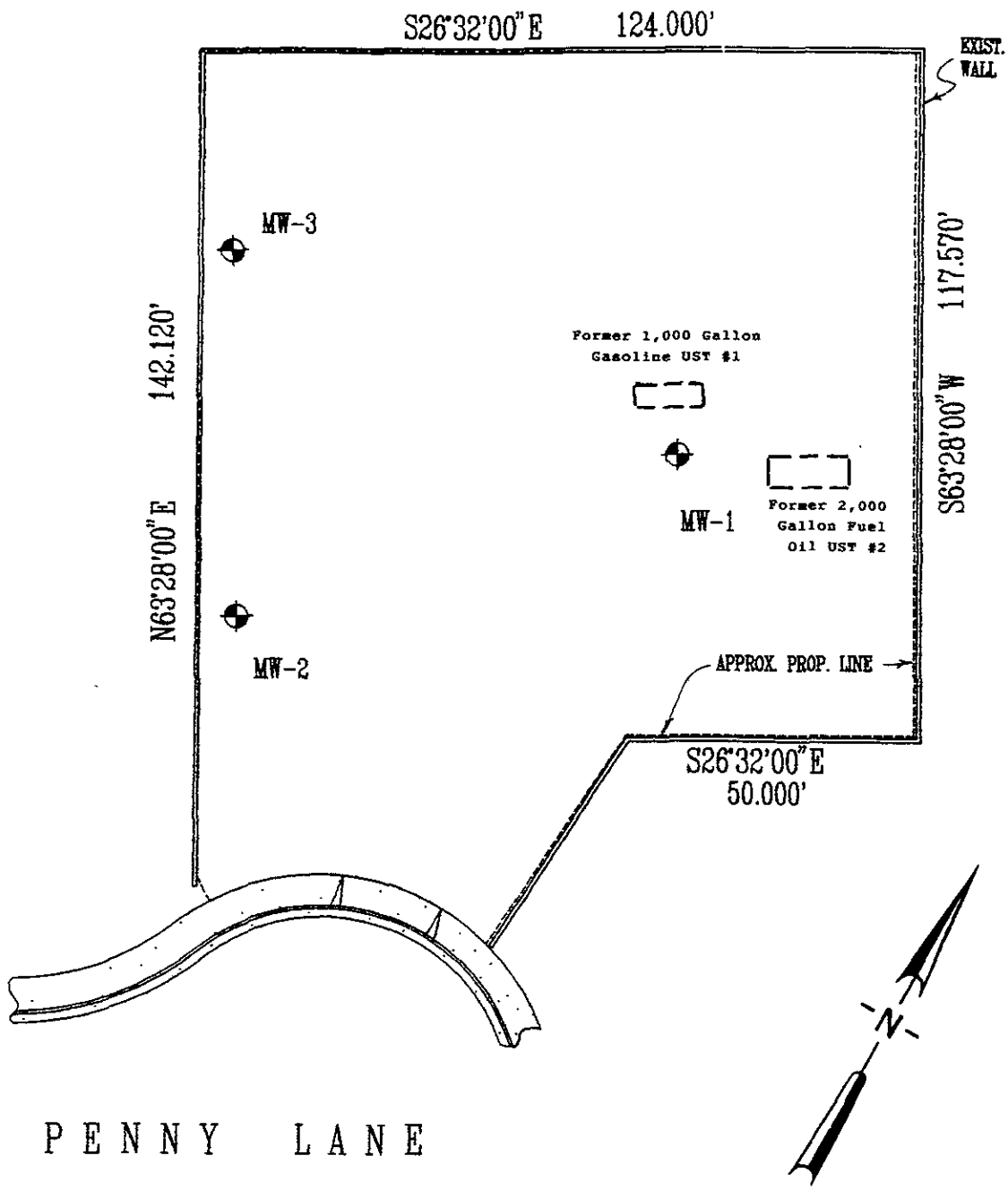




Base Map: Post - Redevelopment Site Plan for the Minami Nursery Property in Hayward, California. (ESI, 1993).

Map Scale: 1 inch = 150 feet

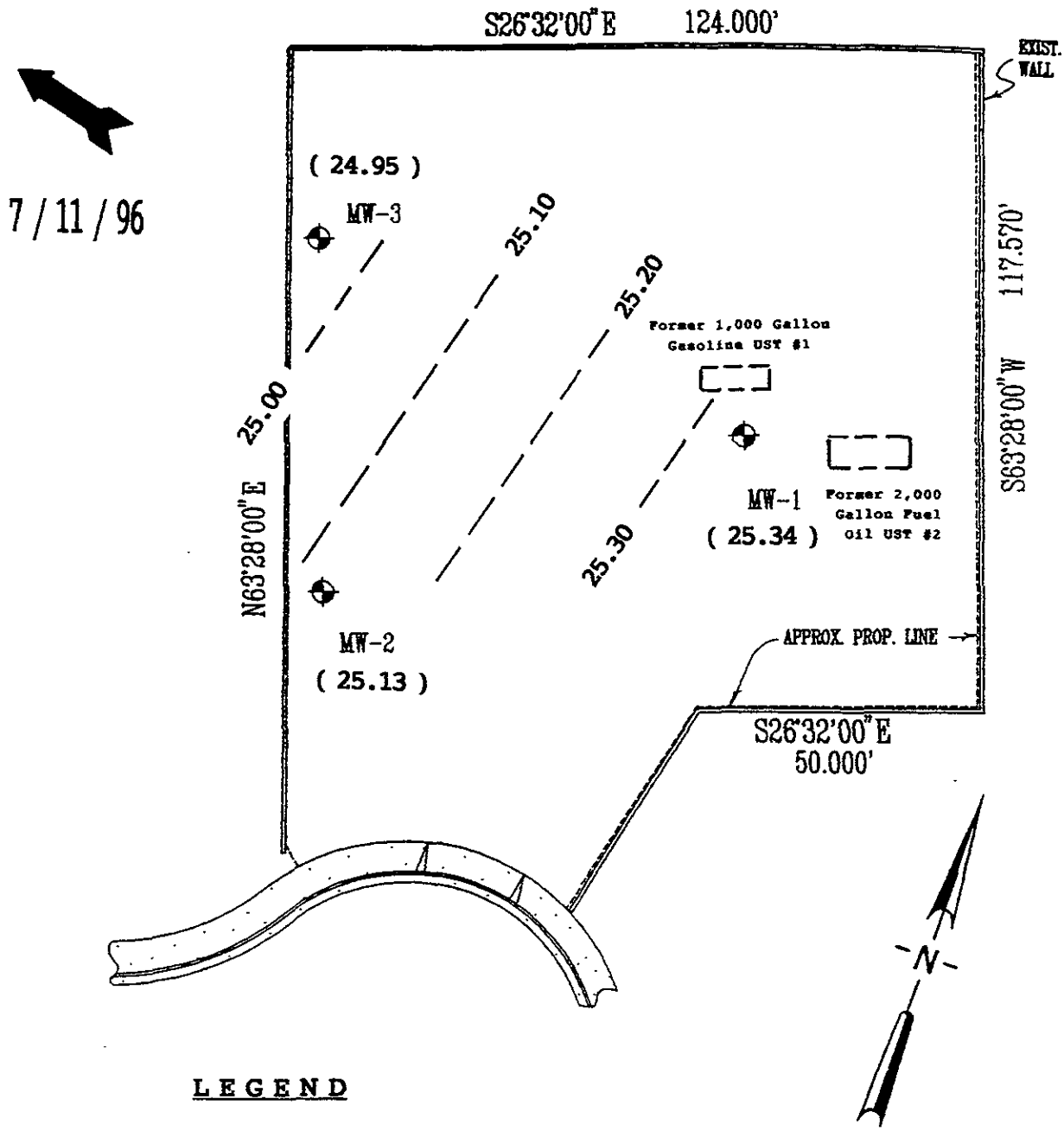
FULLER EXCAVATING & DEMOLITION, Inc.	SITE LOCATION MAP	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	2



Map Scale: 1 inch = 30 feet

Base Map: Site Survey Plat Map for the Former Minami Nursery Property in San Lorenzo, California. (Ron Archer Civil Engineering, 1996).

FULLER EXCAVATING & DEMOLITION, Inc.	GENERALIZED SITE PLAN	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	3



LEGEND

(25.34) = **Groundwater Elevation measured in feet; Datum is Mean Sea Level**

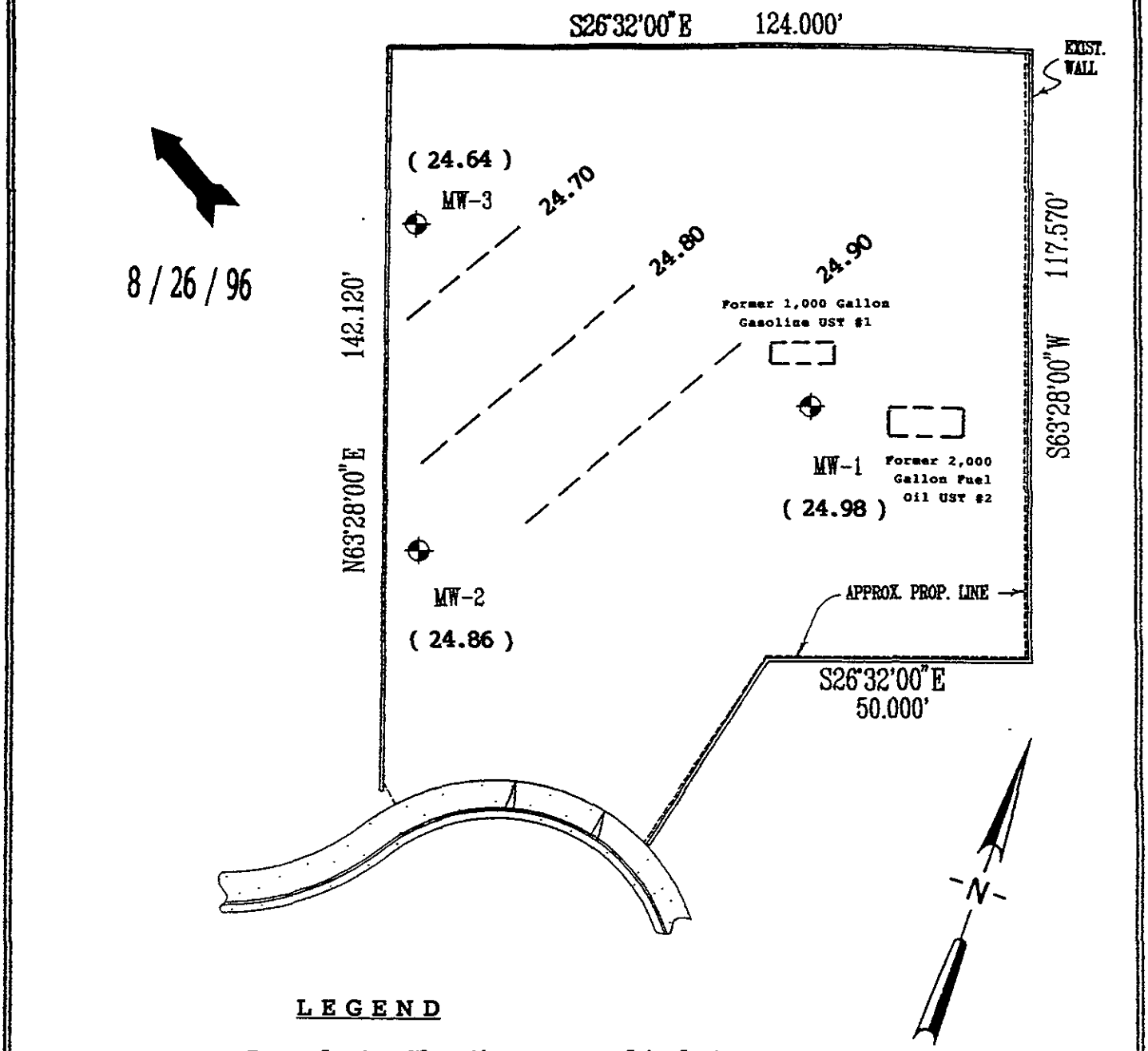
= **Line of Equal Elevation of Groundwater measured in feet; Datum is Mean Sea Level**

= Direction of Groundwater Flow

1 inch = 30 feet

7/11/96

FULLER EXCAVATING & DEMOLITION, Inc.	GROUNDWATER GRADIENT MAP	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	**4**



LEGEND

(24.98) = **Groundwater Elevation measured in feet; Datum is Mean Sea Level**

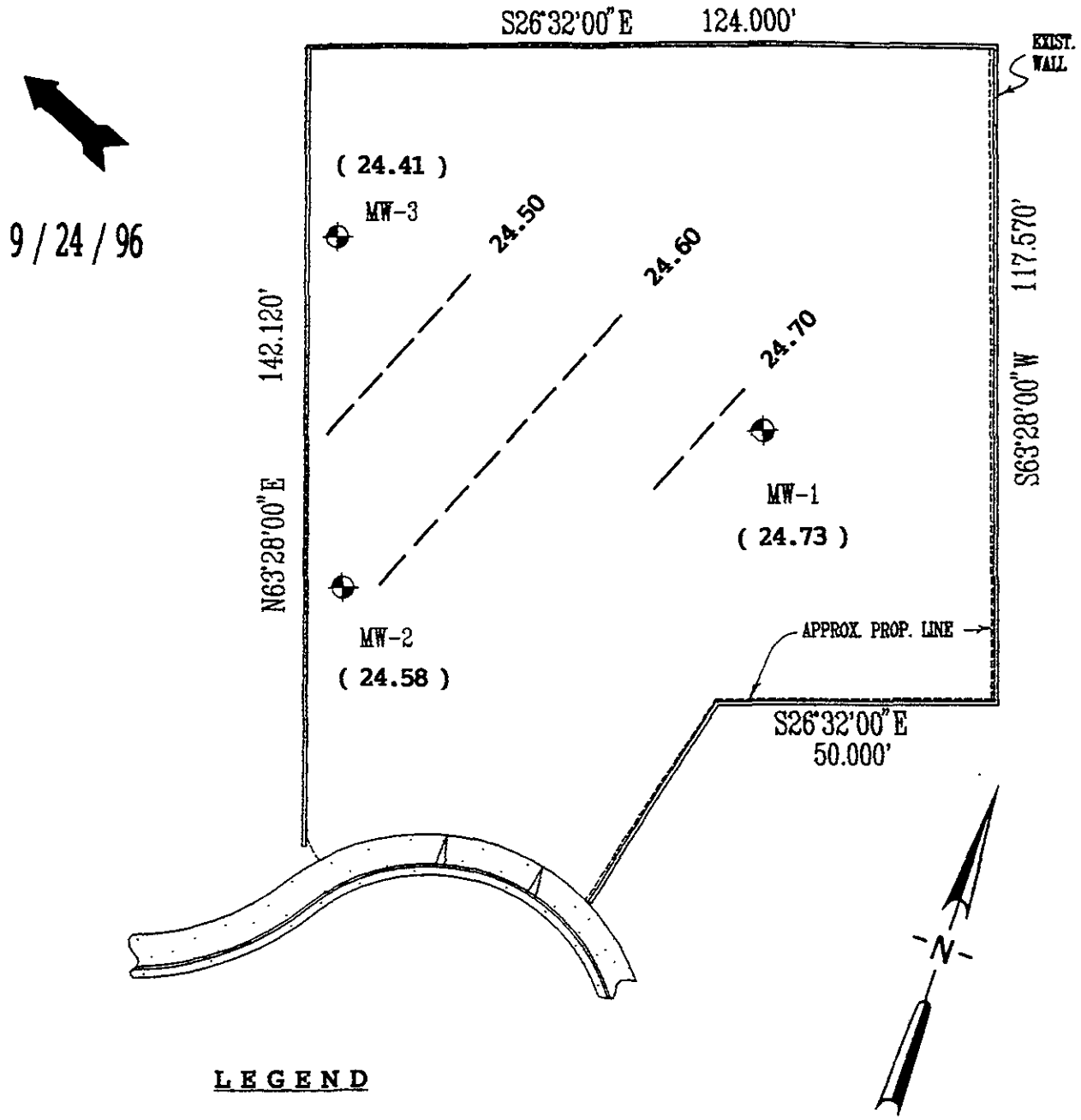
= **Line of Equal Elevation of Groundwater measured in feet; Datum is Mean Sea Level**

= Direction of Groundwater Flow

1 inch = 30 feet

8 / 26 / 96

FULLER EXCAVATING & DEMOLITION, Inc.	GROUNDWATER GRADIENT MAP	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	5



9 / 24 / 96

LEGEND

(24.73) = **Groundwater Elevation measured in feet; Datum is Mean Sea Level**

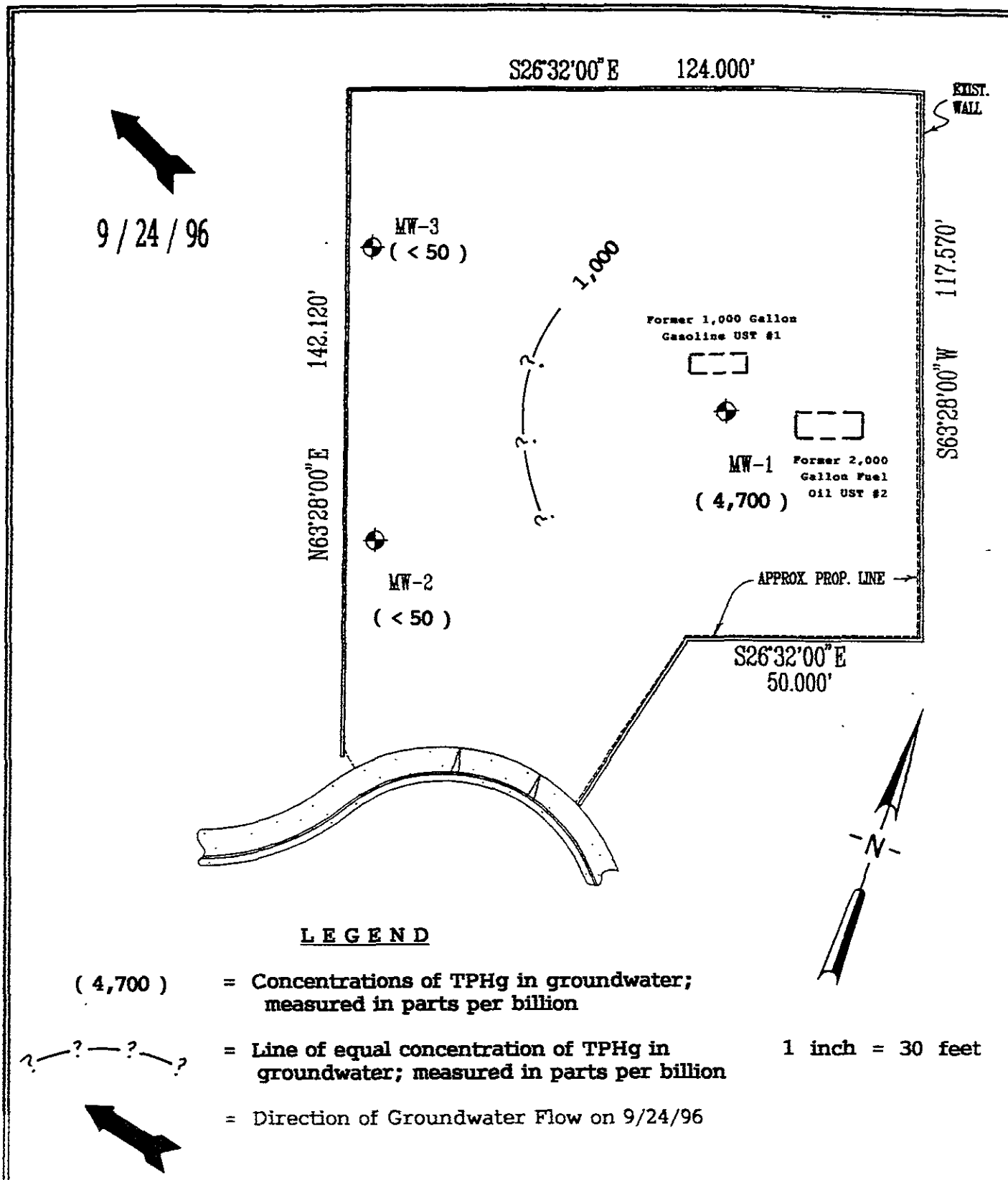
= **Line of Equal Elevation of Groundwater measured in feet; Datum is Mean Sea Level**

= Direction of Groundwater Flow

1 inch = 30 feet

9 / 24 / 96

FULLER EXCAVATING & DEMOLITION, Inc.	GROUNDWATER GRADIENT MAP	FIGURE NO.
	Former Minami Nursery Site	6
Project No. 5107	San Lorenzo, California	



LEGEND

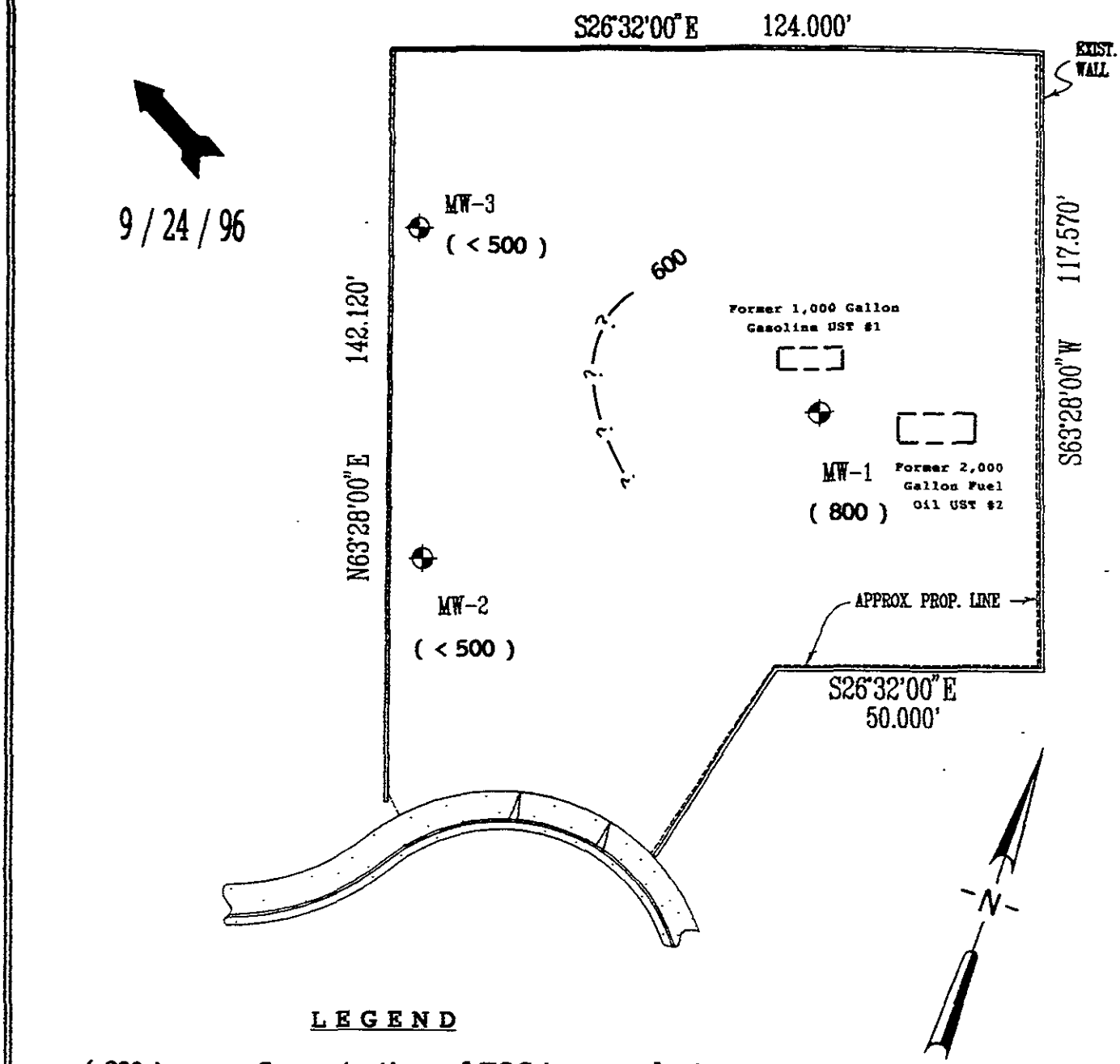
(4,700) = **Concentrations of TPHg in groundwater; measured in parts per billion**

= **Line of equal concentration of TPHg in groundwater; measured in parts per billion**

= Direction of Groundwater Flow on 9/24/96

1 inch = 30 feet

FULLER EXCAVATING & DEMOLITION, Inc.	TPH-G CONCENTRATION MAP	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	7



LEGEND

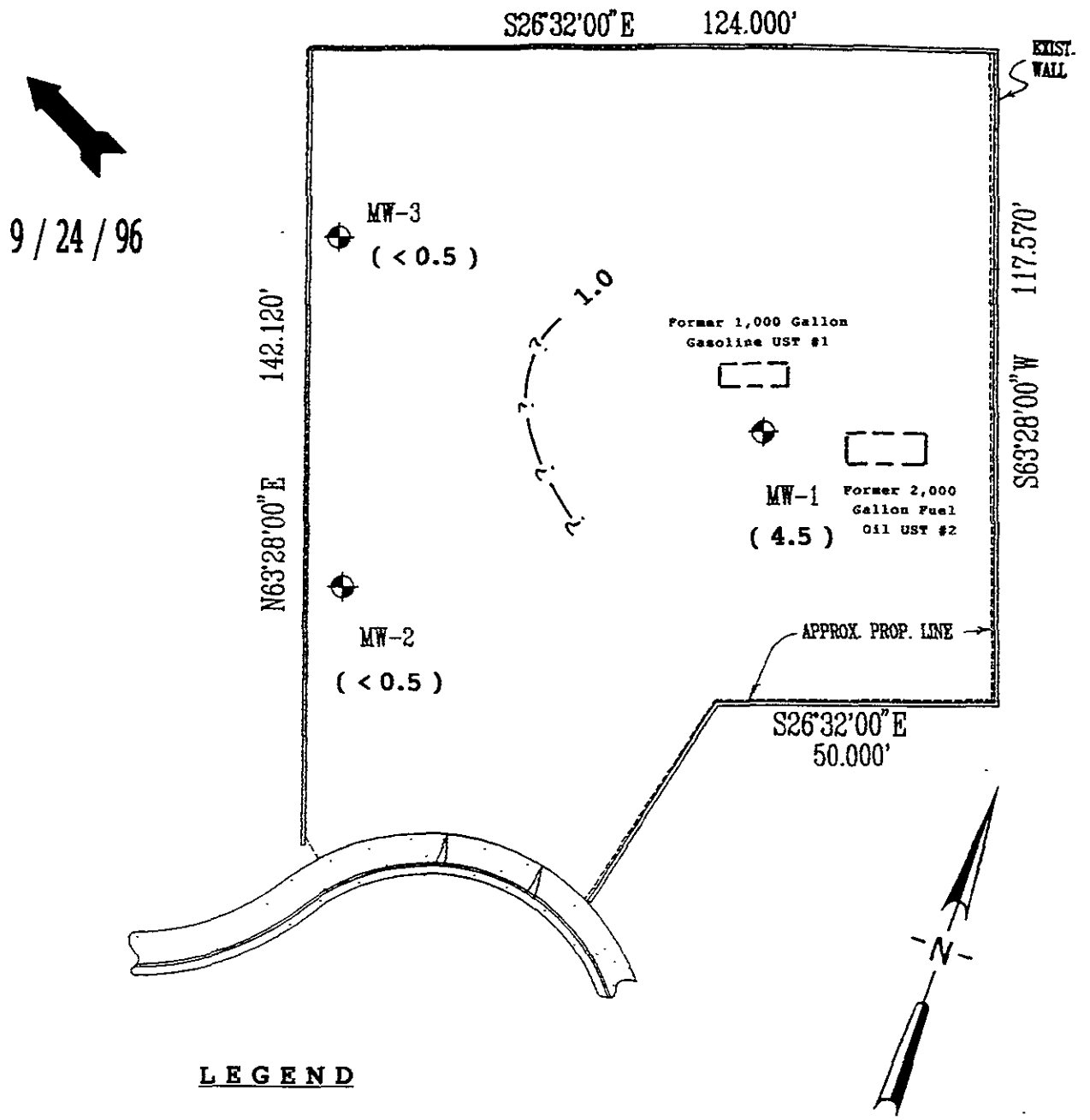
(800) = **Concentrations of TOG in groundwater; measured in parts per billion**

= **Line of equal concentration of TOG in groundwater; measured in parts per billion**

= Direction of Groundwater Flow on 9/24/96

1 inch = 30 feet

FULLER EXCAVATING & DEMOLITION, Inc.	TOG CONCENTRATION MAP	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	8



LEGEND

(4.5) = **Concentrations of Benzene in groundwater; measured in parts per billion**

= **Line of equal concentration of Benzene in groundwater; measured in parts per billion**

= Direction of Groundwater Flow on 9/24/96

1 inch = 30 feet

FULLER EXCAVATING & DEMOLITION, Inc.	BENZENE CONCENTRATION MAP	FIGURE NO.
Project No. 5107	Former Minami Nursery Site San Lorenzo, California	9

APPENDIX A

Field Protocol

FIELD PROTOCOL

The following presents Fuller Excavating & Demolition, Inc.'s protocol for a typical site groundwater monitoring investigation involving gasoline or diesel hydrocarbon-impacted groundwater.

Site Safety Plan

The Site Safety Plan describes the safety requirements for the evaluation of gasoline or diesel hydrocarbons in soil, groundwater, and the vadose-zone at the site. The site Safety Plan is applicable to personnel of Fuller Excavating & Demolition, Inc. and its subcontractors. Fuller Excavating & Demolition, Inc. personnel, and subcontractors of Fuller Excavating & Demolition, Inc. scheduled to perform the work at the site are briefed on the contents of the Site Safety Plan before work begins. A copy of the Site Safety Plan is available for reference by appropriate parties during the work. A site Safety Officer is assigned to the project.

Monitoring Well Construction

Monitoring wells are constructed in selected borings using clean 2- or 4-inch-diameter, thread-jointed, Schedule 40 polyvinyl chloride (PVC) casing. No chemical cements, glues, or solvents are used in well construction. Each casing bottom is sealed with a threaded end-plug, and each casing top with a locking plug. The screened portions of the wells are constructed of machine-slotted PVC casing with 0.010-inch-wide or 0.020-inch-wide (typical) slots for initial site wells. Slot size for subsequent wells may be based on sieve analysis and / or well development data. The screened sections in groundwater monitoring wells are placed to allow monitoring during seasonal fluctuations of groundwater levels.

The annular space of each well is backfilled with No. 2 by 12 sand, or similar sorted sand, to approximately two feet above the top of the screened casing for initial site wells. The sand pack grain size for subsequent wells may be based on sieve analysis and/or well development data. A 1- to 2-foot-thick bentonite plug is placed above the sand as a seal against cement entering the filter pack. The remaining annulus is then backfilled with a slurry of water, neat cement, and bentonite to approximately one foot below the ground surface.

An aluminum utility box or steel standpipe is placed over each wellhead and set in concrete placed flush with the surrounding ground surface. Each wellhead cover has a seal to protect the monitoring well against surface-water infiltration. The designs discourage vandalism and reduce the possibility or accidental disturbance of the wells.

Groundwater Monitoring Well Development

The monitoring wells are developed by bailing or over-pumping and surge-block techniques. The wells are either bailed or pumped, allowed to recharge, and bailed or pumped again until the water removed from the wells is determined to be clear. The wells are allowed to equilibrate for at least 48 hours after development prior to sampling. Water generated by well development is stored in 17E Department of Transportation (DOT) 55-gallon drums on site, and remains the responsibility of the client.

Groundwater Sampling

The static water level in each well is measured to the nearest 0.01-foot using a Solinst® electric water-level sounder or oil/water interface probe (if the wells contain floating product) cleaned with Alconox® and water before use in each well. The liquid in the wells is examined for visual evidence of hydrocarbons by gently lowering approximately half the length of a Teflon® bailer (cleaned with Alconox® and water) past the air/water interface. The sample is then retrieved and inspected for floating product, sheen, emulsion, color, and clarity. If floating product is present in the well, the thickness of floating product is measured using an oil/water interface probe and is recorded to the nearest 0.01 foot. Floating product is removed from wells on site visits.

Wells which do not contain floating product are purged using a stainless steel bailer. The bailer is cleaned with Alconox® and water prior to use in each well. The wells are purged of at least four well volumes of water, or until groundwater withdrawal is of sufficient duration to result in stabilized pH, temperature, and electrical conductivity of the water. The groundwater parameters were monitored with a Hydac® Model 910 Conductivity, pH, and Temperature Meter, along with a ICM® Model 11520 Field Turbidimeter. These portable meters were calibrated to a standard buffer and conductivity standard. If the well becomes dewatered, the water level is allowed to recover to at least 80 percent of the initial water level. The wells are allowed to recover to static water-level conditions before sampling.

The quantity of water purged from each well was calculated as followed:

1 well casing volume = $\pi r^2 h$ (7.48) where:

r = radius of the well casing in feet

h = column of water in the well in feet (well depth – depth to water)

7.48 = conversion constant from cubic feet to gallons

Gallons of water purged / gallons in one well casing volume = well casing volumes removed.

Prior to the collection of each groundwater sample, the Teflon® bailer is cleaned with Alconox® and rinsed with tap water and deionized water, and the latex gloves worn by the sampler changed. Hydrochloric acid is added to the sample vials as a preservative (when applicable).

A sample method blank is collected by pouring distilled water into the bailer and then into sample vials. A sample of the formation water is then collected from the surface of the water in each of the wells using the Teflon® bailer. The water samples are then gently poured into laboratory-cleaned, 40-milliliter (ml) glass vials, 500 ml plastic bottles or 1-liter glass bottles (as required for specific laboratory analysis) and sealed with Teflon®-lined caps, and inspected for air bubbles to check for headspace, which would allow volatilization to occur. The samples are then labeled and promptly placed in iced storage. A field log of well evacuation procedures and parameter monitoring is maintained. Water generated by the purging of wells is stored in 17E DOT 55-gallon drums, and floating product bailed from the wells is stored in double containment onsite; this water and product remains the responsibility of the client.

Sample Labeling and Handling

Sample containers are labeled in the field with the job number, sample location and depth, and date, and promptly placed in iced storage for transport to the laboratory. A Chain of Custody Record is initiated by the field geologist and updated throughout handling of the samples, and accompanies the samples to a laboratory certified by the State of California for the analyses requested. Samples are transported to the laboratory promptly to help ensure that recommended sample holding times are not exceeded. Samples are properly disposed of after their useful life has expired.

APPENDIX B

Well Purge Data Sheets (3)

Chain - of - Custody Record (1)

Laboratory Data Sheet (1)

WELL PURGE DATA SHEET

Project Name: Former Minami Nursery Project No. 5107

Project Location: Penny Lane, San Lorenzo Date: September 24, 1996

Monitoring Well No. MW-1 Page 1 of 1

Time (hr)	Gallons (cum.)	pH	Temp. (F)	Conduct. (micromoh)	Turbidity (NTU)
15:23	Begin purging Monitoring Well No. MW-1				
15:23	0	6.90	72.4	7.71	109
15:31	2½	6.79	68.7	7.70	>1,000
15:40	5	6.37	67.6	7.37	>1,000
15:54	7½	6.34	67.2	7.34	>1,000
16:07	10	6.33	67.2	7.32	>1,000
	Stop purging Monitoring Well No. MW-1				
16:10	SAMPLE:	6.35	67.2	7.30	769

Notes:

Depth to Bottom (feet) :	28.0
Depth to Water - initial (feet) :	17.84
Depth to Water - final (feet) :	17.89
% recovery :	99.5%
Time Sampled :	16:10
Gallons per Well Casing Volume :	1.63
Gallons Purged :	10
Well Casing Volumes Purged :	6.15
Approximate Pumping Rate (gpm) :	N/A

WELL PURGE DATA SHEET

Project Name: Former Minami Nursery — Project No. 5107

Project Location: Penny Lane, San Lorenzo — Date: September 24, 1996

Monitoring Well No. MW-2 — Page 1 of 1

Time (hr)	Gallons (cum.)	pH	Temp. (F)	Conduct. (micromoh)	Turbidity (NTU)
11:13	Begin purging Monitoring Well No. MW-2				
11:13	0	7.75	65.8	7.92	263
11:22	2½	6.97	72.2	7.71	>1,000
11:31	5	6.89	71.9	7.54	>1,000
11:41	7½	6.82	68.3	7.39	>1,000
11:54	10	6.84	67.0	7.07	>1,000
	Stop purging Monitoring Well No. MW-2				
12:02	SAMPLE:	6.85	67.3	7.10	606

Notes:

Depth to Bottom (feet) :	32.9
Depth to Water - initial (feet) :	17.59
Depth to Water - final (feet) :	17.63
% recovery :	99.7%
Time Sampled :	12:02
Gallons per Well Casing Volume :	2.45
Gallons Purged :	10
well Casing Volumes Purged :	4.08
Approximate Pumping Rate (gpm) :	N/A

WELL PURGE DATA SHEET

Project Name: Former Minami Nursery — Project No. 5107

Project Location: Penny Lane, San Lorenzo — Date: September 24, 1996

Monitoring Well No. MW-3 — Page 1 of 1

Time (hr)	Gallons (cum.)	pH	Temp. (F)	Conduct. (micromoh)	Turbidity (NTU)
13:31	Begin purging Monitoring Well No. MW-3				
13:31	0	7.11	72.6	7.89	220
13:41	2½	6.91	71.7	7.80	>1,000
13:49	5	6.87	70.9	7.73	>1,000
13:57	7½	6.84	67.8	7.64	>1,000
14:07	10	6.73	66.2	7.59	>1,000
	Stop purging Monitoring Well No. MW-3				
14:17	SAMPLE:	6.73	65.7	7.60	484

Notes:

Depth to Bottom (feet) :	28.5
Depth to Water - initial (feet) :	18.60
Depth to Water - final (feet) :	18.69
% recovery :	99.1%
Time Sampled :	14:17
Gallons per Well Casing Volume :	1.58
Gallons Purged :	10
Well Casing Volumes Purged :	6.33
Approximate Pumping Rate (gpm) :	N/A

PRIORITY ENVIRONMENTAL LABS

Chain of Custody

1764 Houret Ct. Milpitas,CA.95035 Tel:408-946-9636 Fax:408-946-9663

DATE: 9/24/96 PAGE: 1 OF 1

PROJECT MGR [illegible]
COMPANY [illegible]
ADDRESS [illegible] Inc.
[illegible] 95150
PHONE [illegible] FAX 408-265-4335
SIGNATURE [illegible]

SAMPLE ID.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030.8015)	TPH-Gasoline(5030.8015) w/BTEX(EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 C.D&F)	PESTICIDES/PCB (EPA 608.8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	CHLORINATED HYDROCARBONS (EPA 601.8010)										NUMBER OF CONTAINERS
[illegible]	[illegible]	11:57	Water		X							} HOLD									3
[illegible]		11:59				X															1
[illegible]		11:59						X													1
W-MW1		12:00			X																3
W-MW2		12:02				X															1
W-MW2		12:04						X													1
W-MW3		12:17			X																3
W-MW3		12:20				X															1
W-MW2		12:22						X													1
W-MW1		12:13			X																3
W-MW1		12:15				X															1
W-MW1		4:16	✓					X													1

PROJECT INFORMATION	SAMPLE RECEIPT
PROJECT NAME [illegible]	TOTAL # OF CONTAINERS 20
PROJECT NUMBER [illegible]	RECD. GOOD COND./COLD Yes

INSTRUCTIONS & COMMENTS [illegible] Results
to [illegible] 79-2048

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
KEN MATEIK	VICTOR D UONG		
SIGNATURE: Ken Mateik	SIGNATURE: Victor Duong	SIGNATURE:	SIGNATURE:
Date: 9/25/96 Time: 10:27AM	Date: 9/25/96 Time: 10:27	Date: Time:	Date: Time:
COMPANY:	COMPANY: PEI	COMPANY:	COMPANY:

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

September 26, 1996 PEL # 9609057

FULLER EXCAVATING & DEMOLITION, INC.

Attn: Pat Fuller

Re: Three water samples for Gasoline/BTEX, Diesel, and Oil & Grease analyses.

Project name: Minami
Project number: 5107

Date sampled: Sep 24, 1996
Date extracted: Sep 25-26, 1996

Date submitted: Sep 25, 1996
Date analyzed: Sep 25-26, 1996

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
W-MW 1	4700	N.D.	4.5	2.4	12	21	0.8
W-MW 2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
W-MW 3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	90.2%	84.1%	99.1%	92.7%	93.8%	99.1%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602	5520 C & F

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663