Report

Site Closure Request
Former Dutch Pride Dairy Site

7400 Amador Valley Boulevard
Dublin, California

Prepared by:
Timothy R. O'Brien, R.G./C.E.G./C.H.G.
Project Geologist

Smith Technology Corporation
7901 Stoneridge Drive, Suite 100
Pleasanton, CA 94588
(510) 463-9117

SMITH
TECHNOLOGY CORPORATION

CERTIFICATION

This Site Closure Request Report was prepared under the direction of a California Registered Geologist.

Timothy R. O'Brien, R.G./C.E.G./C.H.G.
Project Geologist

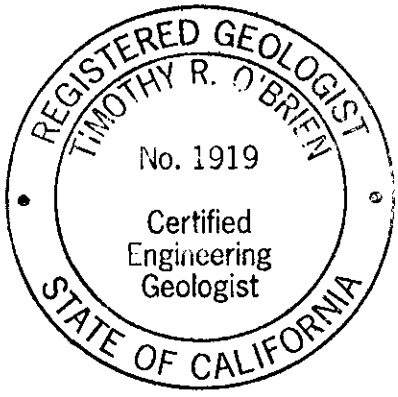


TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

SITE CLOSURE REQUEST
FORMER DUTCH PRIDE DAIRY SITE
7400 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA

1. INTRODUCTION

This report has been prepared for Ms. Jeanne Dodge by Smith Technology Corporation. The report supports a site closure request for the petroleum fuel leak site at 7400 Amador Valley Boulevard, Dublin, California (site). The site location is shown on Figure 1.

This closure request presents the history of the site investigation and clean-up. The site is under the oversight of the Alameda Health Care Services Agency (AHCSA), the local agency overseeing investigation and clean-up of petroleum fuel leak sites for the California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB).

Investigation and remedial activities have been underway at the site since a leak was first inferred at the site in 1989 (Ensco, 1989). The clean-up activities included tank removal, soil overexcavation, and confirmation sampling and monitoring. Residual contaminant levels at the site do not pose a significant threat to groundwater quality, as discussed in Section 3 of this report. In accordance with policies adopted by the RWQCB, and guidelines presented in *"Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks"* and *"California Leakang Underground Fuel Tank Historical Case Analyses,"* the site qualifies for administrative closure.

1.1. Report Organization

This closure request is presented in the following sections:

Chapter 2.0	Summary of Site Assessment and Remedial Activities
Chapter 3.0	Site Risk Evaluation
Chapter 4.0	Rationale for Site Closure
Chapter 5.0	Conclusions

2. SUMMARY OF SITE ASSESSMENT AND REMEDIAL ACTIVITIES

Site assessment and remedial activities have been occurring at the site since January, 1990. The remedial activities have been effective in protecting groundwater quality as evidenced by the low concentrations of total petroleum hydrocarbons as gasoline (TPH-G) and the gasoline constituents benzene, toluene, ethyl benzene, and xylenes (BTEX) in groundwater samples.

2.1. Site History

2.1.1. Initiation of Investigations

The site is located adjacent to a property formerly developed as a Shell Oil Company retail service station. In August, 1987 a petroleum fuel leak was discovered at the Shell Oil site when four underground storage tanks were removed (enviros, 1996). A remedial program was initiated at the Shell service station which included soil excavation and groundwater pump and treat. As part of that remedial program a monitoring well network was installed to evaluate the groundwater flow and quality.

A sampling event at Shell Oil Company's Well MW-10, located on the Dutch Pride Dairy property, revealed the presence of TPH-G. The inferred source of the TPH-G was the Dutch Pride Dairy tanks. The Dutch Pride Dairy property was equipped with two 10,000 gallon steel underground storage tanks used to store gasoline for retail sale. The Dutch Pride Dairy tanks were not in operation at the time Well MW-10 was sampled.

2.1.2. Remedial Activities

Both fuel tanks were removed from the Dutch Pride Dairy site in January, 1990 (ATT, 1990). Tables 1 and 2 include the analytical data collected during the tank removal and soil excavation programs.

A groundwater sample was collected from groundwater that infiltrated the tank pit. The groundwater data is presented in Table 1. In summary, TPH-G (92 mg/l) and BTEX were detected in the tank pit grab groundwater sample.

Tank pit sidewall soil samples were collected from the tank pit wall for chemical analysis during the initial tank removal and the subsequent overexcavation. The soil analytical data is presented in Table 2. Up to 6,000 mg/kg of TPH-G was detected in the initial excavation (ATT, 1991). The highest concentration of TPH-G was measured in samples collected from the northeast tank pit wall.

The northeast tank pit wall was overexcavated in June, 1990. Approximately 114 cubic yards of soil was excavated. Additional tank pit sidewall samples were collected from the tank pit wall for chemical analysis. The highest concentration of TPH-G detected was 900 mg/kg (ATT, 1991). The tank pit was backfilled with clean fill and compacted to grade. Well MW-10 was destroyed in the excavation activities; it was later replaced with Well MW-13 in April, 1991 (enviros, 1996).

To delineate the extent of petroleum in the soil and groundwater, seven soil borings were drilled at Dutch Pride Dairy. The analytical data generated in the drilling program is included in Table 2. The drilling program delineated the extent of petroleum contamination on the northwest, west, and south-southeast portions of the property. The extent of the petroleum contamination is consistent with the measured easterly groundwater flow directions reported for the former Shell service station (enviros, 1996).

A second drilling program was initiated at the request of Ms. Eva Chu of the ACHCSA on September 5, 1995 (Smith, 1995). The results of the soil and groundwater sampling event are

included in Tables 1 and 2. The sampling event revealed the presence of petroleum in the capillary fringe as expected. The soil above the capillary fringe was not impacted.

2.1.3. Soil and Groundwater Conditions

Boring log data indicates soil underlying the site consists of clays with some clayey sand lenses. Drilling activities on the adjacent Shell Oil property report similar conditions although to greater depths of investigation, approximately 31.5 feet below ground surface (bgs) (enviros, 1996).

Depth to groundwater has been measured in Shell Oil Company wells on a regular basis. Depth to groundwater has varied from 5.16 to 12.65 feet bgs. The groundwater flow direction has varied from northeast to southeast and the gradient has varied from 0.003 to 0.01 ft./ft (enviros, 1996).

3. SITE RISK EVALUATION

The Dutch Pride Dairy site qualifies as a low risk groundwater case based on criteria developed by the Lawrence Livermore Laboratory's report on fuel leak cleanups, and guidance documents prepared by the California Regional Water Quality Control Board (RWQCB). Each of the RWQCB's criteria described in their 'Low Risk Groundwater Case" guidance are described below (RWQCB, 1996).

3.1. Source Removal

The leak was stopped and the ongoing sources have been removed. The leakage of petroleum products was stopped when the tanks were taken out of service. The tanks were removed in January, 1990. However, petroleum hydrocarbons remained in the tank pit soils. The tank pit backfill was excavated and confirmatory soil samples were collected. Based on the results of the soil samples' petroleum content, one area of the tank pit was identified as requiring additional excavation. That work was completed in June, 1990. Soil containing significant levels of petroleum were excavated to the extent possible based on the configuration of the property lines and existing structures.

3.2. Site Characterization

The site has been adequately characterized. Soil samples and groundwater samples have been collected to characterize the extent of petroleum hydrocarbons at the Dutch Pride Dairy site. The petroleum has been delineated to the northwest, west, and southwest-south portions of the property. The extent of the petroleum to the east was delineated on the adjacent Shell Oil Company property where an environmental investigation was performed independently

Groundwater impacted with petroleum has been delineated by wells installed on the Dutch Pride Dairy site and downgradient of the Dutch Pride Dairy site.

3.3. Dissolved Hydrocarbon Plume

The dissolved hydrocarbon plume is not migrating. Considerable data has been collected downgradient of the source area from wells which indicate the concentrations of contaminants in groundwater are declining. The hydrocarbon plume is stable as evidenced by the concentration histogram plots included in Appendix A.

The data used to prepare the concentration histograms was presented in the Shell Oil site closure request (enviros, 1996). TPH-G and benzene concentration data plotted on the concentration histograms is presented in Table 3. The concentration histograms are discussed below in order of proximity to the former Dutch Pride Dairy tank pit location. Analytical results which reported the analyte to be 'hot detectable" were plotted at one-half the method detection limit. All the plots show concentrations in micrograms per liter (ug/l or ppb).

3.3.1. Concentration Histogram Discussion

The concentration histogram for Well MW-10 shows significant reductions of contaminant concentrations in groundwater. The well was destroyed during the excavation activities at the Dutch Pride Dairy site. Well MW-10 was replaced with Well MW-13.

The concentration histogram for Well MW-13 shows the continued decline of concentrations with the exception of a few sampling events in 1993. The concentrations decreased at the end of 1993 and have remained low since then.

The concentration histogram for Well MW-4 shows significant reductions of contaminant concentrations in groundwater Concentrations recorded after early 1989 have remained stable and low, in many cases not detectable.

The concentration histogram for Well MW-2 shows significant reductions of contaminant concentrations in groundwater. Concentrations recorded after early 1989 have remained stable and low, in many cases not detectable.

3.4. Sensitive Receptors

There are no sensitive receptors that are likely to be impacted by the remaining petroleum concentrations. The existence of drinking water wells, surface water, and other sensitive receptors was evaluated. Each of the potential exposure pathways are discussed below.

3.4.1. Water Well Survey

A groundwater well survey was conducted by Ensco Environmental Services for Shell Oil Company. The results of the survey were presented in the Shell Oil Company site closure request (enviros, 1996). There are no drinking water wells within one-half mile of the site that present an exposure pathway to an environmental receptor. The results of the well survey are included in Appendix B.

3.4.2. Surface Water

There are no perennial surface bodies of water within a mile of the site. An intermittent stream exists approximately 550 feet west (hydraulically upgradient) of the site. Commingling of petroleum impacted groundwater and surface water bodies is not occurring.

3.4.3. Sensitive Environmental Receptors

No sensitive environmental receptors exist at or near the site. There are no wetlands, marshes, mudflats, aquatic plants, or wildlife habitats in close proximity to the site. Human exposure to the residual petroleum is not expected to occur because the site is partially capped with asphalt and concrete pavement, the remainder of the site is covered with packed gravel. As the hydrocarbons naturally degrade, the risk of exposure will decrease even further.

3.5. Site Risk to Human Health

As previously stated, the risk of exposure of site contaminants to humans is considered low. This is due to the fact that the site is partially capped with asphalt and concrete pavement, with the remainder of the site covered with packed gravel. In addition, residual contaminants in the subsurface are primarily limited to the capillary fringe, approximately 10 feet bgs. There are no drinking water wells within one-half mile of the Dutch Pride Dairy site.

Based on the observations of the stable configuration of the groundwater plume, there is little concern of the site contaminants migrating from the site vicinity. As the plume continues to naturally biodegrade, risk will be reduced even further.

3.6. Site Risk to the Environment

No sensitive environmental receptors exist at or near the site. There are no wetlands, marshes, mudflats, aquatic plants, or wildlife habitats in close proximity to the site. Human exposure to the residual petroleum is not expected to occur because the site is partially capped with asphalt and concrete pavement, the remainder is covered with packed gravel. Residual contaminants are primarily limited to the capillary fringe which is at a depth of approximately 10 feet bgs. As the hydrocarbons naturally degrade, the risk of exposure will decrease even further.

4. RATIONALE FOR SITE CLOSURE

Review of technical data presented in site specific and off-site reports reveals the site is correctly classified as a low risk groundwater case. The remaining residual petroleum hydrocarbon concentrations do not pose a threat to drinking water, off-site groundwater, or surface water. The source of petroleum has been removed. Passive biodegradation alone can remediate the remaining petroleum hydrocarbon contamination at the site effectively (LLNL, 1995).

In summary, the site is recommended for closure for the following reasons:

- Natural bioremediation and attenuation processes have been effective in reducing TPH-G, and BTEX concentrations.
- The site is partially capped with asphalt and concrete, the remainder is covered with packed gravel; rainwater is drained in the area by storm drains, therefore, it is unlikely that significant infiltration of rainwater will occur in the area of the former tank pit.
- Soil and groundwater impacted areas are limited to the former tank pit and near-by area. The plume configuration is stable.
- There is no threat to off-site groundwater or surface water.
- There is no threat to drinking water.
- Removal of the residual petroleum hydrocarbon concentrations is not cost-effective.
- Passive bioremediation has already proven to be effective in controlling the spread of contaminants Bioremediation processes will succeed in cleaning the remaining impacted soil and groundwater.

5. CONCLUSIONS

Based on the discussion provided above, the following conclusions are provided.

Residual petroleum hydrocarbons may remain in the former tank pit area. The residual hydrocarbons will naturally degrade with time.

Remedial activities at the site were effective at controlling the petroleum hydrocarbon release. The site does not pose a risk to environmental quality in the area. Further remedial actions would not be cost effective and therefore are not warranted.

The site should be granted administrative closure by the ACHCSA. This report should be forwarded to the ACHCSA at the following address:

Ms. Eva Chu
Alameda County Health Care Services Agency
Division of Environmental Protection
1131 Harbor Bay Parkway, Second Floor
Alameda, CA 94502

REFERENCES

American Society for Testing and Materials, 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*, ASTM E-1739, Philadelphia, PA.

Aqua Terra Technologies (ATT), 1990, *Tank Removal Report*, prepared for Ms. Jeanne Dodge, March.

Ensco, 1988, *Well Installation and Survey Report*, prepared for Shell Oil Company, May 25.

enviros, 1996, *Case Closure Summary*, prepared for Shell Oil Company, May 22.

Freeze, R.A. & Cheery, J.A., 1979, *Groundwater*, Prentice-Hall, Englewood Cliffs, N J.

Lawrence Livermore National Laboratory, 1995, *Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks*, prepared for California State Water Resources Control Board, October 16.

Lawrence Livermore National Laboratory, 1995, *California Leaking Underground Fuel Tank Historical Case Analysis*, prepared for California State Water Resources Control Board, November 16.

Regional Water Quality Control Board, 1996, Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low Risk Fuel Sites, prepared for CAL-EPA, January 5.

Smith Technology Corporation, 1995, prepared for Ms. Jeanne Dodge, *Soil and Groundwater Sampling and Analysis*, October 17.

State of California, Leaking Underground Fuel Tank Task Force, 1989, *Leaking Underground Tank Field Manual: Guidelines For Site Assessment, Cleanup, and Underground Storage Tank Closure* October.

TABLE 1

SUMMARY OF GROUNDWATER ANALYTICAL DATA
FORMER DUTCH PRIDE DAIRY SITE
DUBLIN, CALIFORNIA

Sample Number	Sample Date	TPH-G (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Xylenes (mg/kg)
Pit Water	Jan., 1990	92	0.003	0.009	0.0013	0.013
B-2	Dec., 1992	8.9	0.83	0.37	0.29	0.69
B-4	Dec., 1992	ND (0.050)	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.6
W-1	9/5/95	120	19	12	2.6	15

Notes:
"Pit Water" sample reported by ATT, "B-2 and B-4" data reported by TMC Environmental.
"W-1" data reported by Smith Technology.
ND denotes not detected, detection limit in parentheses.
Additional data on Wells MW-10 and MW- 13 is presented in Table 3.

SMITH

TABLE 2

SUMMARY OF SOIL ANALYTICAL DATA
FORMER DUTCH PRIDE DAIRY SITE
DUBLIN, CALIFORNIA

Sample Number	Sample Date	Sample Depth	TPH-G (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl Benzene (ug/kg)	Xylenes (ug/kg)	Lead (mg/kg)
SS-1	Jan, 1990	NA	56	ND	1.2	1.0	6.6	NR
SS-2	Jan, 1990	NA	1900	ND	20	31	150	NR
SS-3	Jan, 1990	NA	1300	ND	8.2	24	80	NR
SS-4	Jan, 1990	NA	6000	ND	ND	9.8	18	NR
SS-5	Jan, 1990	NA	ND	0.019	0.015	0.014	0.034	NR
NE @ 12'	June, 1990	12	49	0.23	1.0	0.83	2.7	NR
SE @ 12'	June, 1990	12	790	ND < 5.0	ND < 5.0	10	33	NR
SE @ COR	June, 1990	NA	570	ND < 5.0	ND < 5.0	11	29	NR
CENTER	June, 1990	NA	900	7.4	9.4	19	76	NR
B-1-1	Dec., 1992	5-5.5	1.0	19	ND (5.0)	ND (5.0)	ND (5.0)	NR
B-1-2	Dec., 1992	6.5-7	NA	NA	NA	NA	NA	NR
B-1-3	Dec., 1992	8-8.5	NA	NA	NA	NA	NA	NR
B-1-4	Dec., 1992	9.5-10	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NR
B-1-5	Dec., 1992	11-11.5	NA	NA	NA	NA	NA	NR
B-1-6	Dec., 1992	12.5-13	NA	NA	NA	NA	NA	NR
B-1-7	Dec., 1992	14-14.5	NA	NA	NA	NA	NA	NR
B-2-1	Dec., 1992	5-5.5	NA	NA	NA	NA	NA	NR
B-2-2	Dec., 1992	7-7.5	3.0	960	74	310	550	NR
B-2-3	Dec., 1992	9-9.5	300	1700	2000	5100	19000	NR
B-2-4	Dec., 1992	11-11.5	320	1900	3400	2800	15000	NR
B-2-5	Dec., 1992	13-13.5	NA	NA	NA	NA	NA	NR
B-2-6	Dec., 1992	14.5-15	ND (1.0)	6.0	ND (5.0)	ND (5.0)	ND (5.0)	NR
B-3-1	Dec., 1992	5.5-6	NA	NA	NA	NA	NA	NR
B-3-2	Dec., 1992	7-7.5	2.0	260	ND (5.0)	59	45	NR
B-3-3	Dec., 1992	9.5-10	200	ND (600)	ND (600)	3000	ND (600)	NR
B-3-4	Dec., 1992	13-13.5	300	ND (800)	ND (800)	9500	ND (800)	NR
B-4-1	Dec., 1992	5.5-6	NA	NA	NA	NA	NA	NR
B-4-2	Dec., 1992	7.5-8	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NR
B-4-3	Dec., 1992	9.5-10	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NR
B-4-4	Dec., 1992	11.5-12	NA	NA	NA	NA	NA	NR
B-4-5	Dec., 1992	13.5-14	NA	NA	NA	NA	NA	NR
B-5-1	Dec., 1992	5.5-6	NS	NS	NS	NS	NS	NR
B-6-1	Dec., 1992	5.5-6	17	520	500	330	1100	NR
B-7-1	Dec., 1992	5.5-6	NA	NA	NA	NA	NA	NR
B-7-2	Dec., 1992	7.5-8	200	1300	2500	2300	9400	NR
B-7-3	Dec , 1992	9.5-10	300	1200	5600	4600	2300	NR
B-7-4	Dec., 1992	11.5-12	NA	NA	NA	NA	NA	NR
B-7-5	Dec., 1992	13.5-14	ND (1.0)	6.0	6.0	ND (5.0)	9.0	NR
S-1	9/5/95	12	1100	8.4	35	17	99	NR
SC-1	9/5/95	NA	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)

Notes:

"SS" and "NE" data reported by ATT, "B-X-X" data reported by TMC Environmental, "S" data reported by Smith Technology.
ND denotes not detected, NA denotes not analyzed

SMITH

TABLE 3

SUMMARY OF CONCENTRATION HISTOGRAM ANALYTICAL DATA
FORMER DUTCH PRIDE DAIRY SITE
DUBLIN, CALIFORNIA

	All concentrations in micrograms per liter (PPB).							
	Well MW-10		Well MW-13		Well MW-4		Well MW-2	
DATE	TPH-G	BENZENE	TPH-G	BENZENE	TPH-G	BENZENE	TPH-G	BENZENE
05/09/88	--	--	--	--	290	76	ND (50)	ND (0.5)
07/26/88	--	--	--	--	210	640	1700	230
10/05/88	--	--	--	--	450	110	200	20
11/22/88	--	--	--	--	500	110	800	93
12/09/88	--	--	--	--	260	920	270	45
01/13/89	--	--	--	--	990	200	180	26
02/10/89	--	--	--	--	290	90	320	43
03/02/89	1000	140	--	--	630	210	230	24
04/04/89	3300	760	--	--	640	340	230	53
05/01/89	680	99	--	--	100	65	ND (50)	2.7
06/01/89	1400	120	--	--	60	ND (0.5)	120	14
06/29/89	1300	51	--	--	110	62	ND (50)	4.1
08/09/89	860	310	--	--	160	110	88	3.9
09/11/89	390	55	--	--	94	45	ND (50)	3.2
10/10/89	460	85	--	--	90	30	110	6.7
10/25/89	270	20	--	--	ND (50)	3.4	ND (50)	2.5
12/20/89	ND (50)	5.7	--	--	ND (50)	35	ND (50)	7.1
01/17/90	--	--	--	--	ND (50)	4	ND (50)	4.4
02/23/90	--	--	--	--	ND (50)	8	70	6.3
06/04/90	--	--	--	--	160	85	60	2.4
11/20/90	--	--	--	--	140	52	60	5.6
02/12/91	--	--	--	--	130	48	130	14
05/06/91	--	--	1100	430	140	49	60	1.5
08/28/91	--	--	1000	350	90	13	100	6 3
11/13/91	--	--	680	320	ND (50)	10	ND (50)	11
02/25/92	--	--	780	260	120	47	ND (50)	3.8
05/12/92	--	--	660	210	na	na	ND (50)	6
08/12/92	--	--	400	140	ND (50)	3.5	110	6.8
11/10/92	--	--	60	220	na	na	56	4.5
02/10/93	--	--	970	340	190	59	81	4.8
05/10/93	--	--	2300	440	na	na	90	0.8
08/12/93	--	--	8900	670	50	4.1	420	61
11/11/93	--	--	470	230	na	na	ND (50)	ND (0.5)
02/11/94	--	--	200	390	ND (50)	0.62	ND (50)	0.64
05/17/94	--	--	ND (50)	88	na	na	ND (50)	3

SMITH

TABLE 3

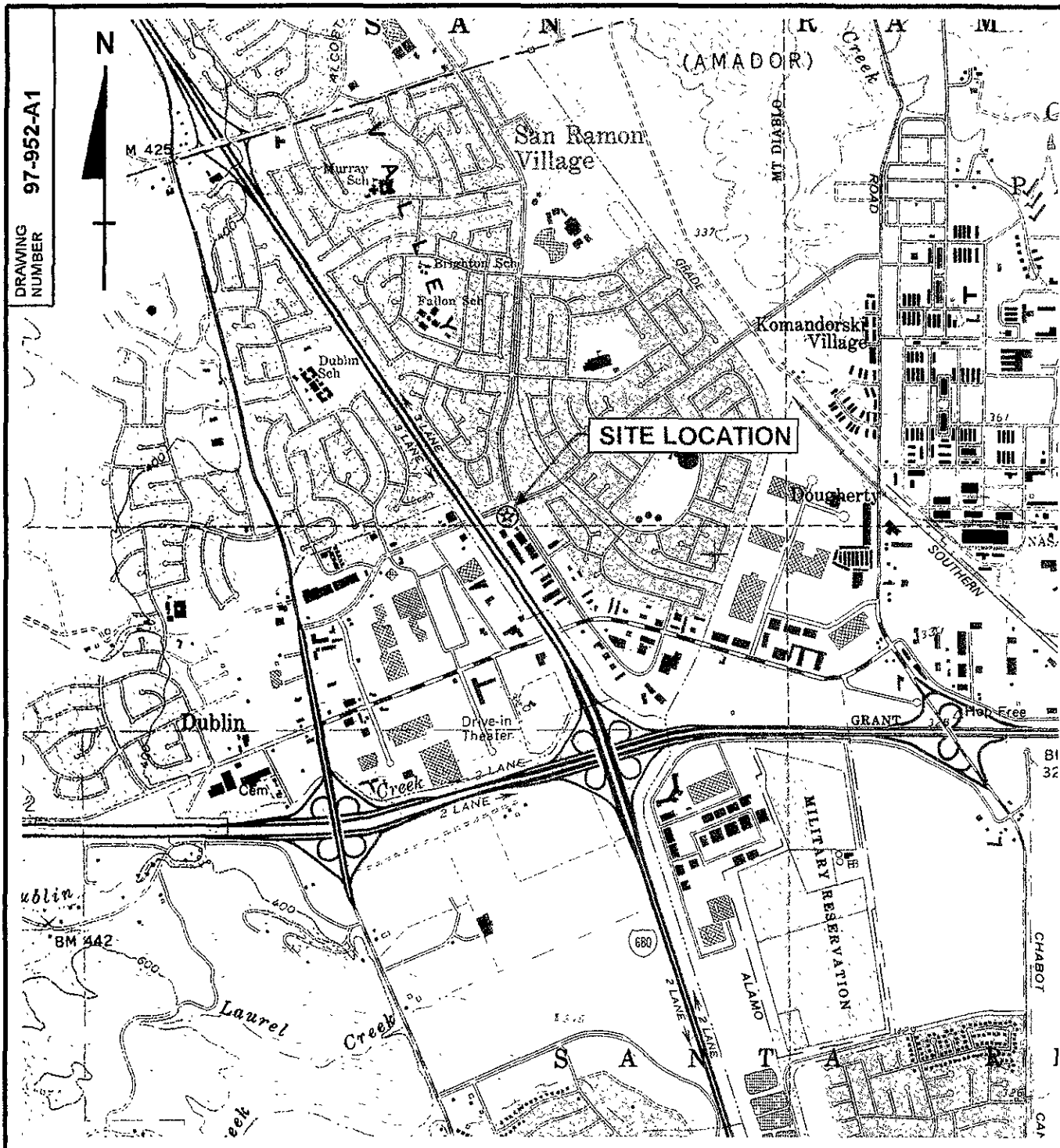
SUMMARY OF CONCENTRATION HISTOGRAM ANALYTICAL DATA
FORMER DUTCH PRIDE DAIRY SITE
DUBLIN, CALIFORNIA

	All concentrations in micrograms per liter (PPB).							
	Well MW-10		Well MW-13		Well MW-4		Well MW-2	
DATE	TPH-G	BENZENE	TPH-G	BENZENE	TPH-G	BENZENE	TPH-G	BENZENE
08/25/94	--	--	410	110	ND (50)	ND (0.5)	ND (50)	17
11/23/94	--	--	180	66	na	na	ND (50)	9.3
02/15/95	--	--	320	79	ND (50)	13	160	4.4
05/24/95	--	--	230	32	na	na	70	3.9
08/25/95	--	--	930	320	ND (50)	2.4	ND (50)	20
02/26/96	--	--	160	24	ND (50)	ND (0.5)	ND (50)	0.8
08/23/96	--	--	980	220	ND (50)	ND (0.5)	ND (50)	4.3

Notes:
ND denotes not detected, detection limit indicated in parentheses
NA denotes not a scheduled sample event.
"--" denotes well either not constructed or destroyed.

SMITH

DRAWING NUMBER 97-952-A1



APPROXIMATE SCALE

2000 2000 FEET

REFERENCES:

USGS 7.5 MIN TOPOGRAPHIC MAP
TITLED: DUBLIN, CALIF.
DATED: 1961 (REV. 1980)

CALIFORNIA

SITE LOCATION

SITE VICINITY MAP
FORMER DUTCH DAIRY
7400 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA

PREPARED FOR

MS. JEANNE DODGE

SMITH

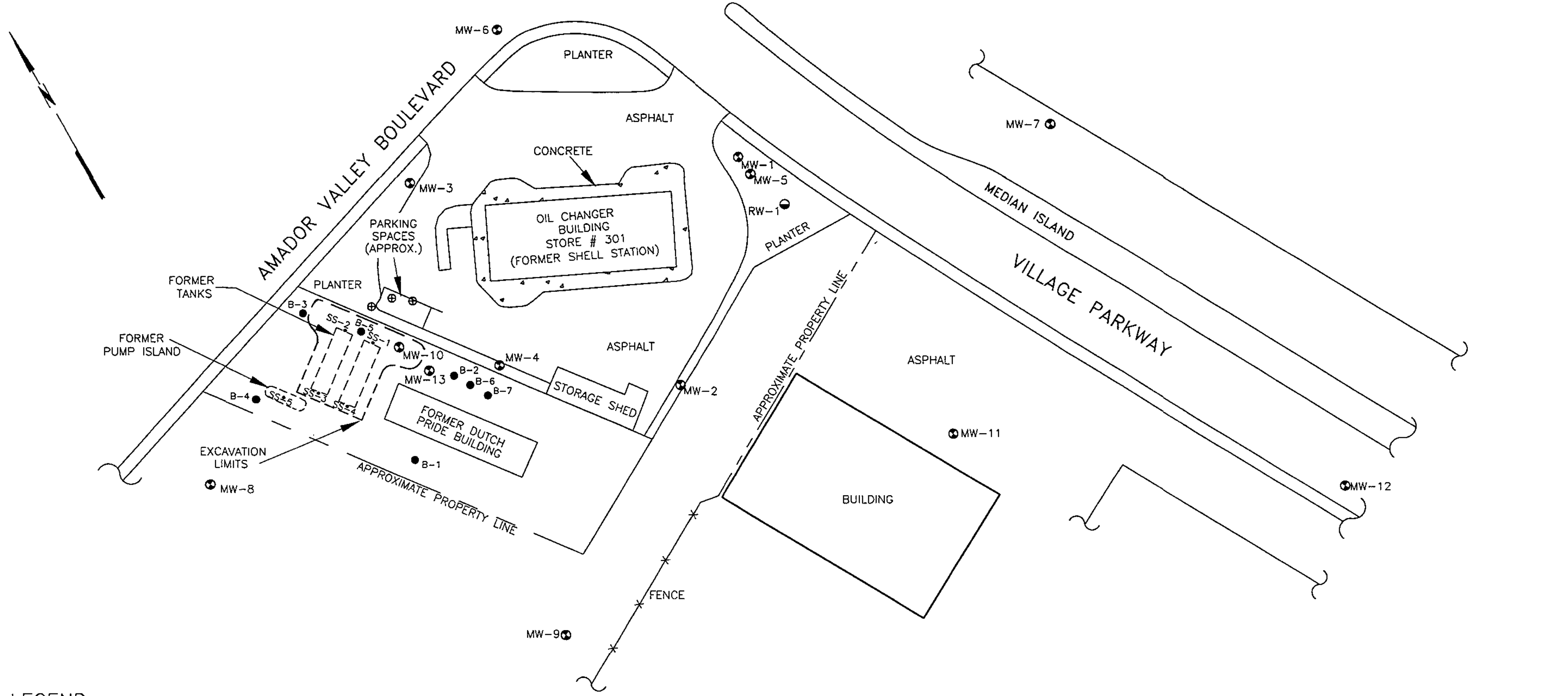
No.	DATE	ISSUE / REVISION	DWN BY	CK'D BY	AP'D BY
1	6-26-97	ISSUED FOR REPORT	VZC	TO	GAL

DATE: 6-25-97
SCALE: N.T.S.

FIGURE 1

DRAWING NUMBER 97-952-A1

DRAWING NUMBER 97-952-B2



LEGEND:

MW-13 = Former Shell groundwater monitoring well

RW-1 = Former Shell recovery well

B-7 ● = Soil boring (TMC Environmental Inc., January 1992)

SS-5 • = Soil sample (TMC Environmental Inc., January 1990)

⊕ = SMITH TECHNOLOGY SOIL BORING

APPROXIMATE SCALE

50 0 50 FEET

SCALE

0 25 FEET

GENERALIZED SITE PLAN
FORMER DUTCH DAIRY
7400 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA

PREPARED FOR

MS. JEANNE DODGE

SMITH

Source: Modified from map obtained from TMC ENVIRONMENTAL INC

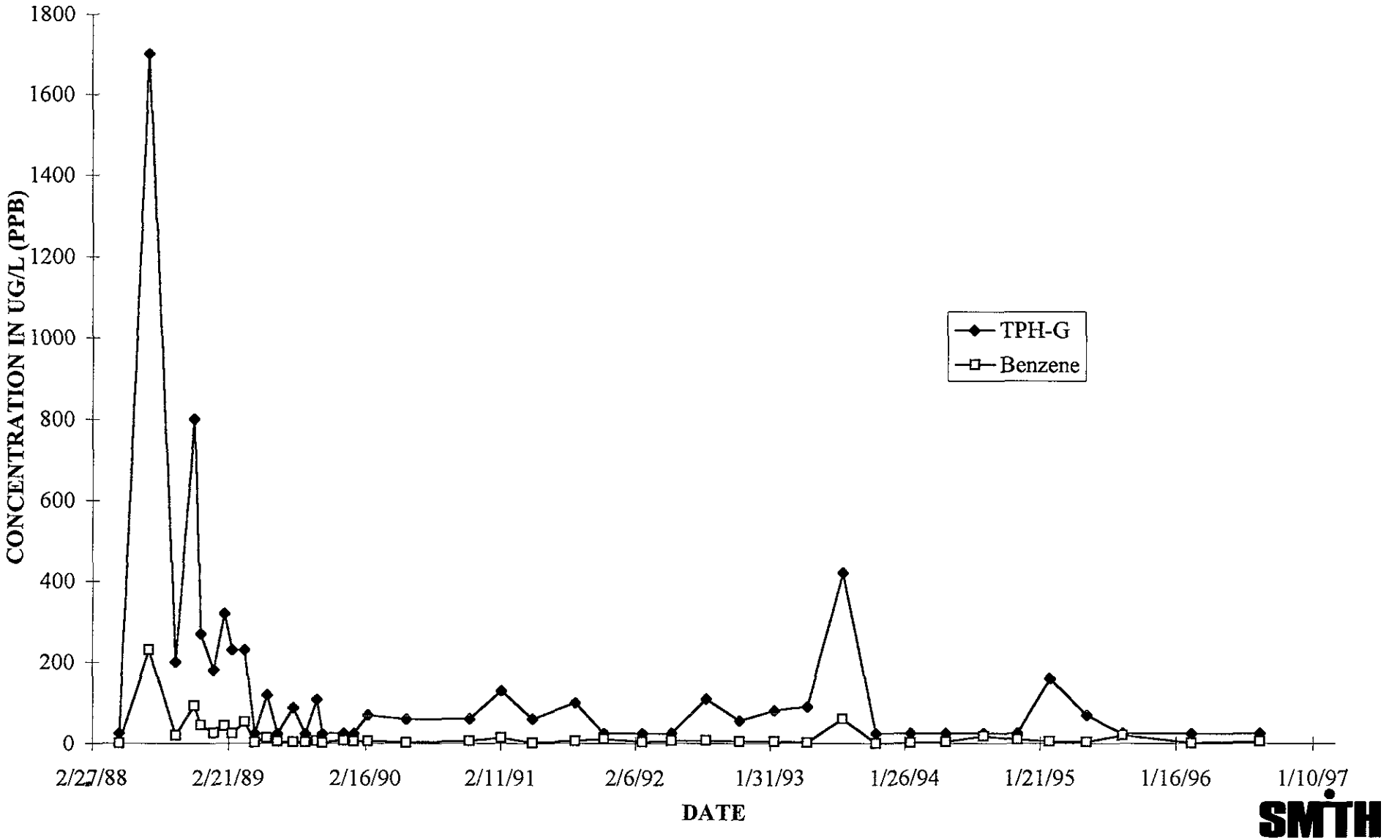
No	DATE	ISSUE / REVISION	DWN BY	CK'D BY	APP'D BY

DATE 6-25-97	FIGURE 2	DRAWING NUMBER 97-952-B2
SCALE AS SHOWN		

APPENDIX A

CONCENTRATION HISTOGRAMS

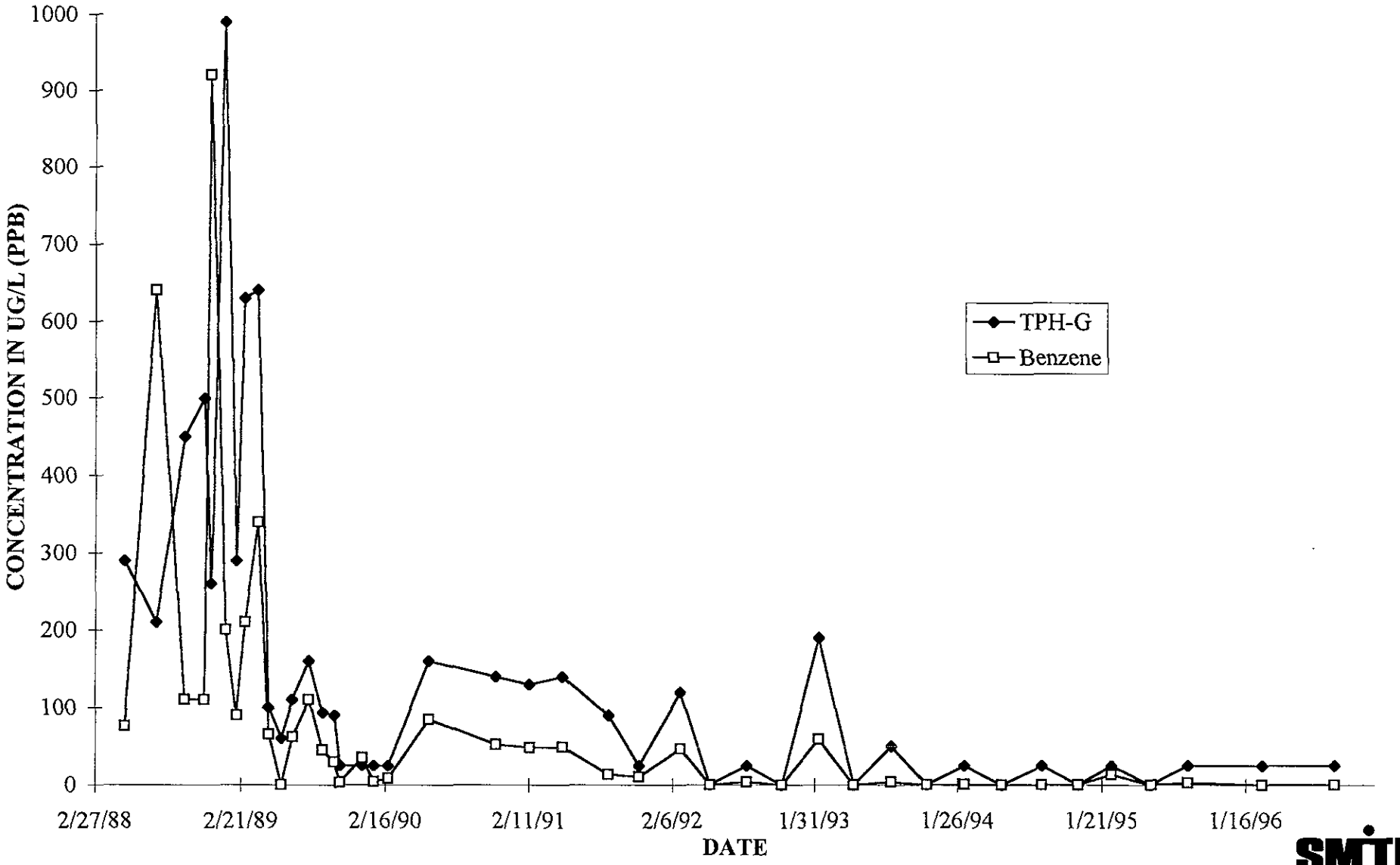
WELL MW-2 CONCENTRATION HISTOGRAM
FORMER DUTCH PRIDE DAIRY SITE
DUBLIN, CALIFORNIA



SMITH

PL\W\97-952\TABLES\DATASUM XLS\CHART MW-2

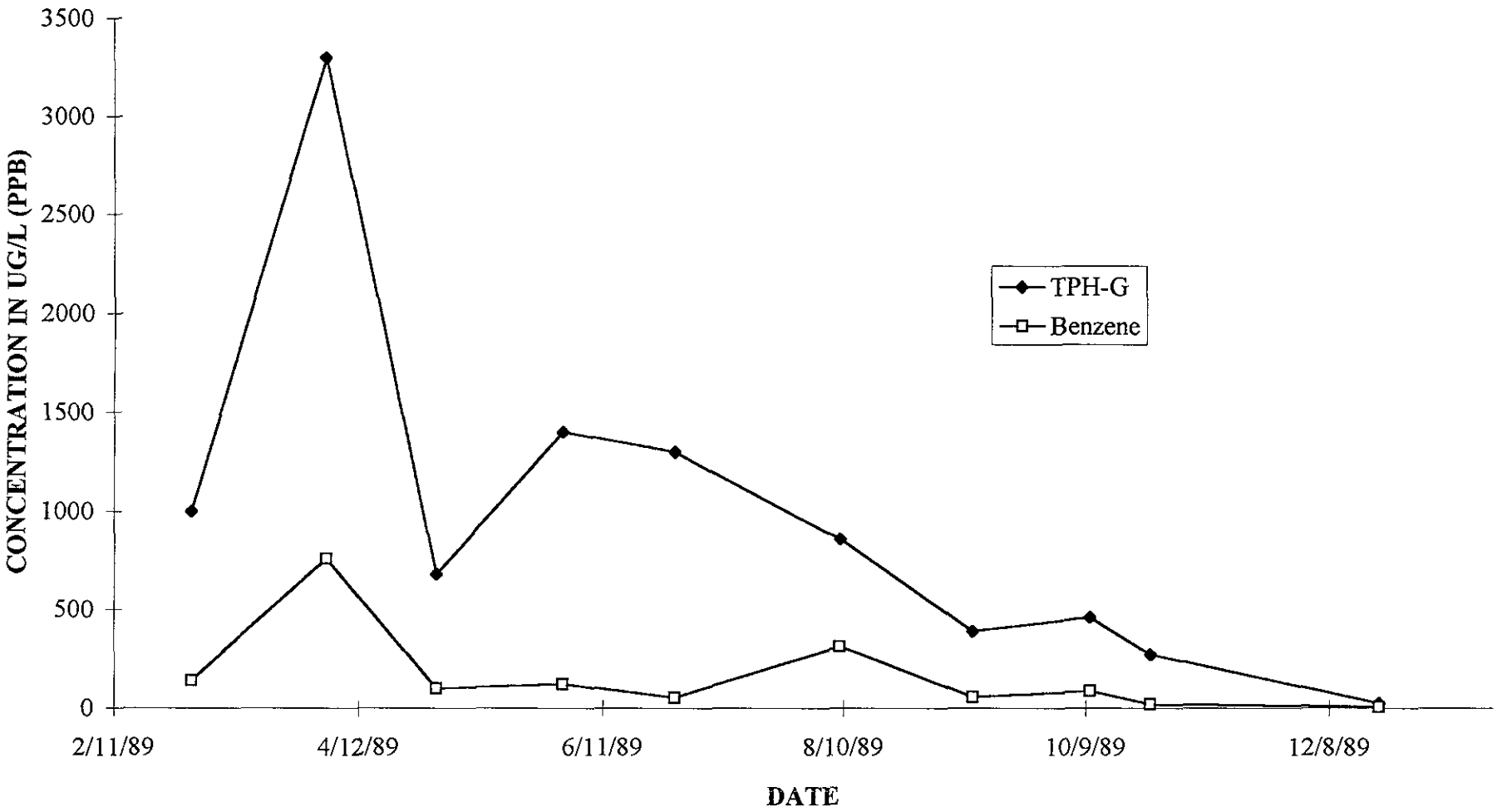
WELL MW-4 CONCENTRATION HISTOGRAM
FORMER DUTCH PRIDE DAIRY SITE
DUBLIN, CALIFORNIA



PL\W \97-952\TABLES\DATASUM.XLS\CHART MW-4

SMITH

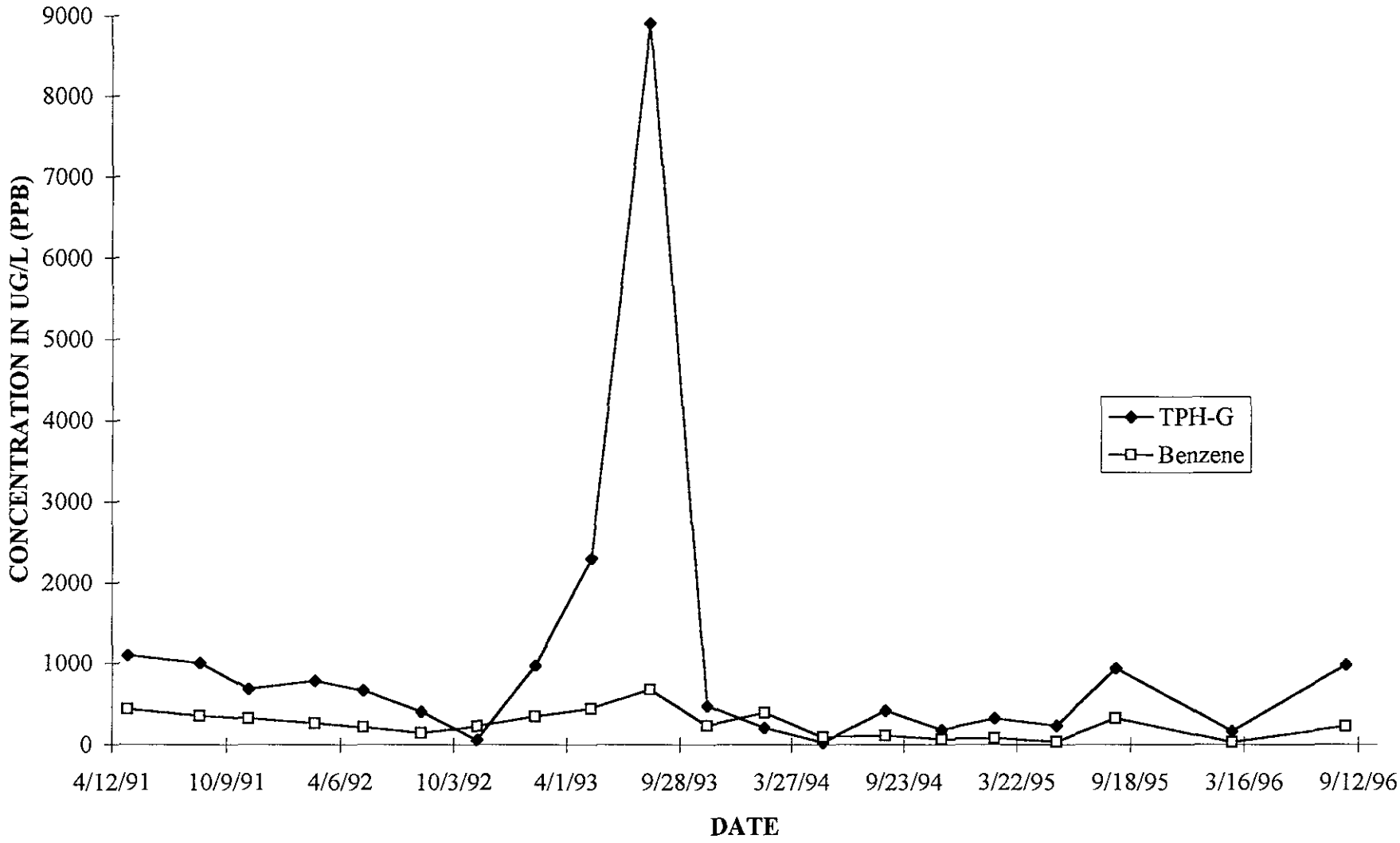
WELL MW-10 CONCENTATION HISTOGRAM
FORMER DUTCH PRIDE SITE
DUBLIN, CALIFORNIA



PL\W \97-952\TABLES\DATASUM XLS\CHART MW-10

SMITH

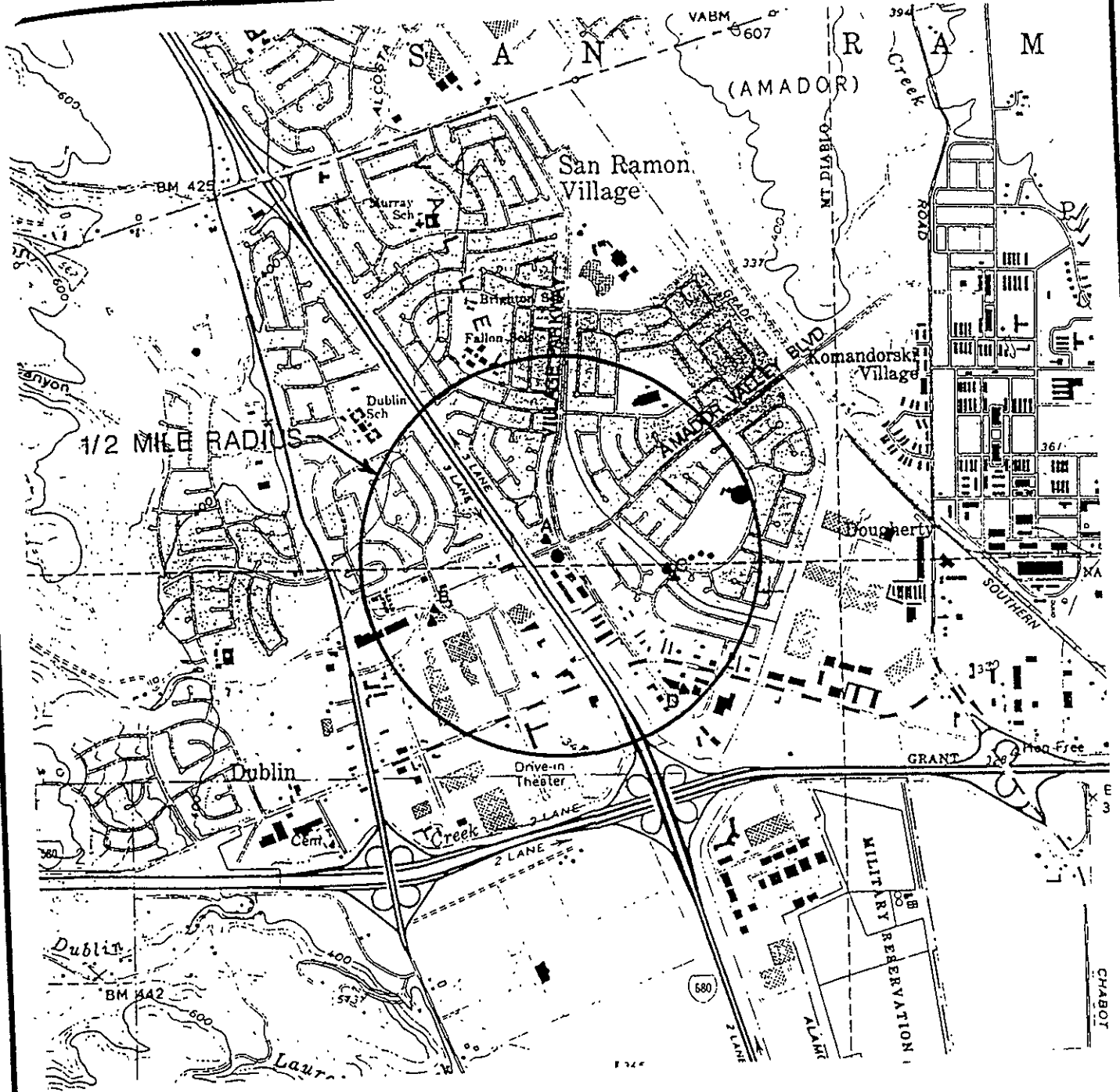
WELLMW-13 CONCENTRATION HISTOGRAM
FORMER DUTCH PRIDE DAIRY SITE
DUBLIN, CALIFORNIA



SMITH

APPENDIX B

WELL SURVEY REPORT



NOTE: SEE ATTACHED PAGE FOR WELL DESCRIPTIONS

ensco

FIGURE 1 – SITE LOCATION & WELL SURVEY MAP

FORMER SHELL STATION
7194 AMADOR VALLEY
DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
LKR	LKR
JOB #: 1826G	DRAWN BY: J.C.
DATE: 5-25-88	DRAWING #: FIG. 1

TABLE 2
SUMMARY OF WELL SURVEY WITHIN
1/2 MILE RADIUS OF FORMER SHELL SITE

SHELL OIL COMPANY
7194 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

FIGURE 1 DESIGNATION	WELL DESCRIPTION			
	OWNER OF WELLS AND LOCATION	NUMBER OF WELLS	TYPE OF WELLS	APPROXIMATE DEPTH OF WELLS
A	UNOCAL STATION #5366 7375 Amador Valley Blvd. Dublin, CA	4	Ground Water Monitoring Well	20 Feet
B	City Of Dublin Dublin Library	2	Test Water Wells	24 & 50 Feet
C	ACFC&WCD Flood Control Channel Mable Av. Dublin, CA	2	Test Water Wells	25 & 108 Feet
D	LUCKY STORES 600 Clark Av. Dublin, CA	1	Ground Water Monitoring Well	20 Feet

ACFC&WCD = Alameda County Flood Control & Water Conservation District

Note: The Location Of The Wells And Their Designation Are Shown On Figure 1.

TABLE 1

GROUNDWATER ELEVATION DATA

Pre-Pump Test
June 28 through 30, 1989

Well No.	Date	Groundwater Elevation (ft. datum MSL)	Distance From RW-1 (ft.)
MW-1	6/29/89	326.23	25
MW-2	6/29/89	326.06	85
MW-3	6/29/89	326.36	160
MW-4	6/29/89	326.14	140
MW-6	6/29/89	326.12	135
MW-7	6/29/89	326.38	125
MW-8	6/29/89	326.40	275
MW-9	6/29/89	325.57	210
MW-10	6/29/89	326.32	175
MW-11	6/29/89	325.90	130
MW-12	6/29/89	325.53	275
RW-1	6/30/89	326.29	0

TABLE 2

GROUNDWATER ELEVATION DATA

Maximum Drawdown
14:03 August 4, 1989

Well Number	Groundwater Elevation (ft. datum MSL)
MW-1	324.13
MW-2	324.91
MW-3	325.88
MW-4	325.45
MW-6	325.62
MW-7	326.98
MW-8	326.14
MW-9	325.12
MW-10	325.88
MW-11	325.15
MW-12	325.38
RW-1	321.74