

THE SAN JOAQUIN COMPANY INC.
8617 ETCHVERRY DRIVE, TRACY, CALIFORNIA 95376

ENVIRONMENTAL
PROTECTION

October 12, 1998

98 OCT 14 PM 3:54

Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Attention: Mr. Larry Seto

Subject: Remediation at 208 Jackson Street, Oakland, California

Dear Mr. Seto:

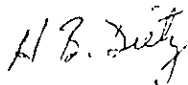
Attached is a revised Remediation Plan incorporating the following:

- o Revisions to clean-up standards directed in your letter to Mr. Johnson dated August 3, 1998 and
- o The location of replacement wells for monitoring wells 4 and 5 destroyed during the excavation which we agreed upon at our site meeting on October 8, 1998. This is per your request in your letter of September 17, 1998.

This plan is submitted for documentation purposes only.

If you have any questions please contact me at (209) 832-2910 or on my mobile at (209) 482-7769.

Sincerely,



H. B. Dietz

HBD/gwd

cc: Scott Johnson, SNK

THE SAN JOAQUIN COMPANY INC.
8617 ETCHEVERRY DRIVE, TRACY, CALIFORNIA 95376

REMEDIATION PLAN
208 JACKSON STREET
OAKLAND, CALIFORNIA

Prepared for:

SNK Development Inc.
185 Berry Street, Suite 1200
San Francisco, California 94107

June 1998

Revision 1 - October 1998

Project No. 9401.112

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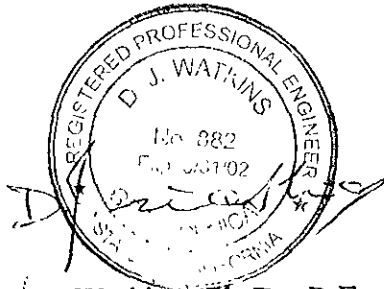
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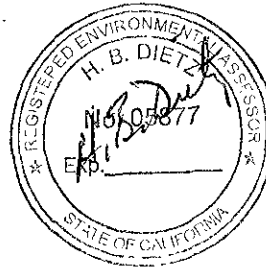
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PROFESSIONAL CERTIFICATION AND LIMITATIONS

This plan was prepared under the direction of the engineers whose seals and signatures appear below. The work was performed in accordance with generally accepted standards of engineering practice based on information available to us at the time of its preparation and within the limits of the scope of work directed by the client. No other representation, express or implied, and no warranty or guarantee is included or intended as to professional opinions, recommendations, or field or laboratory data provided.



D. J. Watkins, Ph.D., P.E.
Geotechnical Engineer
The San Joaquin Company Inc.



H. B. Dietz
REA
The San Joaquin Company Inc.

INTRODUCTION

Extensive investigation, characterization and remediation planning has been conducted by a variety of consultants on the site at 208 Jackson Street, Oakland, California (See Figure 1 for location). The work was of good quality and has formed the basis for development of this remediation plan. Key information has been extracted from that prior work for preparation of this plan and its source has been referenced. These reports have been previously sent to the regulatory agencies. It would serve no useful purpose to redo the work which has already been done. Since the site is scheduled for redevelopment it is now time to cease the studies, investigations and characterization work and immediately proceed with remediation to achieve site closure.

BACKGROUND

Site History

The site (See Figure 2) which incorporates the block between 2nd and 3rd Streets and Jackson and Madison Street was originally developed in the early 1890's for residential housing. The neighborhood remained residential until about 1911 at which time the Union Pacific Railroad began acquiring the area for use as a rail yard. The residential nature of the neighborhood rapidly changed to a rail yard and industrial area by 1930. A trucking company occupied the south-west corner of the site. A meat packing facility was constructed on the remainder of the property. Earliest maps available show residential housing in 1911 and the trucking company and meat packing plant present in 1950. It is not known when the four tanks previously located on the site, (See Figure 2) were installed. Sometime after 1945 the John Morrell and Company built a meat packing plant occupying the majority of the site. In 1990 the site owner, East Bay Packing Company, who by this time occupied the entire block, sold the property and just prior to the sale removed four underground storage tanks, two diesel and two gasoline tanks. The tank sizes are as follows: 8,000 gallon, 2,000 gallon, 10,000 gallon and 10,000 gallon. At the time of tank removal, the site was identified as a site of leaking underground storage tanks. The San Francisco Bay Regional Water Quality Control Board file number for this site is 01-0533.

Planned Use For The Site

SNK Development Inc intends to demolish the present structures and construct a multi story office building on the site.

GEOLOGY AND HYDROLOGY

The site is situated on the eastern side of San Francisco Bay in the California Coast Ranges section of the Pacific Border physiographic province. Immediately beneath the man made surface is the Pleistocene-age Merritt sand, which has an estimated thickness of approximately 50 feet. The Merritt sand is composed of fine-grained, silty, clayey sand with lenses of sandy clay and clay.

The water table at the site is encountered at 4 to 6 feet beneath the ground surface and below the top of the Merritt sands. The general down gradient flow direction is south toward the Oakland estuary. Soils with the grain size and gradational properties of the fine Merritt sands commonly have hydraulic conductivities in the range of 10^{-5} - 10^{-6} cm/sec. It is likely that the hydraulic conductivity of the natural soils beneath the site may be as low as 10^{-6} cm/sec.

SITE CHARACTERIZATION RESULTS

At the time of underground storage tank removal in 1990, soil samples from beneath the tanks revealed the presence of Total Petroleum Hydrocarbon (TPH) as gasoline and TPH as diesel in the soil and in a grab sample of the groundwater. In May of 1990 three groundwater monitoring wells and in June 1994 two additional monitoring wells were installed. See Figure 2. The results from the groundwater monitoring well sampling are reproduced in Table 1.

These monitoring wells also provided the ability to determine the groundwater gradient. See Table 2 and Figure 3. In 1995 soil borings were performed to further characterize the site. The location of these soil borings are shown in Figure 4. The sample results from the soil borings are shown in Tables 3 and 4. Based on the results of the soil borings and groundwater monitoring, estimated contours for concentrations of components of fuel hydrocarbons affecting groundwater were developed. These are reproduced in Figures 5, 6 and 7.

The results of the site characterization indicate the presence of hydrocarbon affected soil in the south-west corner of the site which is providing a source for hydrocarbons in groundwater. Since the depth to groundwater from the surface varies between 4 to 6 feet (See Table 5) the principal zone of hydrocarbon affected soil generally would not be deeper than 7 feet.

PLAN FOR REMEDIATION

Install Replacement Monitoring Wells

Two replacement monitoring wells will be installed in the street pending City of Oakland approval (encroachment permit) and their exact location will be dependent upon the presence of underground utilities. These new wells which replace MW4 and MW5 will be used to monitor improvements to the groundwater quality achieved by removal of the source term. See Figure 8 for location of proposed new monitoring wells. It is anticipated that these wells would be monitored for four quarters and then formally closed.

Close Existing Monitoring Wells

The Alameda County Public Health Services Department (ACPHSD) has approved closure of two (MW2 and MW3) of the existing upgradient monitoring wells (see Reference 1) because they have been monitored for a significant period of time and have shown no impact from the previously identified hydrocarbon release from the leaking underground storage tanks. These two wells will be closed by grouting. One well (MW-1) which was originally installed was

destroyed during over excavation of the tank pit. The remaining two wells (MW-4 and MW-5) will be destroyed during excavation of the hydrocarbon affected soil and, therefore, must be formally closed prior to the start of excavation.

Demolition of Steel Buildings on South-west Corner of Site

A demolition permit will be obtained from the City of Oakland prior to demolition of the metal buildings located on the south-west corner of the site. These buildings are steel frame covered with galvanized siding. A pre-demolition asbestos survey performed in April 1998 (see Reference 2) determined that there is no asbestos present in these buildings. Removal is necessary to permit excavation of the soil beneath the buildings which has been affected by hydrocarbons from the previously installed gasoline and diesel underground storage tanks. The demolition debris will be removed from the site.

Site Paving Removal

The concrete floor and footings from the steel building to be demolished, the reinforced concrete located in the yard, the asphalt paving and any other debris in the yard will be removed prior to the start of soil remediation. The clean concrete and asphalt will be shipped off site for recycling.

Excavate Clean and Hydrocarbon Affected Soil

The anticipated area to be excavated is shown on Figure 9. The procedure will be as follows: 1) Excavate the clean soil and stockpile in one area of the site. 2) Excavate hydrocarbon affected soil, which is expected to be present up to 7 feet beneath the surface, and 3) stockpile in preparation for aeration and bioremediation soil treatment on site. The cleanup standard with respect to soil remaining in the excavation will be 100mg/Kg (parts per million - ppm) for TPH as gasoline, 1000 ppm TPH as diesel and 0.016 mg/Kg for benzene.

Sampling will proceed in conjunction with excavation, and when the in situ soil remaining in the excavation meets the cleanup standards, excavation in the area will cease. The depth of the excavation will also be limited if, in the opinion of the professional engineer in charge of the work, further deepening of the remediation pit would pose a threat of bottom heave, sand liquefaction or other geotechnical phenomenon that might render the site or adjacent streets unstable. It is expected that the walls of the excavation will not approach closer than 5 feet to the back of the sidewalks on Madison and Second Streets.

Soil Treatment

Prior to the start of soil treatment, the San Francisco Bay Area Air Quality Management District (SFBAQMD) will be notified. The hydrocarbon affected soil containing TPH as gasoline and TPH as diesel will be treated by a combination of aeration and bioremediation. Based on

SFBAAQMD permitted concentrations in the stockpile, the soil will be spread on the site to a thickness of approximately 12 to 18 inches.

A farm tractor equipped with a large rotivator will be used for soil conditioning during the aeration and bioremediation. Depending on the concentration of diesel in the affected soil a sprinkler system using micro sprinklers may be installed for moisture control. The naturally occurring biota in the soil will be used for the bioremediation. The proper amounts of moisture and fertilizer will be added. Oxygen will be supplied by aeration using the soil treatment equipment. If moisture is required water will be pumped from the excavation and stored in a 20,000 gallon Baker tank which will be maintained on the site. This will also assist in reducing the hydrocarbon concentration in the groundwater by actually using hydrocarbon affected groundwater for moisture control during bioremediation. Based on the concentrations, temperature and aggressiveness of the treatment samples will be periodically taken. The clean up standard for soil will be less than 100 ppm TPH as gasoline, 1000 ppm TPH as diesel and non detectable for benzene, toluene, ethyl benzene or xylene.

When the treated soil is free of visual or olfactory indicators of fuel hydrocarbons, samples will be recovered from randomly selected locations in the spread material and analyzed for TPHg, TPHd, benzene, toluene, ethylbenzene and total xylene isomers. Computation of the number of samples required, the procedures for selecting the random sampling locations, and the statistical methods employed to demonstrate that the aeration and bioremediation has reduced the concentrations of fuel hydrocarbons to less than the proposed cleanup levels will adhere to the guidelines published in the technical document: *Methods of Evaluating the Attainment of cleanup standards, Vol. 1: Soils and Solid Media*, published by the United States Environmental Protection Agency. (Ref. 3)

If the results from the first sampling of the aerated and bioremediated soil show that the concentration of any analyte of concern exceeds the established cleanup criteria, the spread soil will be further bioremediated and re-sampled until sampling demonstrates that the cleanup criteria have been met.

Site Restoration

Once the soil removed for treatment has attained the clean up standard and approved by Alameda County, the excavation will be readied for soil placement. To insure stability in the excavation, rock will be added to stabilize the hole to the water line. The rock will be compacted to provide a firm base for soil compaction. The soil removed from the surface will be conditioned to achieve proper moisture content, placed in the hole and compacted to achieve an 90 percent relative density. Compaction test results will be included in the final report. The final grade will be determined by the new building foundation design.

Request for Closure

A report documenting the results of the site remediation that will include a Risk Based Correction Action Assessment in accordance with American Society of Testing and Materials (ASTM E 1739-95) will be prepared for submittal to Alameda County Health Care Services, the responsible regulatory authority. This report together with the results of a round of sampling in the newly installed monitoring wells will provide the basis for site closure.

RELEASE FOR CONSTRUCTION

The site will be released for construction following completion of the removal of the hydrocarbon source, the treatment of the soil and restoration of the site. Additional groundwater monitoring in the relocated monitoring wells may be required for four quarters to verify continuing natural attenuation due to removal of the hydrocarbon source.

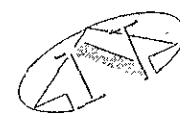
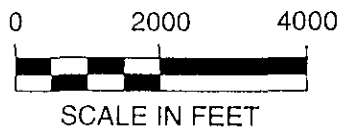
HEALTH AND SAFETY PLAN

Work will be performed in accordance with the Site Specific Health and Safety Plan attached.

REFERENCES

1. Letter from Alameda County Health Care Services Agency, Environmental Protection Division (ACHCSA) *Former East Bay Packing Site, cka Wo Lee Foods, 208 Jackson Street, Oakland, California 94607* dated September 24, 1997.
2. M. F. Lundeen Company *Asbestos Material Survey, 208 Jackson Street, Oakland, California*, prepared for The San Joaquin Company, April, 1998.
3. United States Environmental Protection Agency (1989): *Methods of Evaluating the Attainment of Cleanup Standards, Vol. 1: Soils and Solid Media*. Report No. EPA 230/02-89-042, February, 1989.
4. ACC Environmental Consultants *Corrective Action Plan Wo Lee Food 208 Jackson Street, Oakland, California* dated July 9, 1996.
5. ACC Environmental Consultants *Biannual Groundwater Monitoring Report* dated October 24, 1997.
6. Letter from Alameda County Health Care Services Agency, Environmental Protection Division (ACHCSA) *Former East Bay Packing Site, cka Wo Lee Foods, 208 Jackson Street, Oakland, California 94607* dated March 17, 1997.
7. Subsurface Consultants, Inc. *Additional Recommendations Environmental Engineering Services 208 Jackson Street, Oakland, California* dated January 13, 1994.

8. ACC Environmental Consultants *Stockpiled Soil Sampling Wo Lee Food Company 208 Jackson Street, Oakland, California* dated April 4, 1997.
9. American Society for Testing and Materials (ASTM). November 1995. *Standard Guide for Risk Based Corrective Action Applied at Petroleum Release Sites*. Designation: E 1739-95. ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428.
10. Subsurface Consultants, Inc. July 12, 1994. *Groundwater Contamination Assessment, 208 Jackson Street, Oakland, California*. Project Number 886.001.
11. ACC Environmental Consultants, Inc. May 22, 1995. *Subsurface Environmental Investigation, 208 Jackson Street, Oakland, California*. Project Number 95-6238-1.0. Prepared for Wo Lee Foods.



Basemap: AAA; Oakland-Berkeley-Alameda (2/91)

SITE LOCATION
 208 Jackson Street, Oakland, California

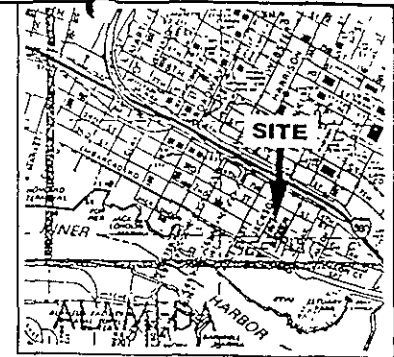
FIG 1

The San Joaquin Company, Inc.





Project Number: 9401.112

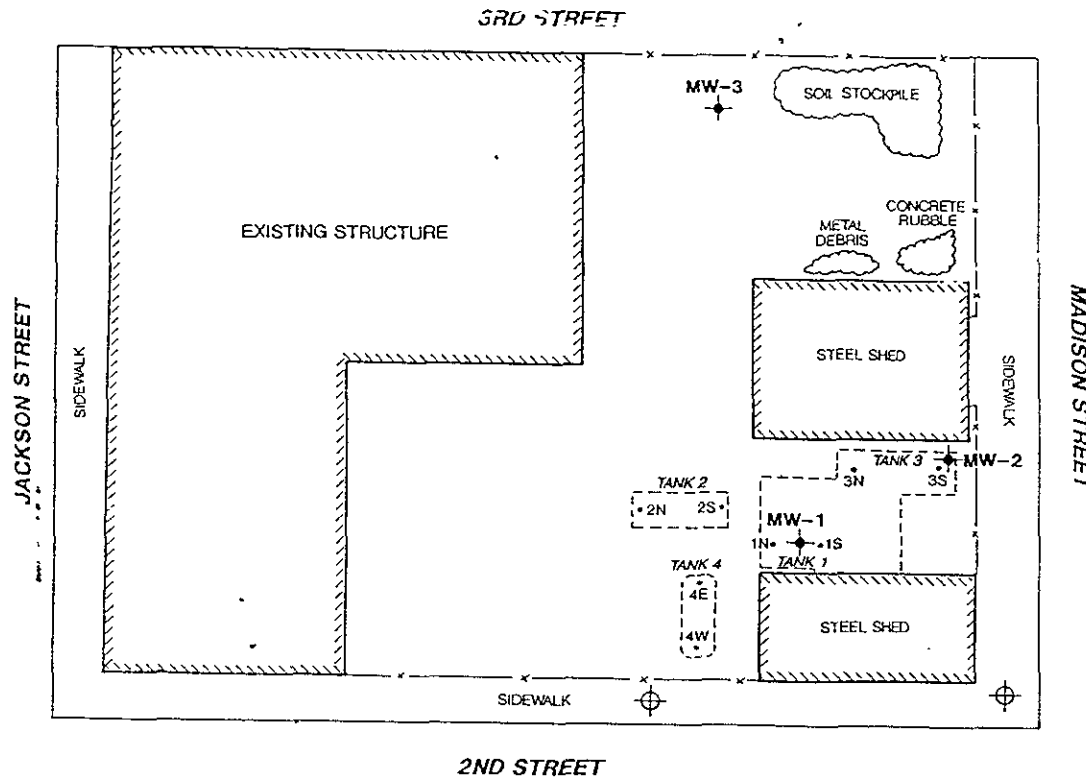
Drawn by: GNM

Date: 05/20/98

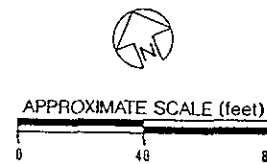


VICINITY MAP

-  APPROXIMATE LOCATION OF MONITORING WELLS INSTALLED BY OTHERS (NOTE WELL MW-1 WAS NOT LOCATED)
-  APPROXIMATE LOCATION OF SOIL SAMPLE RECOVERED DURING TANK REMOVAL
-  LOCATION OF REMOVED CONCRETE PAVEMENT
-  PROPOSED LOCATION OF ADDITIONAL GROUNDWATER MONITORING WELLS



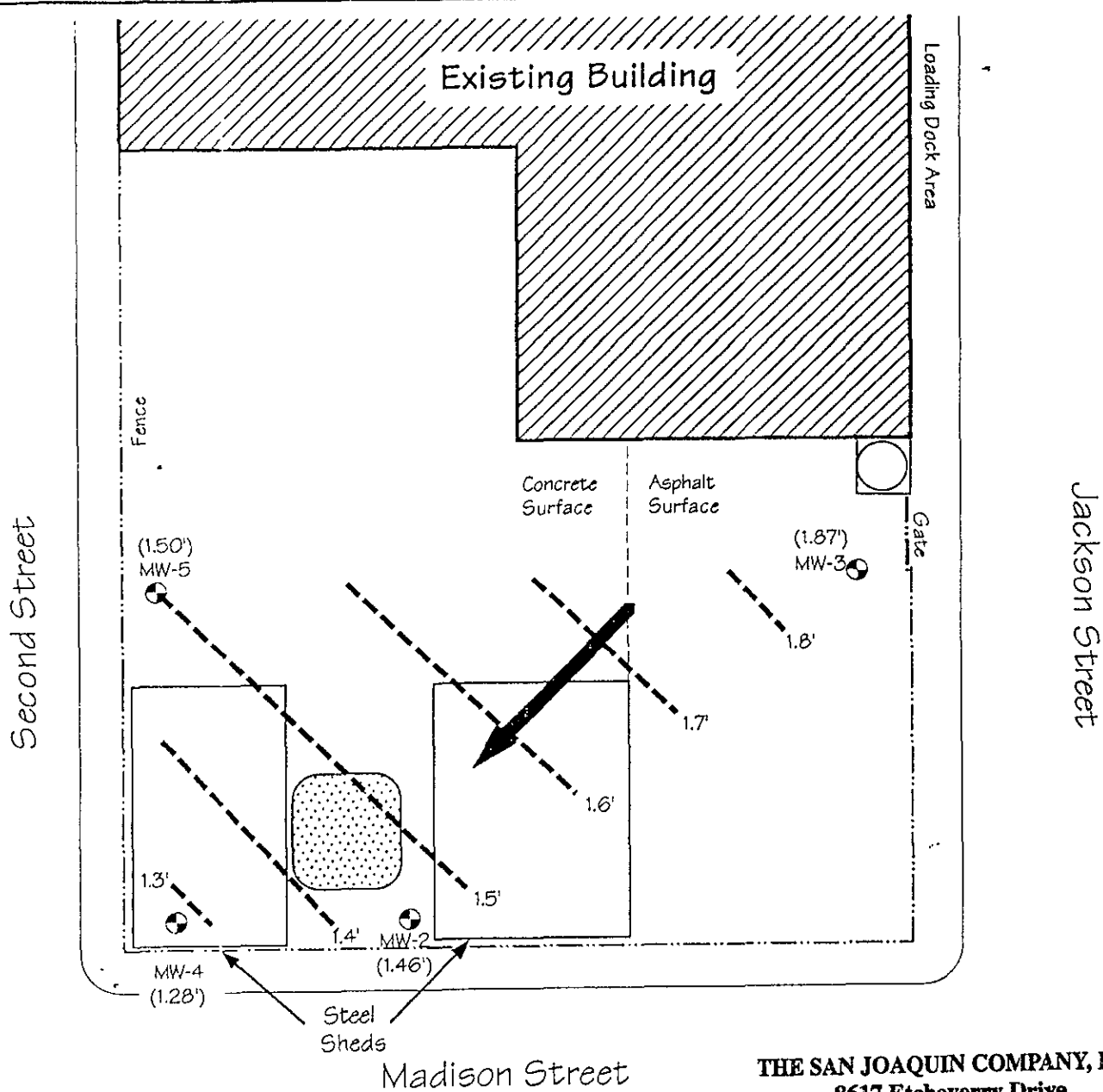
- Tank 1 10,000 gallon
- Tank 2 8,000 gallon
- Tank 3 10,000 gallon
- Tank 4 2,000 gallon



SITE PLAN		
Subsurface Consultants	208 JACKSON STREET - OAKLAND, CA	PLATE 1 _A
JOB NUMBER 885 001	DATE 1/5/94	APPROVED SL

Figure 2

THE SAN JOAQUIN COMPANY, INC.
 8617 Etcheverry Drive
 Tracy, CA 95376



THE SAN JOAQUIN COMPANY, INC.
 8617 Etcheverry Drive
 Tracy, CA 95376

Legend

- Existing Groundwater Monitoring Well
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction
- Open Excavation

Groundwater levels measured on October 1, 1997

Title: Gradient Map Wo Lee Food 208 Jackson Street Oakland, California	
Figure No: 3	Scale: 1" = 40'
Drawn By: JYC/DRD	Date: 10/20/97
Project No: 6238-001.02	
ACC Environmental Consultants, Inc. 7977 Capwell Drive, Suite 100 Oakland, CA 94621 (510)638-8400 Fax (510)638-8404	

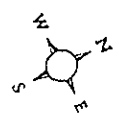


Figure 3
Groundwater Gradient

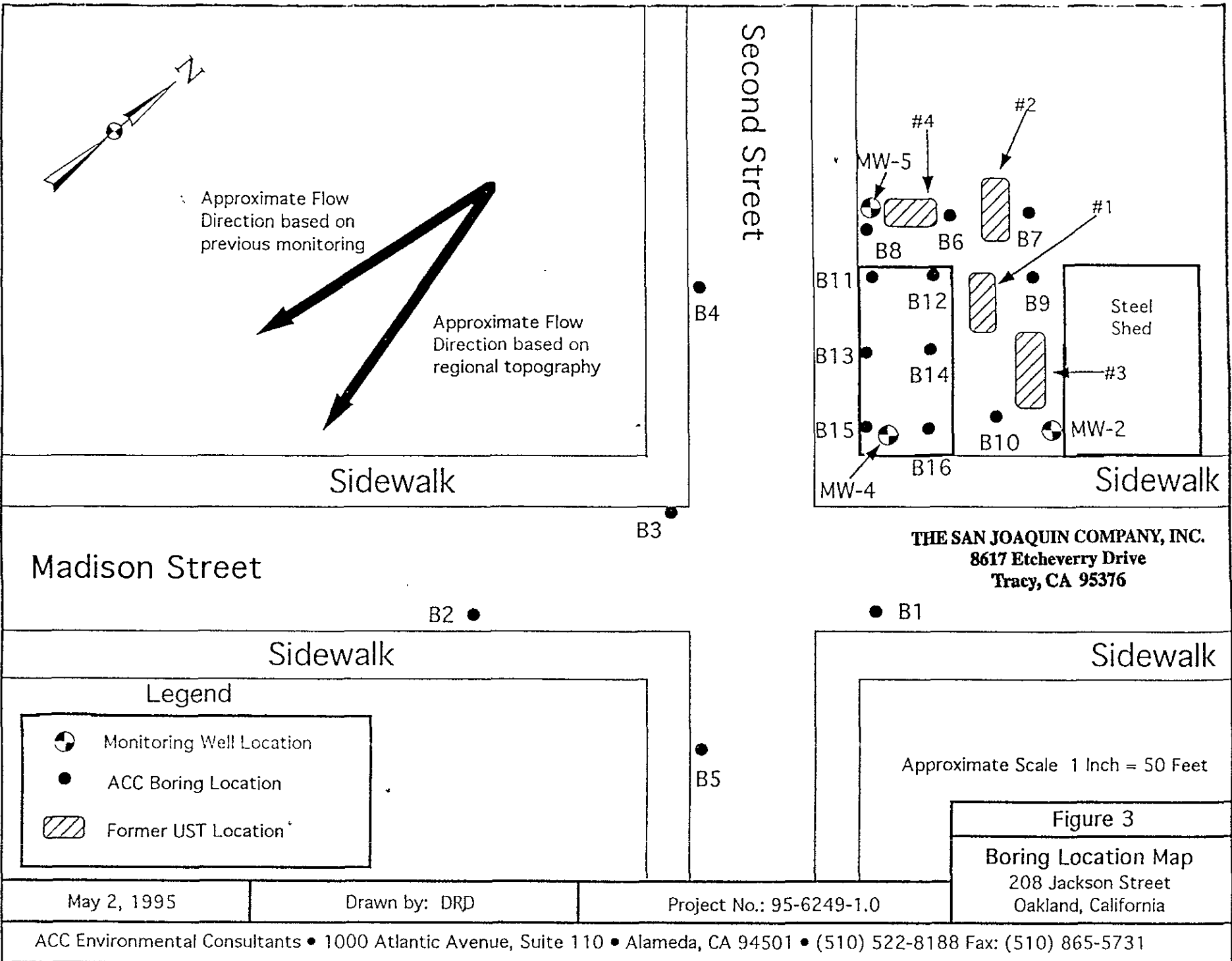


Figure 4
 Location of Soil Borings

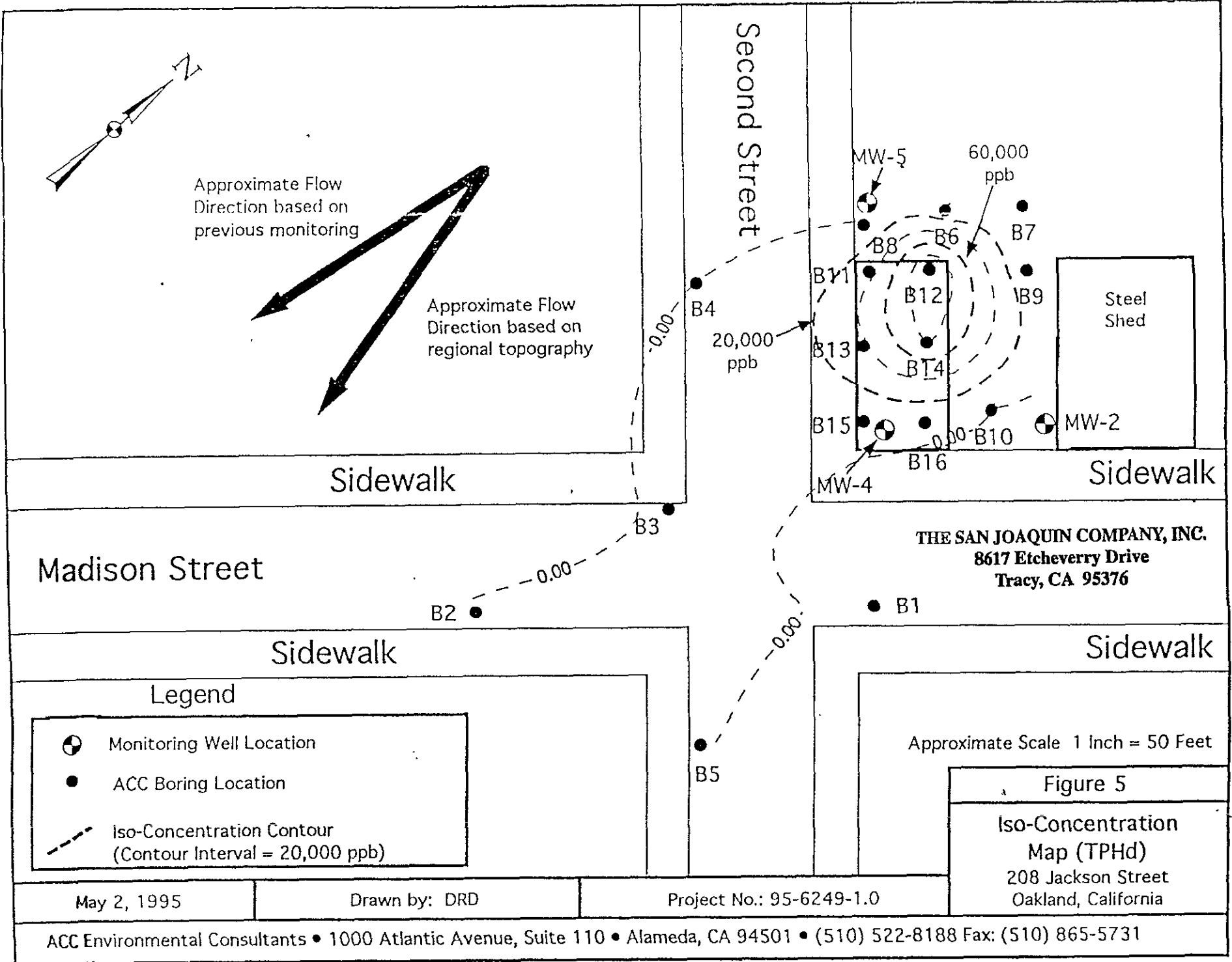


Figure 5

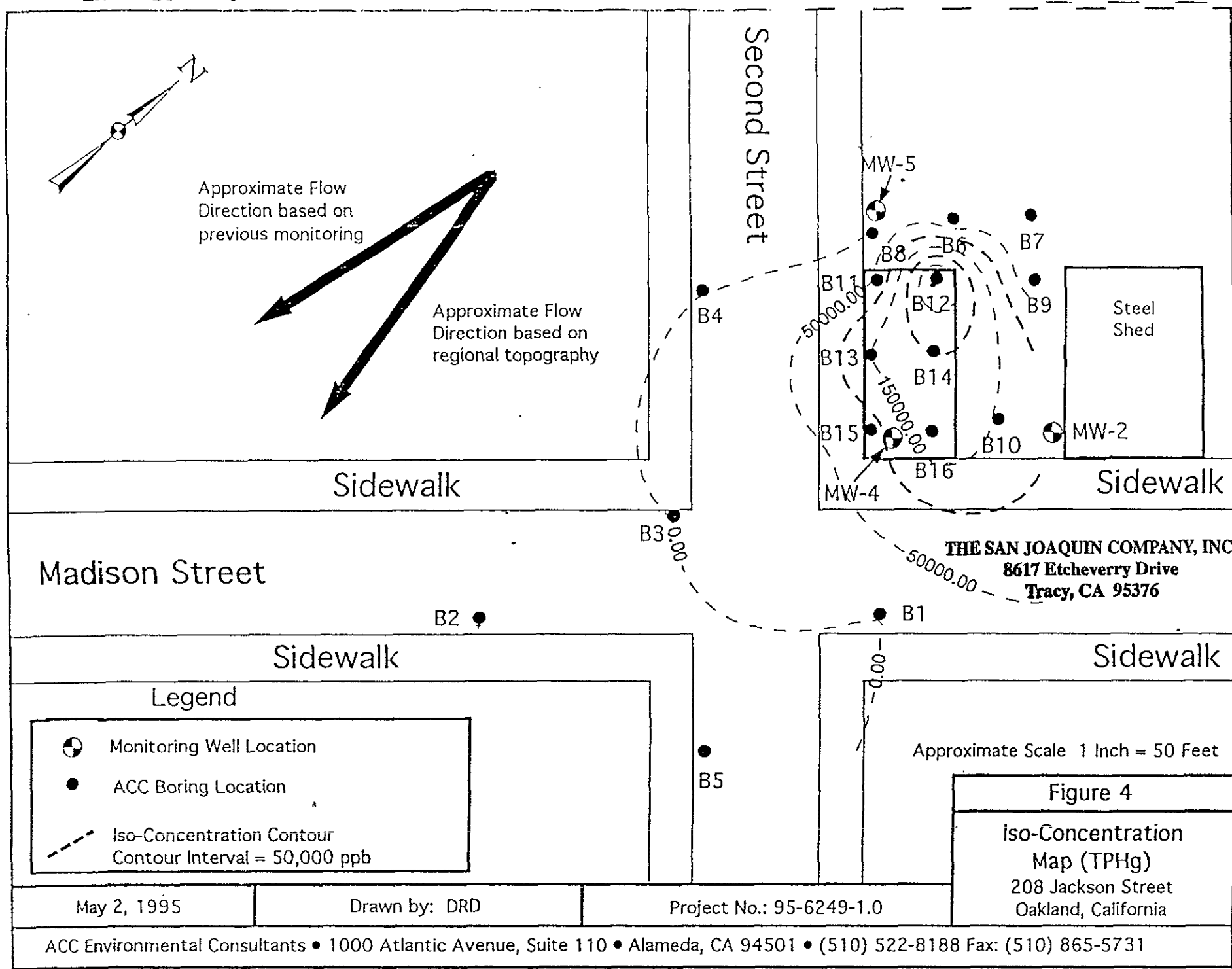


Figure 6

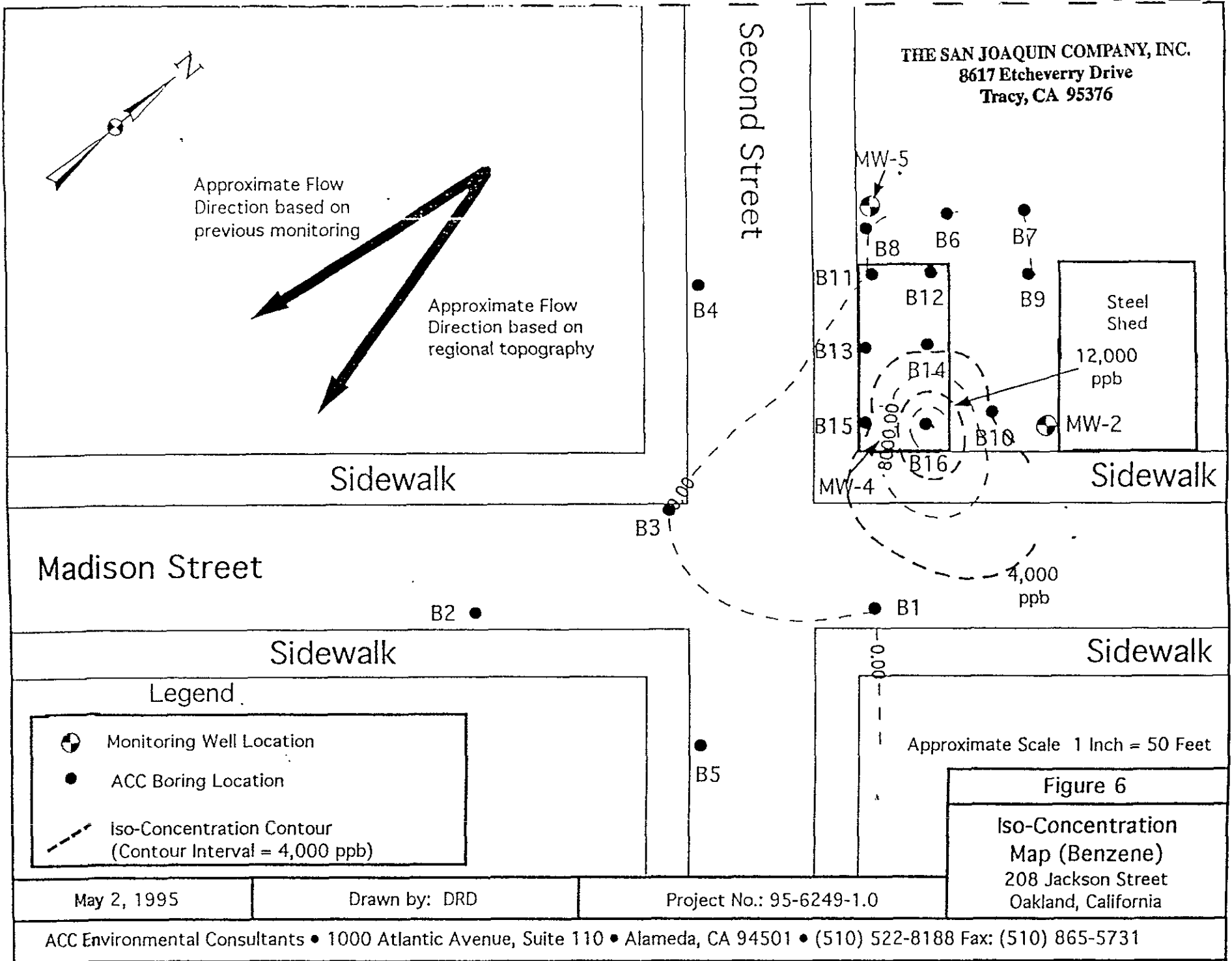


Figure 7

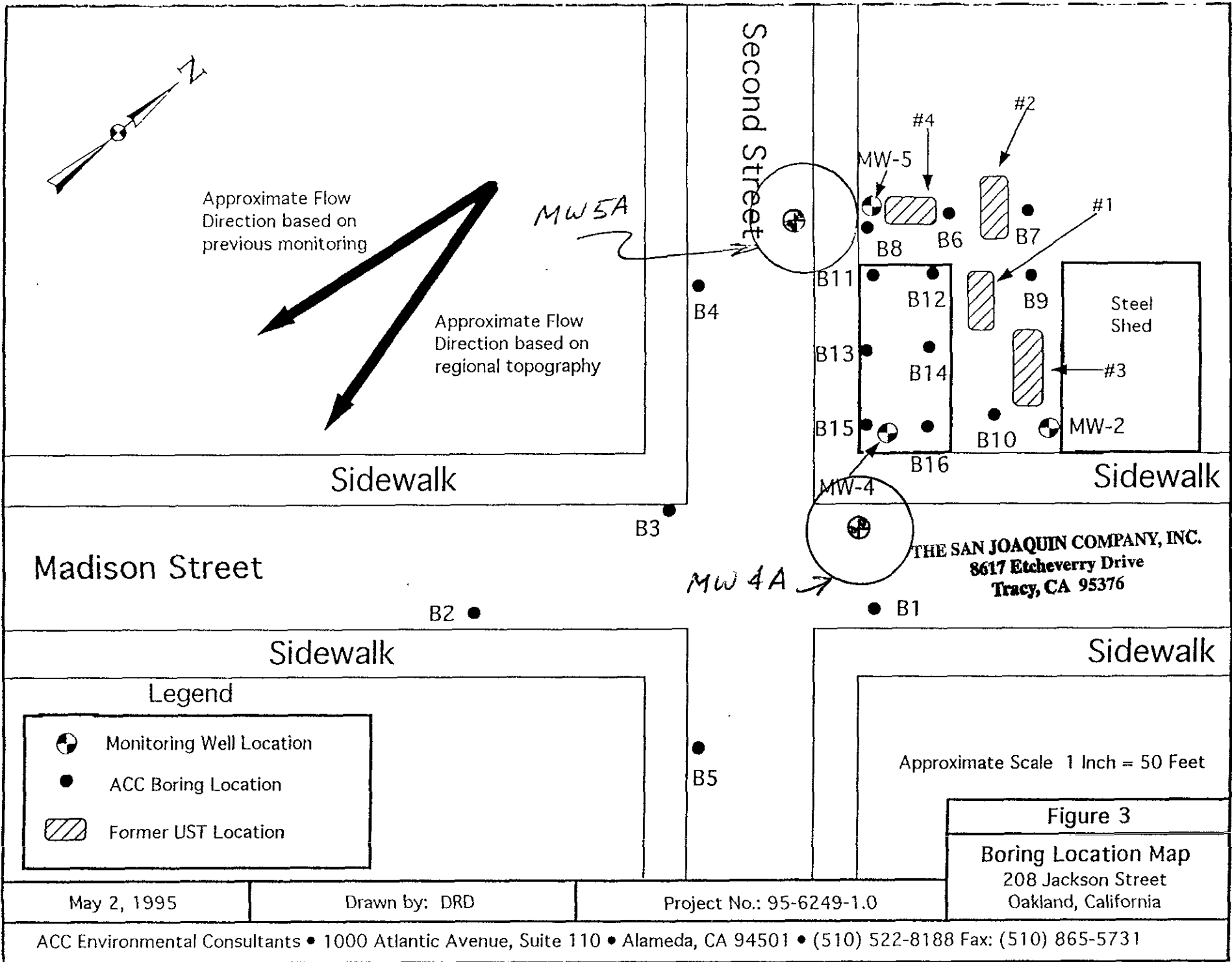
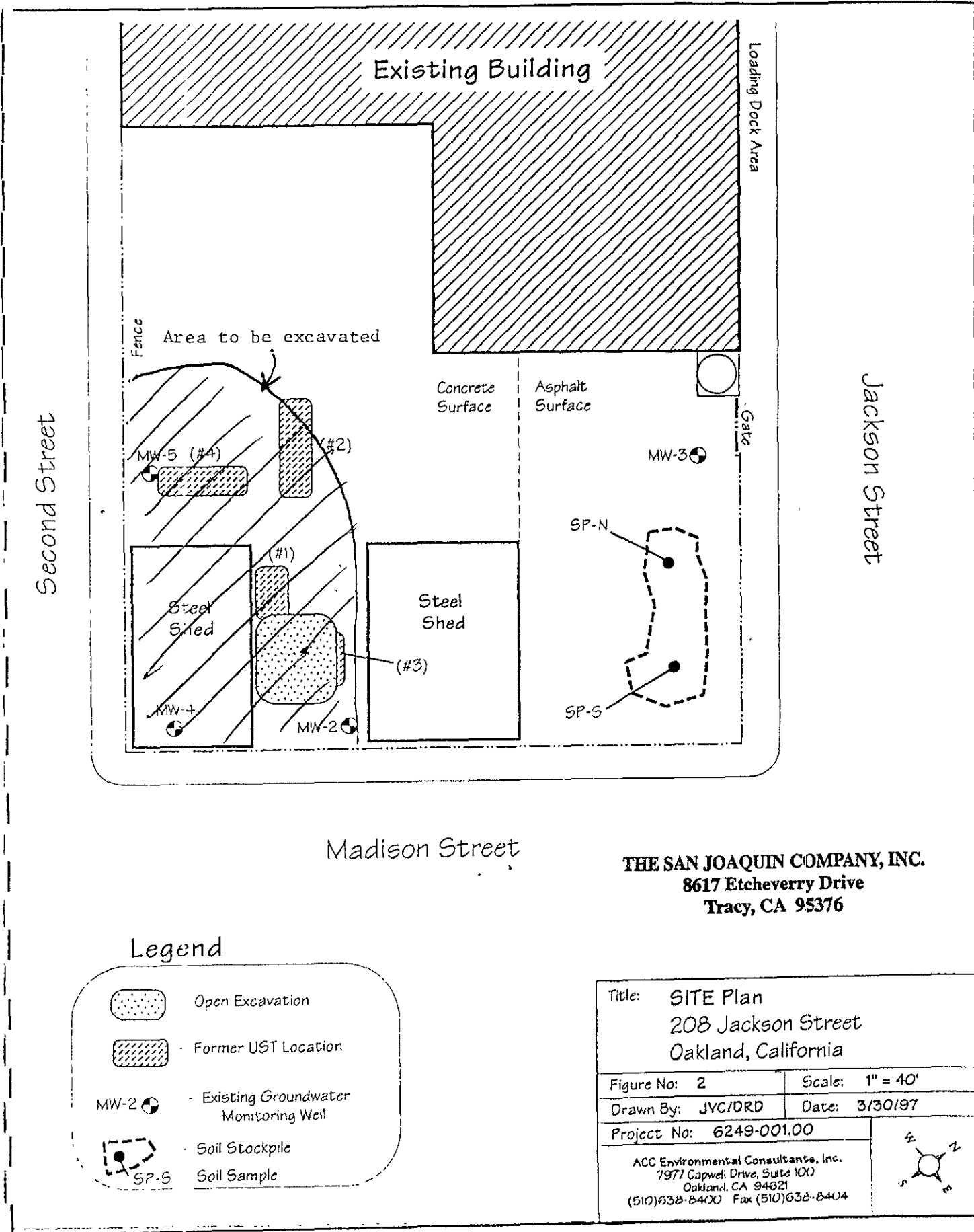







Figure 8 Location of replacement monitoring wells



Madison Street

THE SAN JOAQUIN COMPANY, INC.
 8617 Etcheverry Drive
 Tracy, CA 95376

Legend

-  Open Excavation
-  Former UST Location
-  Existing Groundwater Monitoring Well
-  Soil Stockpile
-  Soil Sample

Title: SITE Plan 208 Jackson Street Oakland, California	
Figure No: 2	Scale: 1" = 40'
Drawn By: JVC/DRD	Date: 3/30/97
Project No: 6249-001.00	
ACC Environmental Consultants, Inc. 7977 Capwell Drive, Suite 100 Oakland, CA 94621 (510)638-8400 Fax (510)638-8404	

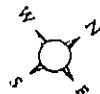


Figure 9:
 Area Planned for Excavation

TABLE 1 - MONITORING WELL SAMPLE RESULTS
Taken from Reference 5

Well No.	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPHd (µg/L)	MTBE (µg/L)
MW-1 (destroyed)	05/21/90	25,000	400	440	330	650	5,500	---
MW-2	05/21/90	<50	<1.0	<1.0	<1.0	<1.0	<50	---
	01/06/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	09/04/96	<50	<0.5	<0.5	<0.5	<0.5	<50	<5.0
	03/21/97	<50	<0.5	<0.5	<0.5	<0.5	<50	<5.0
	10/01/97	---	---	---	---	---	---	---
MW-3	05/21/90	<50	<1.0	<1.0	<1.0	<1.0	<50	---
	01/06/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/03/94	<50	<0.5	<0.5	<0.5	<0.5	230 ⁽¹⁾	---
	09/04/96	<50	<0.5	<0.5	<0.5	<0.5	<50	<50
	03/21/97	<50	<0.5	<0.5	<0.5	<0.5	<50	<5
	10/01/97	---	---	---	---	---	---	---
MW-4	06/03/94	210,00	7,600	28,000	3,700	24,000	9,800	---
	09/04/96	0	5,100	4,600	4,100	14,000	<50	<500
	03/21/97	45,000	5,000	6,300	4,600	14,000	<50	<250
	10/01/97	58,000 48,000	5,000	3,800	3,900	12,000	<260	<250
MW-5	06/03/94	7,800	3.8	6.2	10	16	4,600	---
	09/04/96	1,600	14	3.6	9.7	13	<50	<5
	03/21/97	430	4.2	<0.5	1.4	0.62	690 ⁽²⁾	<5
	10/01/97	1,100	0.7	1.1	1.2	1.9	1,800 ⁽²⁾	<5

Notes: (1) Reported to be an anomalous result from one chromatogram peak
(2) Hydrocarbon reported does not match laboratory diesel standard

THE SAN JOAQUIN COMPANY, INC.
8617 Etcheverry Drive
Tracy, CA 95376

TABLE 2 - GROUNDWATER GRADIENT DATA
Taken from Reference 5

Date Monitored	Average Gradient (foot/foot)	Direction
September 9, 1995	0.004	south-southeast
October 27, 1995	0.003	south
November 30, 1995	0.003	south
September 4, 1996	0.003	south
March 21, 1997	0.007	south
October 1, 1997	0.003	south

THE SAN JOAQUIN COMPANY, INC.
8617 Etcheverry Drive
Tracy, CA 95376

TABLE 3 - SOIL BORING SOIL SAMPLE RESULTS
Taken from Reference 4

Sample # - depth	Date Collected	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Xylenes (mg/kg)	TPHd (mg/kg)
B1-4.0	3/21/95	<1	<0.005	<0.005	<0.005	<0.005	1.3
B2-4.0	3/21/95	<1	<0.005	<0.005	<0.005	<0.005	5.4
B3-4.0	3/21/95	<1	<0.005	<0.005	<0.005	0.013	<1
B4-4.0	3/21/95	<1	<0.005	<0.005	<0.005	0.014	<1
B5-4.0	3/21/95	<1	<0.005	<0.005	<0.005	0.019	<1
B6-4.0	3/21/95	<1	<0.005	<0.005	<0.005	0.013	<1
B7-4.0	3/21/95	1.7	0.040	0.011	0.0074	0.029	<1
B8-4.0	3/21/95	2.9	0.026	0.012	0.030	0.091	94
B9-3.5	3/21/95	<1	<0.005	<0.005	<0.005	<0.005	<1
B10-3.5	3/21/95	2,300	5.3	26	40	200	71
B11-3.5	3/22/95	<1	<0.005	<0.005	<0.005	<0.005	1.4
B12-3.5	3/22/95	22	0.023	0.43	0.21	3.6	1,100
B13-3.5	3/22/95	2,700	1.9	3.9	34	210	66
B14-3.5	3/22/95	4.2	<0.005	0.044	0.024	0.25	<1
B15-3.5	3/22/95	710	1.5	0.40	1.3	7.6	5.6
B16-3.5	3/22/95	270	2.2	25	9.6	59	1,200

Notes: mg/kg = milligram per kilogram, approximately equal to parts per million (ppm)
< = Less than detection limit indicated

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TABLE 4 - GRAB GROUNDWATER SAMPLE RESULTS FROM SOIL BORINGS
Taken from Reference 4

Sample No.	Boring Number	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPHd (µg/L)
W1	B1	<50	<0.5	<0.5	<0.5	<0.5	<50
W2	B2	53	0.56	<0.5	<0.5	1.4	170
W3	B3	<50	<0.5	<0.5	<0.5	<0.5	140
W4	B4	<50	<0.5	<0.5	<0.5	<0.5	<50
W5	B5	<50	<0.5	<0.5	<0.5	<0.5	170
W6	B6	<50	<0.5	<0.5	<0.5	<0.5	160
W7	B7	<50	1.0	0.52	<0.5	1.2	<50
W8	B8	<50	<0.5	<0.5	<0.5	<0.5	320
W9	B9	78	2.1	<0.5	<0.5	5.3	--
W10	B10	140,000	2,100	7,700	4,600	27,000	--
W11	B11	46,000	55	36	570	3,500	33,000
W12	B12	330,000	1,200	27,000	9,700	61,000	100,000
W13	B13	150,000	1,100	5,500	6,200	37,000	38,000
W14	B14	200,000	2,700	61,000	5,900	37,000	84,000
W15	B15	72,000	2,300	3,600	5,200	27,000	5,500
W16	B16	200,000	22,000	69,000	6,300	39,000	6,200

Notes: < = Less than detection limit indicated

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TABLE 5 - GROUNDWATER DEPTH INFORMATION
Taken from Reference 5

Well Number	Date Measured	Casing Elevation (MSL)	Groundwater Depth (feet)	Groundwater Elevation (MSL)
MW-2	09/26/95	6.64	5.20	1.44
	10/27/95		5.11	1.53
	11/30/95		5.19	1.45
	09/04/96		5.05	1.59
	03/21/97		4.31	2.33
	10/01/97		5.18	1.46
MW-3	09/26/95	7.71	5.71	2.00
	10/27/95		5.81	1.90
	11/30/95		5.90	1.81
	09/04/96		5.64	2.07
	03/21/97		5.03	2.68
	10/01/97		5.84	1.87
MW-4	09/26/95	6.74	5.39	1.35
	10/27/95		5.43	1.31
	11/30/95		5.51	1.23
	09/04/96		5.28	1.46
	03/27/97		4.67	2.07
	10/01/97		5.46	1.28
MW-5	09/26/95	6.73	5.14	1.59
	10/27/95		5.17	1.56
	11/30/95		5.26	1.47
	09/04/96		5.11	1.62
	03/21/97		4.32	2.41
	10/01/97		5.23	1.50

Notes: All measurements in feet relative to MSL

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PROJECT - SPECIFIC HEALTH AND SAFETY PLAN

Project Name: Remediation - 208 Jackson Street, Oakland California

Project No.: 9401.112

Client: SNK Development Inc

**Contractor's
Project Manager:** H. B. Dietz, REA
Telephone: (209) 832-2910
(209) 482-7769 - Site Mobile Phone

Project Location: 208 Jackson Street, Oakland, California

Project Description:

Remediation of soil affected by gasoline and diesel will be performed by Dietz Irrigation, a licensed general engineering contractor with a hazardous waste sub license. The scope of work includes closure of monitoring wells, installation of replacement monitoring wells, excavation of gasoline and diesel affected soil, on site treatment of affected soil by aeration and bioremediation, backfilling of remedial excavation and compaction during backfill in preparation for site redevelopment. The work will be performed in accordance with the *Remediation Plan - 208 Jackson Street, Oakland, California* to which this Site Specific Health and Safety Plan is an attachment. The remediation plan including the Dietz Irrigation master Health and Safety Plan have been submitted to the Oakland Fire Department who is the controlling agency for this remediation. The location of the remedial excavation and areas where contaminated soil may be stockpiled and treated are shown on Figure 9 of the *Remediation Plan*.

Known Hazards:

The principal hazards that are expected to be encountered on this project are those common to demolition of a small steel framed, sheet metal clad building, shallow excavation and general construction work. It is expected that low to moderate concentrations of components of gasoline and diesel fuel will be present in the excavated soil. Underground utilities will be disconnected on site prior to the start of work but underground utilities in the area of the installation of replacement monitoring wells must be carefully located and avoided.

Specific Constructions Hazards

The construction hazards expected to be encountered on this work are those normally associated with demolition of a small steel framed metal clad building, shallow excavation work and the operation of heavy machinery. They include the potential for trauma by suffocation due to burial if the excavation were to collapse, traumatic injury by impact from trucks or heavy machinery, pinching injuries of the extremities, entanglement of extremities and clothing in rotating machinery, injury from falling objects, exposure to noise from machinery, tripping hazards and strains due to lifting heavy objects.

Chemical Hazards

Soil in the subsurface beneath parts of the subject property have been contaminated by a release of fuel hydrocarbons. Local concentrations of total petroleum hydrocarbons quantified as diesel (TPHd) in soil in the subsurface were measured at 1100mg./Kg. (ppm) and concentrations of hydrocarbons quantified as gasoline (TPHg) in soil were measured at 2700mg./Kg. (ppm).

Specific Health and Safety Requirements:

The work required for this project does not involve special hazards beyond those covered by the requirements of the Dietz Irrigation *Master Health and Safety Plan* that is incorporated herein by reference and a copy of the current edition of which has been submitted to the Oakland Fire Department. All Work will be conducted in compliance with the applicable policies, safety rules and safe working practices set out in the *Master Plan*. However, for emphasis, the following specific requirements are cited:

Security of Underground Utilities

All utilities in and around the area to be excavated or where monitoring wells will be installed will be located by USA Alert before work is started. The utilities supplying the site will be turned off and secured before any remediation work begins.

Excavation Safety

No personnel shall enter any excavation that has a depth greater than five feet, unless it has been properly shored in compliance with OSHA regulations, or its sides have been sloped back and the excavation approved for entry by a California licensed geotechnical engineer. No spoil or construction materials shall be stockpiled within five feet of the edge of any excavation. The remedial excavation will be restored by backfilling as soon as possible after soil treatment has been completed. During soil treatment the excavation will be backfilled with rock to slightly above the surface of the water table for excavation stability.

Site Access Control

The site is on industrial property that has been vacated and is fenced around its perimeter with chain link fencing. Access to the site will be controlled by lockable gates six foot high and a chain link fence 6 foot high. No persons, vehicles or equipment other than those directly engaged in the work or authorized representatives of the client, project engineers or regulatory agencies shall be permitted to enter the operating area while the work is in progress. All persons entering the work area shall comply with the applicable requirements of the *Master Health and Safety Plan*.

Protective Clothing and Equipment

Based on the hazards known to be present, personal protective requirements for this project correspond to Level D as defined in the *Master Health and Safety Plan*. The following clothing and protective equipment will be used by personnel engaged in the work:

Non conductive safety hat (except when inside equipment).

Steel toed boots.

Safety glasses when performing any operation in which hazards to the eyes exists. Examples are: metal cutting or burning.

Strong non-slip gloves.

(Note - Gloves need not be worn when no identified risk to the hands or chemical injury to the skin exists, or risks due to absorption of a chemical through the skin is known to be present, or when wearing gloves could cause a greater risk).

Lightweight cotton or cotton and synthetic fiber work shirt and pants.

(Note - Neckties, scarves or any loose clothing that might become caught in machinery will not be permitted).

Sanitary Facilities

Portable toilets with hand wash capabilities will be maintained on site.