RO317

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March 1, 2006

Mr. Don Hwang
Alameda County
Department of Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Fuel Leak Case No. RO0000317-5725 Thornhill Drive, Oakland, CA

Dear Don:

SOMA's "First Quarter 2006 Groundwater Monitoring Report" for the subject property has been uploaded to the State's GeoTracker database for your review.

Thank you for your time in reviewing our report. If you have any questions or comments, please call me at (925) 734-6400.

Sincerely,

Mansour Sepehr, Ph.D.,PE
Principal Hydrogeologist

REGISTERED PROFESSIONAL ENGINEER
MANSOUR SEPEHR
No. C042928
Exp. 3-31-06
CIVIL
STATE OF CALIFORNIA

cc: Mr. Mo Mashhoon w/report enclosure

Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Mo Mashhoon, the property owner of 5725 Thornhill Drive, Oakland, California, to comply with the Alameda County Health Care Services Agency's and California Regional Water Quality Control Board's requirements for the First Quarter 2006 groundwater monitoring event.

Mansour Sepehr, Ph.D., P.E.
Principal Hydrogeologist

ENVIRONMENTAL ENGINEERING, INC
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First Quarter 2006
Groundwater Monitoring Report

Mash Petroleum Inc.

5725 Thornhill Drive

Oakland, California

March 1, 2006

Project 2831

Prepared for

Mr. Mo Mashhoon

1721 Jefferson Street

Oakland, California 94612

Prepared by

SOMA Environmental Engineering, Inc.

6620 Owens Drive, Suite A

Pleasanton, California 94588

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1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Mo Mashhoon, the property owner of 5725 Thornhill Drive, Oakland, California ("the Site") as shown in Figure 1. The Site is currently an active ARCO station that is located in an area consisting primarily of commercial and residential land uses.

This report summarizes the results of the First Quarter 2006 groundwater monitoring event conducted at the Site on February 1, 2006, and includes the field measurement results of the physical and chemical properties of the groundwater at the time of sampling. This report also includes the laboratory analyses results on the groundwater samples.

The groundwater monitoring activities for this quarter were performed in accordance with the general guidelines of the California Regional Water Quality Control Board (CRWQCB) and the Alameda County Health Care Services Agency (ACHCSA). Appendix A details the groundwater monitoring procedures used during this monitoring event.

1.1 Previous Activities

In November 1998, Penn Environmental (Penn) removed a 550-gallon steel underground waste oil tank (WOT) from the Site. Soil samples collected from the WOT excavation contained up to 1,100,000 µg/Kg of total petroleum hydrocarbons as gasoline (TPH-g), 2,700,000 µg/Kg of total petroleum hydrocarbons as diesel (TPH-d), and 4,200,000 µg/Kg of total petroleum hydrocarbons as motor oil (TPH-mo). On February 4, 1999, Penn Environmental over-excavated the contaminated soil surrounding the former WOT. Aqua Science Engineers, Inc., (ASE) collected confirmation soil samples from two sidewalls of the excavation. The only compound detected in one of these two soil samples was Methyl tertiary Butyl Ether (MtBE) at 40 µg/Kg.

In July 1999, ASE drilled borehole BH-A in the vicinity of the former WOT. On September 6, 2000, ASE drilled soil boreholes BH-B and BH-C. On October 23, 2000, ASE drilled soil boreholes BH-D and BH-E. ASE also collected water samples from Temescal Creek. No hydrocarbons were detected in the water sample collected from Temescal Creek. Figure 2 shows the locations of the borings.

On March 1 and 2, 2004, SOMA oversaw the advancement of nine temporary well boreholes, HP-1 through HP-7, HP-9 and HP-10, by Gregg Drilling & Testing (Gregg). Proposed hydropunch HP-8, located in street, was not drilled due to traffic hazards. Three onsite wells were decommissioned in March 2004, and three wells (SOMA-1 to SOMA-3) were installed. The locations of the boreholes and wells are shown in Figure 2.

The results of the March 2004 investigation and details of the well installations are presented in SOMA's report entitled "Soil and Groundwater Investigation and Monitoring Well Installation Report at 5725 Thornhill Drive, Oakland, California," dated April 16, 2004.

On April 25, 2005, SOMA conducted a sensitive receptor survey to identify any water bodies or domestic, irrigation or water supply wells within a quarter mile radius of the Site. Based on the State Department of Water Resources and Alameda County Public Works Agency records, no drinking water, domestic or irrigation wells were within a quarter mile radius of the Site.

In May 2005, CPT/MIP boreholes (CPT-1 through CPT-5 and CPT-7 through CPT-11) were advanced under the supervision of SOMA. CPT-6 could not be drilled due to physical constraints and obstruction of local traffic. Ten boreholes, designated GS-1 through GS-5 and GS-7 through GS-11, were advanced at the corresponding CPT borehole locations. Monitoring well SOMA-4 was also installed. Figure 2 shows the location of this well and CPT borehole locations.

The results of the May 2005 site investigation and well installation are presented in SOMA's report entitled "Additional Soil and Groundwater Investigation and Monitoring Well Installation Report at 5725 Thornhill Drive, Oakland, California," dated June 13, 2005.

2.0 RESULTS

The following sections provide the results of the field measurements and laboratory analyses for the February 1, 2006 groundwater monitoring event.

2.1 Field Measurements

As shown in Table 1, the depth to groundwater ranged from 5.10 feet in SOMA-1 to 7.68 feet in SOMA-4. The corresponding groundwater elevations ranged from 564.97 feet in SOMA-4 to 571.37 feet in SOMA-1. The contour map of the groundwater elevations is presented in Figure 3. The groundwater flows southwesterly across the Site, with an average gradient of 0.031 feet/feet.

The field notes in Appendix B show the detailed measurements of the physical and chemical parameters of the groundwater for each well during this monitoring event.

2.2 Laboratory Analyses

Table 1 presents the results of the laboratory analyses for total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel (TPH-d), total petroleum hydrocarbons as motor oil (TPH-mo), benzene, toluene,

ethylbenzene, total xylenes (BTEX), and Methyl tertiary Butyl Ether (MtBE). Table 2 presents the results of the gasoline oxygenates and lead scavengers.

TPH-g was below the laboratory reporting limit in well SOMA-1. Detectable TPH-g concentrations ranged from 1,010 ug/L in SOMA-3 to 2,730 ug/L in SOMA-2. Figure 4 displays the contour map of TPH-g concentrations in the groundwater. TPH-g has migrated off-site due to the southwesterly groundwater flow direction. The most impacted TPH-g region appears to be in the region of the pump islands, around well SOMA-2.

TPH-d was detected throughout the Site. Detectable TPH-d concentrations ranged from 66 ug/L in SOMA-2 to 920 ug/L in SOMA-1. The TPH-d results in wells SOMA-1 and SOMA-2 did not resemble that of a standard diesel pattern. The laboratory designated this variation in the diesel pattern by using a "Y" flag. The TPH-d result in well SOMA-1 may have also been affected by the presence of lighter hydrocarbons that were present during analytical testing. The laboratory designated this variation in lighter hydrocarbons by using an "L" flag.

Figure 5 displays a contour map of TPH-d concentrations in the groundwater. TPH-d has migrated off-site due to the southwesterly groundwater flow direction. The most impacted TPH-d region appears to be in the region of the UST cavity, around well SOMA-1.

TPH-mo was below the laboratory reporting limit throughout the Site, therefore, no iso-concentration figure was drawn for this analyte.

All BTEX analytes were below the laboratory reporting limit in wells SOMA-1 and SOMA-4. In well SOMA-2, low BTEX analytes were detected, and toluene was below the laboratory reporting limit. In well SOMA-3, all BTEX analytes were below the laboratory reporting limit, with the exception of total xylenes, which was detected at 2.06 ug/L. No iso-concentration figure was drawn for benzene due to the site-wide non-detectable levels, with the exception of the sample collected from well SOMA-2, which had a trace benzene concentration of 0.68 ug/L.

MtBE was detected in all of the groundwater samples collected during this monitoring event. Detectable MtBE concentrations ranged from 2.74 ug/L in well SOMA-1 to 409 ug/L in well SOMA-4.

Figure 6 displays a contour map of MtBE concentrations in the groundwater using EPA Method 8260B. Figure 6 illustrates the overall influence of the southwesterly groundwater flow direction from the UST cavity and pump islands to the off-site regions. The most impacted MtBE region appears to be in the vicinity of well SOMA-4.

As shown in Table 2, tert-Butyl-Alcohol (TBA) was the only detected gasoline oxygenate. Figure 7 displays a contour map of TBA concentrations in the

groundwater. The most impacted TBA region appears to be in the vicinity of well SOMA-4.

Appendix C contains the laboratory report and chain-of-custody (COC) form from this monitoring event.

3.0 CONCLUSIONS & RECOMMENDATIONS

The findings of the First Quarter 2006 groundwater monitoring event can be summarized as follows:

- The groundwater flow direction is southwesterly across the Site, at a gradient of approximately 0.031 feet/feet. The groundwater flow direction has remained consistent with the previous quarter; however, the groundwater gradient has slightly increased.

- Based on previous site investigations, and the results of the quarterly monitoring events, both the hydrocarbon and MtBE plumes have migrated southwesterly off-site with the flow of groundwater.

- In general, low levels of TPH-g, TPH-d, and MtBE were detected in well MW-4. As such, SOMA recommends a no further action (NFA) status be adopted by the ACHCSA.

4.0 REPORT LIMITATIONS

This report is the summary of work done by SOMA, including observations and descriptions of the Site's conditions. It includes the analytical results produced by Pacific Analytical Laboratory in Alameda, California and Curtis and Tompkins, Ltd, in Berkeley, California for the current groundwater monitoring event. The number and location of the wells were selected to provide the required information, but may not be completely representative of the entire site's conditions. All conclusions and recommendations are based on the results of the laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that the services provided were done in accordance with the generally accepted practices in the environmental engineering and consulting field at the time of this sampling.

Tables

Table 1
SOMA Historical Groundwater Elevation Data
& Analytical Results (Hydrocarbons, BTEX, & MtBE)
5725 Thornhill Drive, Oakland California

Monitoring Well	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE* 8260B (µg/L)
SOMA-1	Apr-04	576.47	5.75	570.72	63	<50	<300	<0.5	<0.5	<0.5	<0.5	7.7
	Jul-04	576.47	6.21	570.26	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	9.1
	Oct-04	576.47	5.76	570.71	<50	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	6.4
	Jan-05	576.47	3.73	572.74	<50	200 HY	900	<0.5	<0.5	<0.5	<0.5	4.7
	Apr-05	576.47	4.72	571.75	<200	<50	<300	<0.5	<0.5	<0.5	<1.0	7.49
	Jul-05	576.47	5.87	570.60	<200	<50	<300	<0.5	<2.0	<0.5	<1.0	4.94
	Oct-05	576.47	6.12	570.35	<50	<50	<300	<0.5	<2.0	<0.5	<1.0	5.33
	Feb-06	**576.47**	**5.10**	**571.37**	**<50**	**920LY**	**<300**	**<0.5**	**<2.0**	**<0.5**	**<1.0**	**2.74**
SOMA-2	Apr-04	575.50	7.40	568.10	1,900	690 LY	<300	<0.5	<0.5	5.2	9.9	1,900
	Jul-04	575.50	7.92	567.58	1,500	710 LY	<300	8.9 C	<0.5	1.5 C	2.9 C	740
	Oct-04	575.50	7.62	567.88	955	790 LY	<1.0	<2.5	<2.5	<2.5	< 5	785
	Jan-05	575.50	5.70	569.80	3,700	2100 LY	380	3.7	<2.0	3.5	102	310
	Apr-05	575.50	6.28	569.22	5,960	1200 LY	<300	1.19	<0.5	20.6	25	241
	Jul-05	575.50	7.42	568.08	2,480	800 LY	<300	1.09	<2.0	2.65	0.73	162
	Oct-05	575.50	7.70	567.80	2,710	1,100 LY	<300	1.41	<2.0	2.24	0.64	130
	Feb-06	**575.50**	**6.71**	**568.79**	**2,730**	**66Y**	**<300**	**0.68**	**<2.0**	**0.71**	**6.33**	**49**
SOMA-3	Apr-04	575.92	7.14	568.78	190	120 Y	<300	<0.5	<0.5	<0.5	<0.5	5.1
	Jul-04	575.92	7.95	567.97	130	120 LY	<300	<0.5	<0.5	<0.5	<0.5	9.1
	Oct-04	575.92	7.60	568.32	57	280 LY	<1.0	<0.5	<0.5	<0.5	<2	11.3
	Jan-05	572.92	5.45	567.47	140	210 Y	<300	<0.5	<0.5	<0.5	<0.5	5.8
	Apr-05	572.92	6.02	566.90	<200	<50	<300	<0.5	<0.5	<0.5	<1.0	4.53
	Jul-05	572.92	7.49	565.43	<200	120 Y	<300	<0.5	<2.0	<0.5	<1.0	4.69
	Oct-05	572.92	7.63	565.29	50.1	120 Y	<300	<0.5	<2.0	<0.5	<1.0	8.63
	Feb-06	**572.92**	**7.20**	**565.72**	**1,010**	**220Y**	**<300**	**<0.5**	**<2.0**	**<0.5**	**2.06**	**32**

Table 1
SOMA Historical Groundwater Elevation Data
& Analytical Results (Hydrocarbons, BTEX, & MtBE)
5725 Thornhill Drive, Oakland California

Monitoring Well	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE* 8260B (µg/L)
SOMA-4	Jul-05	572.65	8.10	564.55	3,350	1,200 LY	<300	<1.0	<4.0	<1.0	<2.0	455
	Oct-05	572.65	8.15	564.50	1,580	1,200 LY	<300	<2.15	<8.6	<2.15	<4.3	425
	Feb-06	**572.65**	**7.68**	**564.97**	**1,940**	**830LY**	**<300**	**<2.15**	**<8.60**	**<2.15**	**<4.3**	**409**

Notes:
<: not detected at or above laboratory reporting limits.
C: Presence confirmed, but RPD between columns exceeds 40%.
H: Heavier hydrocarbons contributed to the quantitation.
L: Lighter hydrocarbons contributed to the quantitation.
Y: Sample exhibits chromatographic pattern which did not resemble standard.

The Second Quarter 2004 was the first time SOMA monitored the site. Wells SOMA-1 to SOMA-3 were monitored at that time.
Well SOMA-4 was installed on May 27, 2005. The Third Quarter 2005 was the first time SOMA monitored this well.

Table 2
Groundwater Analytical Results
Gasoline Oxygenates & Lead Scavengers
5725 Thornhill Drive,Oakland California

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
SOMA-1	Apr-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Jul-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Oct-04	<2.5	<0.5	<0.5	<2	<0.5	<0.5	<1.0
	Jan-05	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1,000
	Apr-05	<2.5	<0.5	<0.5	<2.0	<0.5	<0.5	<1000
	Jul-05	<10	<0.5	<0.5	<2.0	<0.5	<0.5	<1000
	Oct-05	<10	<0.5	<0.5	<2.0	<0.5	<0.5	<1000
	Feb-06	**<10**	**<0.5**	**<0.5**	**<2.0**	**<0.5**	**<0.5**	**<1000**
SOMA-2	Apr-04	<100	<5.0	<5.0	19.0	<5.0	<5.0	<10000
	Jul-04	<33	<1.7	<1.7	9.8	<1.7	<1.7	<3300
	Oct-04	36.3	<2.5	<2.5	12.85	<0.5	<0.5	<1.0
	Jan-05	67	<2.0	<2.0	6.7	<2.0	<2.0	<4,000
	Apr-05	71	<0.5	<0.5	3.29	<0.5	<0.5	<1000
	Jul-05	74.2	<0.5	<0.5	2.82	<0.5	<0.5	<1000
	Oct-05	81.7	<0.5	<0.5	2.61	<0.5	<0.5	<1000
	Feb-06	**37.8**	**<0.5**	**<0.5**	**<2.0**	**<0.5**	**<0.5**	**<1000**
SOMA-3	Apr-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Jul-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Oct-04	<2.5	<0.5	<0.5	<2	<0.5	<0.5	<1.0
	Jan-05	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1,000
	Apr-05	<2.5	<0.5	<0.5	<2.0	<0.5	<0.5	<1000
	Jul-05	<10	<0.5	<0.5	<2.0	<0.5	<0.5	<1000
	Oct-05	<10	<0.5	<0.5	<2.0	<0.5	<0.5	<1000
	Feb-06	**40.9**	**<0.5**	**<0.5**	**<2.0**	**<0.5**	**<0.5**	**<1000**

Table 2
Groundwater Analytical Results
Gasoline Oxygenates & Lead Scavengers
5725 Thornhill Drive,Oakland California

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
SOMA-4	Jul-05	84.1	<1.0	<1.0	4.4	<1.0	<1.0	<1000
	Oct-05	314	<2.15	<2.15	<8.6	<2.15	<2.15	<4300
	Feb-06	**417**	**<2.15**	**<2.15**	**<8.6**	**<2.15**	**<2.15**	**<4300**

Notes:
<: Not detected above the laboratory reporting limit.
The Second Quarter 2004 was the first time SOMA monitored the site.
Wells SOMA-1 to SOMA-3 were monitored at that time.
Well SOMA-4 was installed on May 27, 2005. The Third Quarter 2005 was the first time SOMA monitored this well.

Gasoline Oxygenates:
TBA: tertiary butyl alcohol
DIPE: Di-Isopropyl ether
ETBE: Ethyl tertiary butyl ether
TAME: Methyl tertiary amyl ether
Ethanol

Lead Scavengers:
1,2-Dichloroethane
EDB: 1,2-Dibromoethane

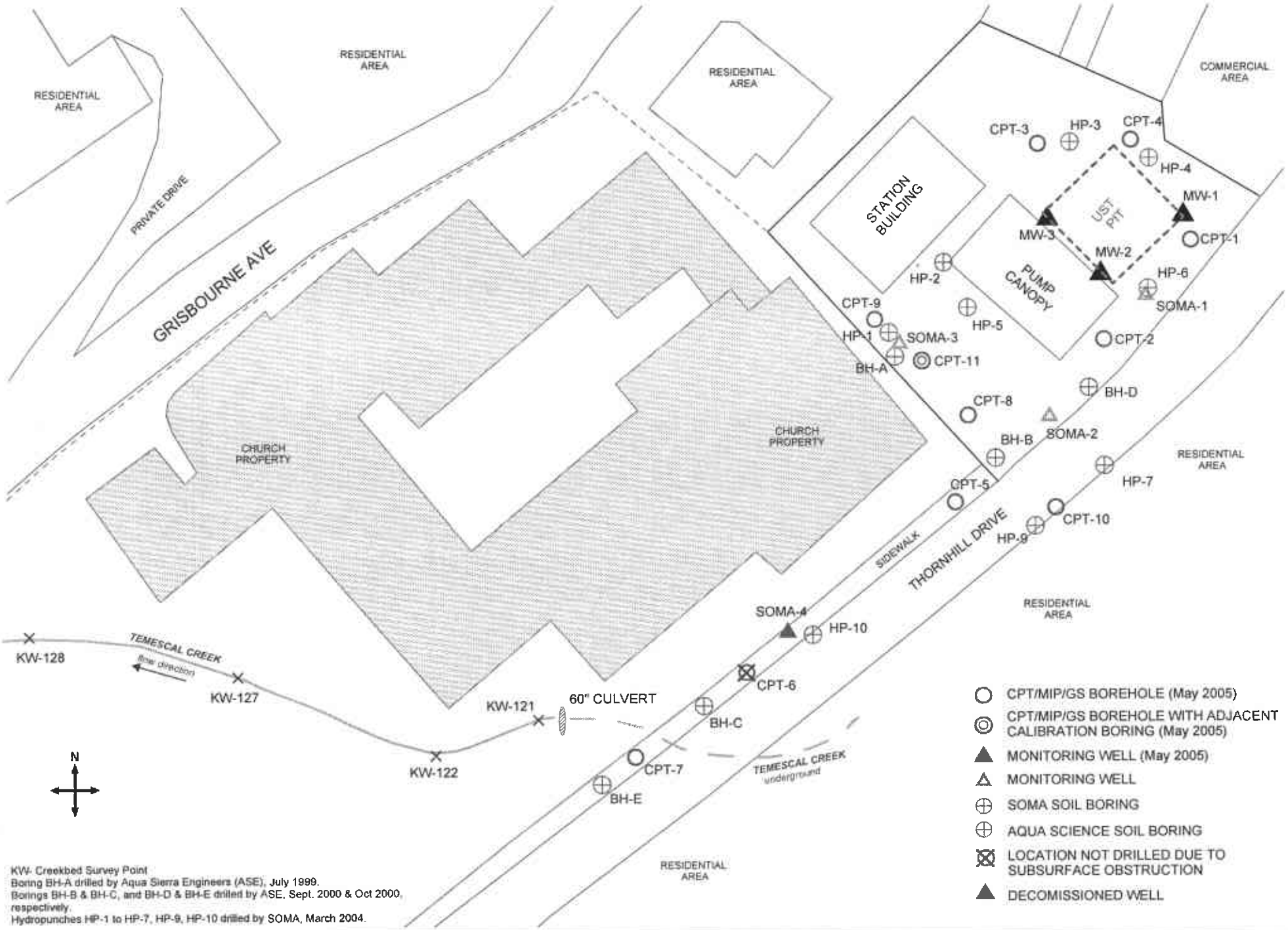
Figures

N

approximate scale in feet

0 100 200

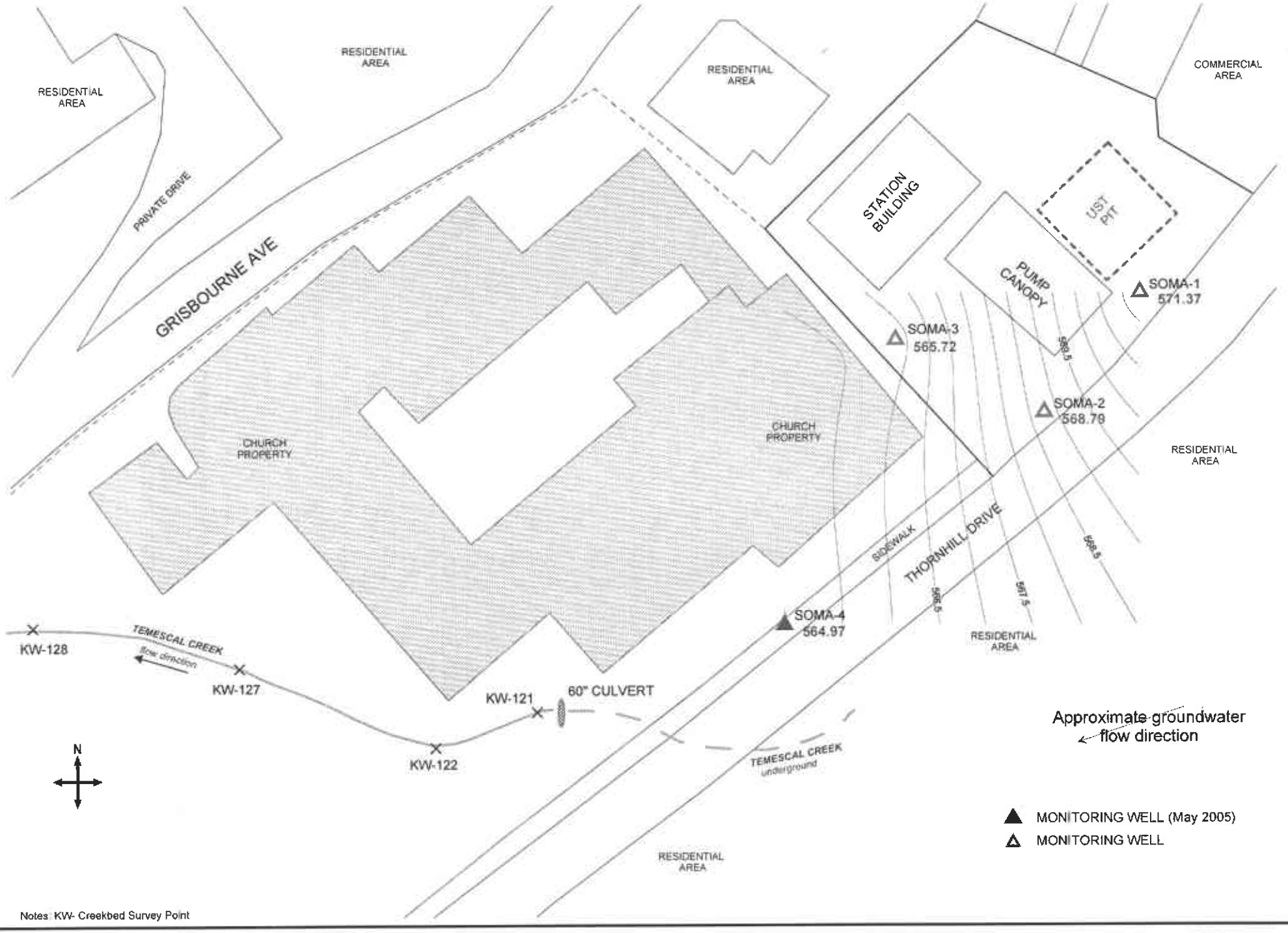
Figure 1: Site vicinity map.



KW- Creekbed Survey Point
Boring BH-A drilled by Aqua Sierra Engineers (ASE), July 1999.
Borings BH-B & BH-C, and BH-D & BH-E drilled by ASE, Sept. 2000 & Oct 2000, respectively.
Hydropunches HP-1 to HP-7, HP-9, HP-10 drilled by SOMA, March 2004.

approximate scale in feet
0 25 50

Figure 2: Site map showing locations of monitoring wells, soil borings, decomissioned wells, and CPT/MIP/GS boreholes.



Notes: KW- Creekbed Survey Point

approximate scale in feet

0 25 50

Figure 3: Groundwater elevation contour map in feet. February 2006.

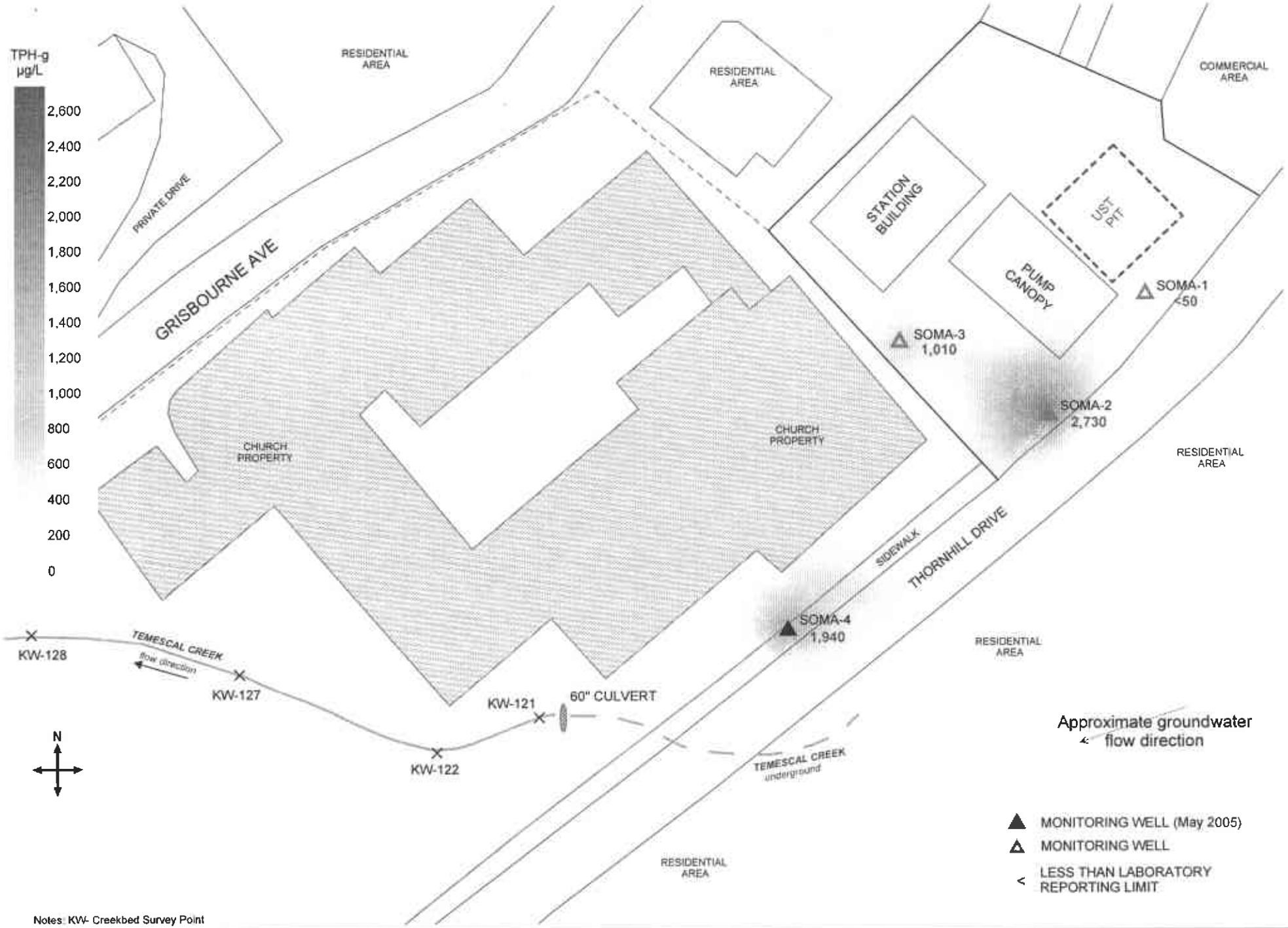
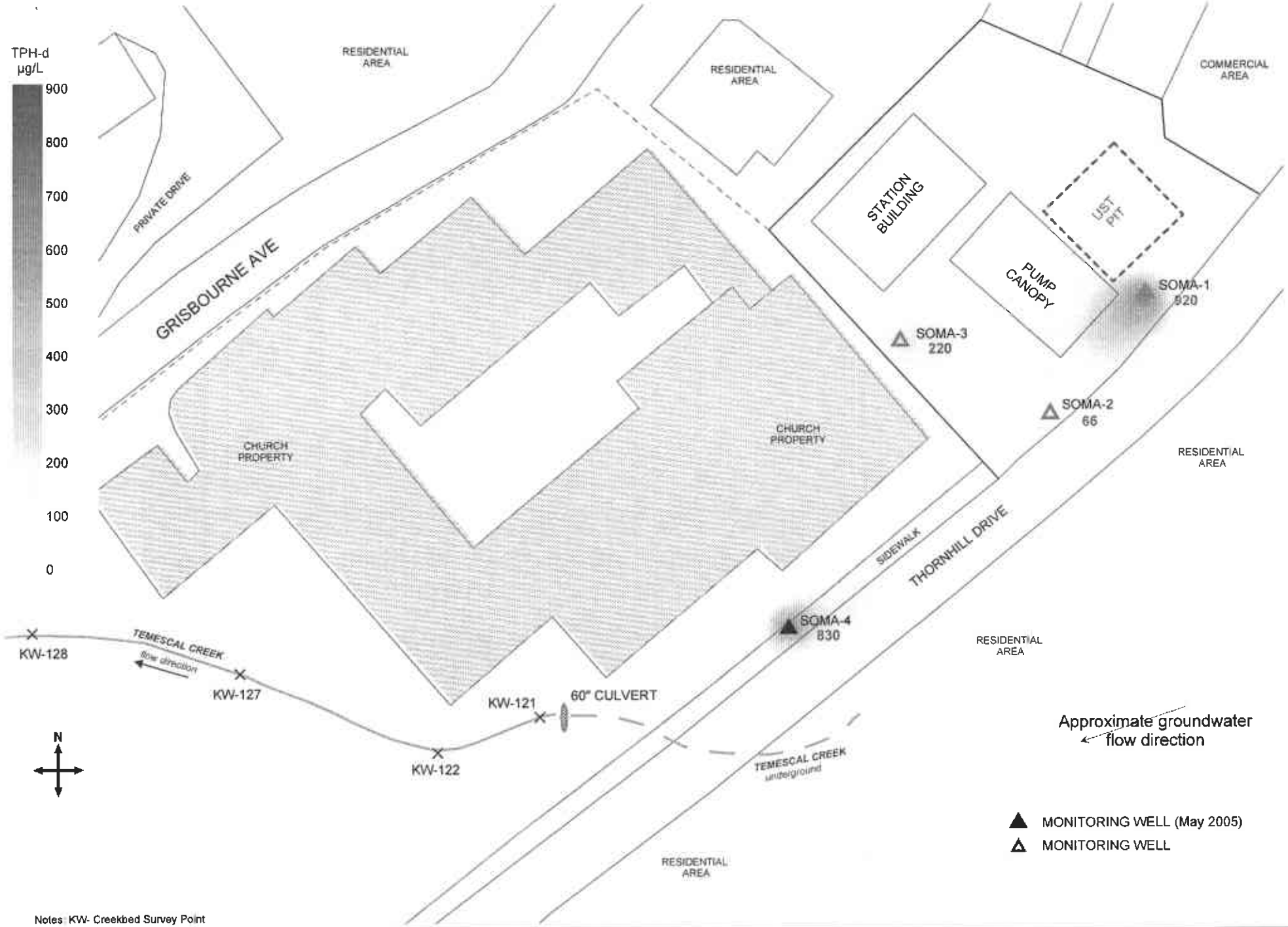


Figure 4: Contour map of TPH-g concentrations in groundwater. February 2006.



Notes: KW- Creekbed Survey Point

approximate scale in feet

0 25 50

Figure 5: Contour map of TPH-d concentrations in groundwater.
February 2006.

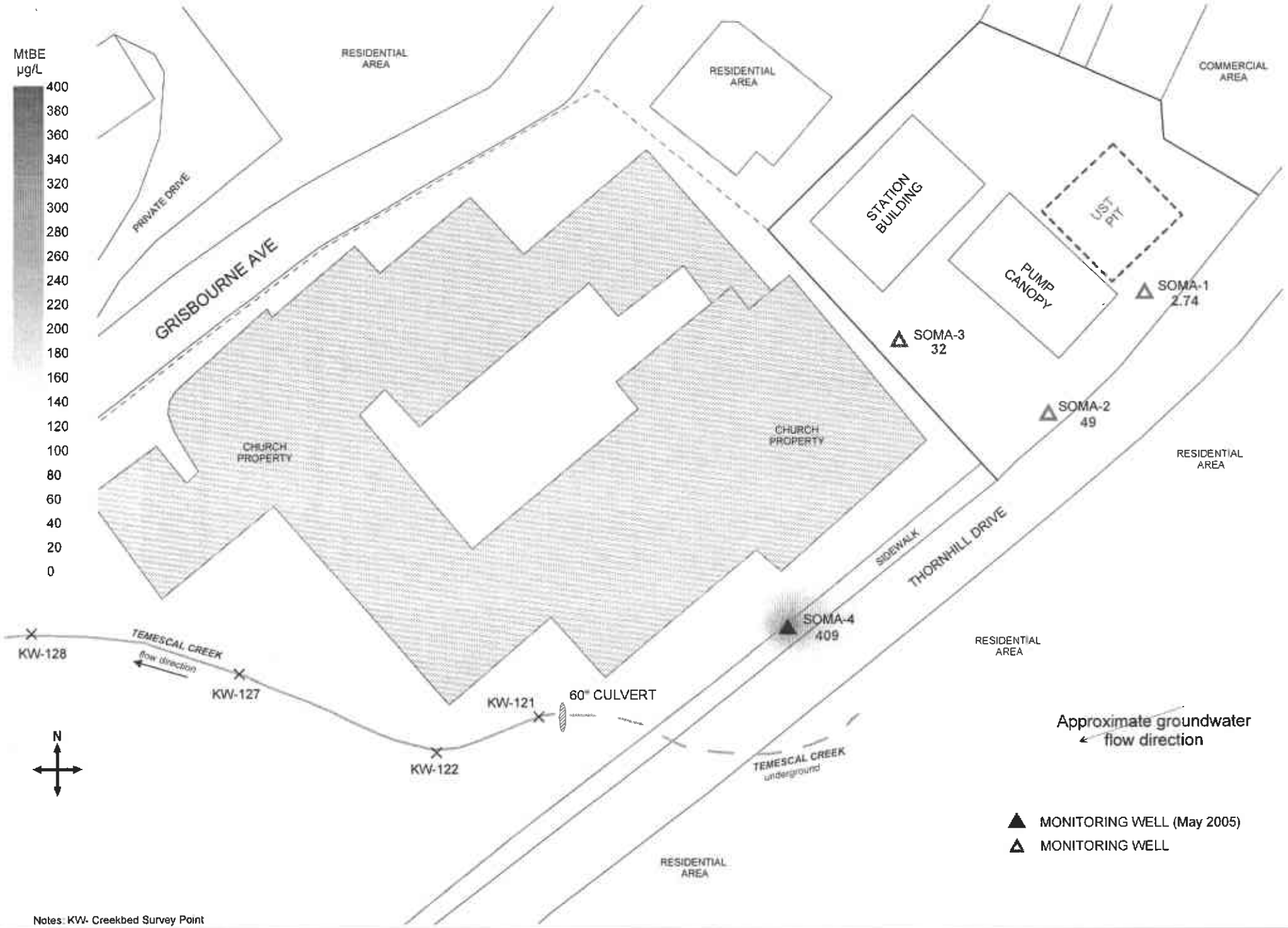


Figure 6: Contour map of MtBE concentrations in groundwater.
(EPA Method 8260B). February 2006.

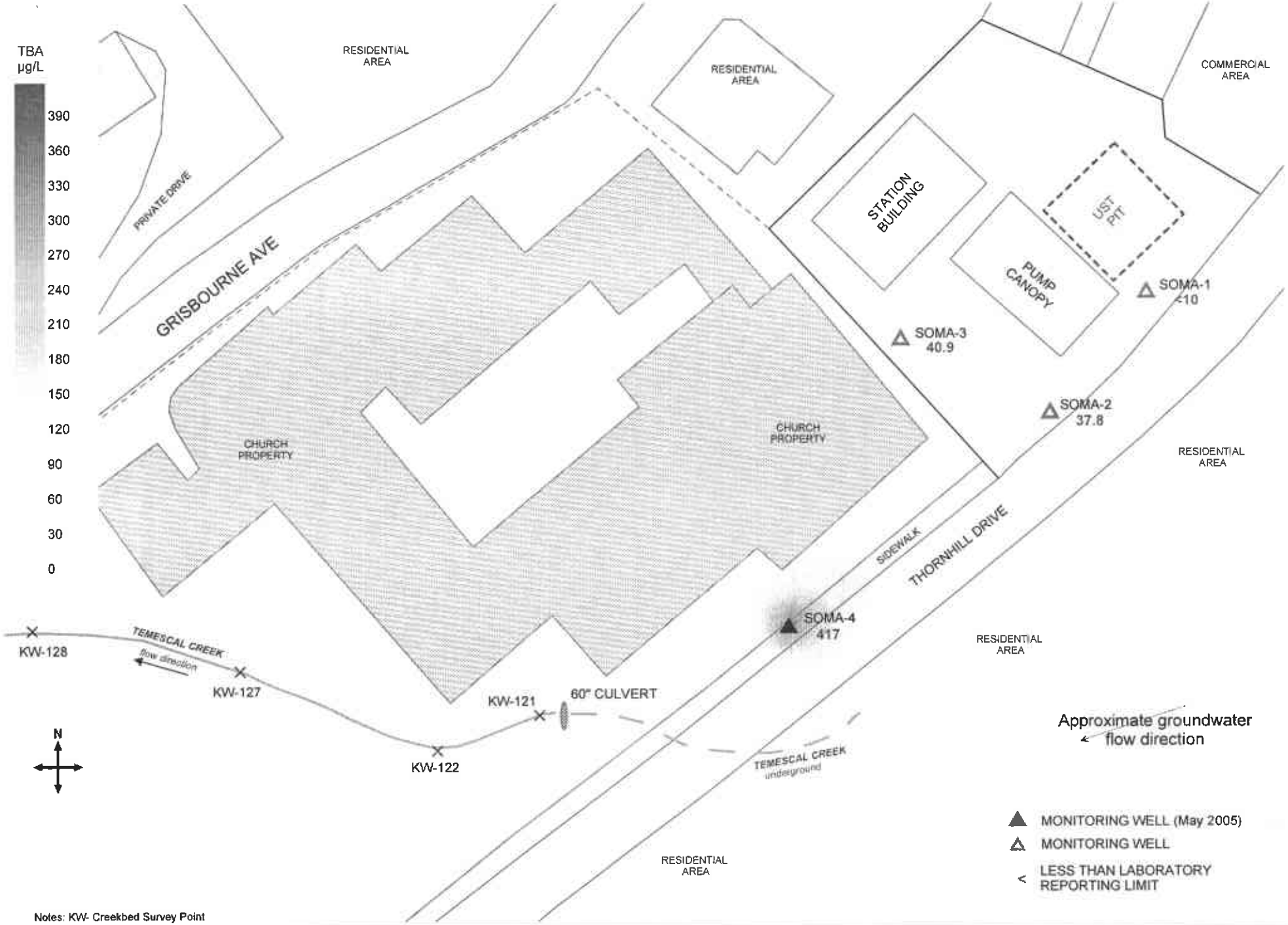


Figure 7: Contour map of TBA concentrations in groundwater.
February 2006.

APPENDIX A

SOMA's Groundwater Monitoring Procedures

Field Activities

On February 1, 2006, SOMA's field crew conducted a groundwater monitoring event in accordance with the procedures and guidelines of the California Regional Water Quality Control Board and the Alameda County Health Care Services. During this groundwater monitoring event three on-site wells (SOMA-1 to SOMA-3) and one off-site well SOMA-4 were monitored.

The depth to groundwater in each monitoring well was measured from the top of the casing to the nearest 0.01 foot using an electric sounder. The top of the casing elevation data and the depth to groundwater in each monitoring well were used to calculate the groundwater elevation. The top of casing elevation was based on an elevation datum of 37 feet NAVD88. Appendix B shows the survey datum.

Prior to the collection of samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC). In order to ensure that the final samples were in equilibrium with (and representative of) the surrounding groundwater, during purging, several samples were taken for field measurements of pH, temperature and EC. The field parameters were measured using a Hanna pH, conductivity, and temperature meter. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

Appendix B details the field measurements taken during the monitoring event.

The purging of the wells continued until the parameters for pH, temperature and EC stabilized or three casing volumes were purged. A disposable polyethylene bailer was used to collect sufficient samples from each well for laboratory analyses. The groundwater sample was transferred to five 40-mL VOA vials and preserved with hydrochloric acid. The vials were then sealed to prevent the development of air bubbles within the headspace. The groundwater sample collected from each well was also transferred into two 1-liter amber non-preserved glass containers.

After the groundwater samples were collected they were placed on ice in an ice chest and maintained at 4^0C. A chain of custody (COC) form was written for all the samples. After the sampling was complete, on February 1, 2006, SOMA's field crew delivered the groundwater samples along with the COC form to Pacific Analytical Laboratory in Alameda, California.

Laboratory Analysis

Pacific Analytical Laboratory, a state certified laboratory, analyzed the groundwater samples for TPH-g, BTEX, MtBE, gasoline oxygenates, and lead scavengers. Samples for TPH-d and TPH-mo measurements were subcontracted through Curtis and Tompkins, Ltd in Berkeley, California.

TPH-g, BTEX, MtBE, gasoline oxygenates, and lead scavengers measurements were prepared using EPA Method 5030B and analyzed using EPA Method 8260B. TPH-d and TPH-mo measurements were prepared using EPA Method 3520C and analyzed using Method 8015B.

Appendix B

Table of Elevations & Coordinates on Monitoring Wells

&

Field Measurements of the Physical and Chemical

Properties of the Groundwater Samples

Collected During the First Quarter 2006

DATE: 4/28/04
JOB# A04549

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL, PROJECT # 2830
5725 THORNHILL DRIVE, OAKLAND

WELL ID #	NORTHING (FT.) / LATITUDE (D.M.S.)	EASTING (FT.) / LONGITUDE (D.M.S.)	ELEVATION (FT.)	DESCRIPTION
SOMA-1	2130799.64	6067141.82	576.47	TOP PIPE , BLACK MARK N. SIDE (FELT TIP) (LOCKED AND TIGHT)
	N 37°50'03.73174"	W 122°12'44.98565"	576.72	RIM
			576.70	CONC.
SOMA-2	2130764.55	6067114.08	575.50	TOP PIPE , BLACK MARK N. SIDE (FELT TIP) (LOCKED AND TIGHT)
	N 37°50'03.37985"	W 122°12'45.32339"	575.74	RIM
			575.75	CONC.
SOMA-3	2130785.85	6067071.01	575.92	TOP PIPE , BLACK MARK N. SIDE (FELT TIP) (LOCKED AND TIGHT)
	N 37°50'03.58261"	W 122°12'45.86506"	576.31	RIM
			576.30	CONC.

ADDITIONAL POINTS

PT#	NORTHING (FT.)	EASTING (FT.)	ELEVATION (FT.)	DESCRIPTION
108	2130820.55	6067045.27	N/A	BL<
109	2130800.14	6067066.40	N/A	BL<
110	2130830.97	6067096.14	N/A	BL<
104	2130818.02	6067033.92	N/A	BLOCK WALL 8" <PT
105	2130808.04	6067041.66	N/A	BLOCK WALL 8" END
106	2130821.74	6067037.78	N/A	BLOCK WALL 8" END
107	2130821.83	6067037.75	N/A	FNC-WD B-C CL
111	2130872.58	6067087.64	N/A	FNC-WD END CL
112	2130837.52	6067194.12	N/A	FOGL
113	2130793.20	6067156.45	N/A	FOGL
114	2130759.63	6067123.75	N/A	FOGL
115	2130740.79	6067101.26	N/A	FOGL END
117	2130628.30	6066947.69	N/A	TC
116	2130738.69	6067095.34	N/A	TC END
128	2130693.29	6066817.93	558.29	C/L CREEK +0.4' TO TOP OF WATER
127	2130685.30	6066880.75	559.78	C/L CREEK +0.4' TO TOP OF WATER
122	2130664.83	6066937.67	562.81	C/L CREEK +0.4' TO TOP OF WATER
121	2130676.03	6066966.79	563.15	C/L 60" CULVERT +0.5' TO TOP OF WATER

Kier & Wright Engineers Surveyors, Inc.
1233 Quarry Lane, Suite 145, Pleasanton, CA 94566
Phone (925) 249-6555,
Fax (925) 249-6563

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JOB# A04549

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL, PROJECT # 2830
5725 THORNHILL DRIVE, OAKLAND

BENCH MARK: NGS Bench mark No.PID# HT2487
DESCRIPTION FROM NGS DATA SHEET:
DESCRIBED BY EAST BAY MUNICIPAL UTILITIES DISTRICT 1947 (SPH) THE AZIMUTH MARK IS AN EBMUD TRIANGULATION STATION DISC SET 1 FOOT BELOW THE SURFACE AND COVERED BY AN 8 INCH IRON CASTING WITH A REMOVABLE LID MARKED CITY MONUMENT. IT IS IN THE SIDEWALK IN FRONT OF A SAFEWAY STORE AT THE INTERSECTION OF GRAND AND WILDWOOD AVENUES. IT IS 1.5 FEET SOUTHEAST OF THE SOUTHEAST CURB OF WILDWOOD AVE., 6.2 FEET OF EAST CURB OF GRAND AVE. AND 10.4 FEET NORTHEAST OF POWERPOLE. THE MARK IS STAMPED LINDA AZIMUTH MARK 1947.

Elevation =37. FEET NAVD88 Datum
BY VERTCON

HORIZONTAL CONTROL:

PID - AA5496
NORTHING =1,988,577.07 , EASTING = 6,077,862.13 FEET; EPOCH DATE = 1991.35

PID - HT2541
NORTHING = 2,130,331.28 , EASTING = 6,062,624.49 FEET; EPOCH DATE = 1991.35

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.

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PRINTED: 6/9/2005
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DATE: 8/17/05
Job No. 205048

DATE OF SURVEY 8/12/05
INSTRUMENT LEICA TCA 1100L

TABLE OF ELEVATIONS & COORDINATES
ON MONITORING WELLS
SOMA ENVIRONMENTAL, PROJECT # 2830
3725 THORNHILL DRIVE, OAKLAND

WELL ID #	NORTHING (FT.) / LATITUDE (D.M.S.)	EASTING (FT.) / LONGITUDE (D.M.S.)	ELEVATION (FT.)	DESCRIPTION
SOMA-4	2130703.437	6067044.632	572.65	TOP PIPE , BLACK MARK N. SIDE (FELT TIP)
	N 37°50'02.76318"	W 122°12'46.17502"	573.03	RIM
			573.03	CONC.
DECIMAL DEGREES	N 37°.83410088	W 121°.21282639		
		LOCAL CONTROL		
SOMA-2	2130764.55	6067114.08	575.50	TOP PIPE
	N 37°50'03.37985"	W 122°12'45.32339"		
SOMA-3	2130785.85	6067071.01	575.92	TOP PIPE
	N 37°50'03.58261"	W 122°12'45.86506"		

BENCH MARK: NGS Bench mark No.PID# HT2487
DESCRIPTION FROM NGS DATA SHEET:
DESCRIBED BY EAST BAY MUNICIPAL UTILITIES DISTRICT 1947 (SPH) THE AZIMUTH MARK IS AN EBMUD TRIANGULATION STATION DISC SET 1 FOOT BELOW THE SURFACE AND COVERED BY AN 8 INCH IRON CASTING WITH A REMOVABLE LID MARKED CITY MONUMENT. IT IS IN THE SIDEWALK IN FRONT OF A SAFEWAY STORE AT THE INTERSECTION OF GRAND AND WILDWOOD AVENUES. IT IS 1.5 FEET SOUTHEAST OF THE SOUTHEAST CURB OF WILDWOOD AVE., 6.2 FEET OF EAST CURB OF GRAND AVE. AND 10.4 FEET NORTHEAST OF POWERPOLE. THE MARK IS STAMPED LINDA AZIMUTH MARK 1947.

Elevation =37. FEET NAVD88 Datum
BY VERTCON

ALIQUOT ASSOCIATES
1390 MAIN STREET STE 310
WALNUT CREEK, CA. 94596
925-476-2300

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DATE: 8/17/05
Job No. 205048

DATE OF SURVEY 8/12/05
INSTRUMENT LEICA TCA 1100L

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL, PROJECT # 2830
5725 THORNHILL DRIVE, OAKLAND

HORIZONTAL CONTROL:

PID - AA5496
NORTHING = 1,988,577.07 , EASTING = 6,077,862.13 FEET: EPOCH DATE = 1991.35

PID - HT2541
NORTHING = 2,130,331.28 , EASTING = 6,062,624.49 FEET: EPOCH DATE = 1991.35

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.

NOTE

THE VALUES FOR SOMA-4 ARE DERIVED FROM LOCAL CONTROL BASED UPON CONTROL VALUE USED FROM THE PREVIOUS SITE SURVEY AS PROVIDED BY KIER AND WRIGHT

ALIQUOT ASSOCIATES
1390 MAIN STREET STE 310
WALNUT CREEK, CA. 94596
925-476-2300

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ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-1	**Project No.:**	2831
Casing Diameter:	2 inches	**Address:**	5725 Thornhill Drive
Depth of Well:	22.25 feet		Oakland, CA
Top of Casing Elevation:	576.87 feet	**Date:**	February 1, 2006
Depth to Groundwater:	5.50 feet	**Sampler:**	Mehran Nowroozi
Groundwater Elevation:	571.37 feet		
Water Column Height:	22.25 feet		
Purged Volume:	14 gallons		

Purging Method:	**Bailer**	☐	**Pump**	☑	
Sampling Method:	**Bailer**	☑	**Pump**	☐	
Color:	**No**	☑	**Yes** ☐	**Describe:**	
Sheen:	**No**	☑	**Yes** ☐	**Describe:**	
Odor:	**No**	☐	**Yes** ☐	**Describe:**	

Field Measurements:

Time	Vol (gallons)	pH	Temp (^{0}C)	E.C. (µs/cm)
10:30 am	Start Purge			
10:53 am	4	6.62	17.4	635
11:10 am	8	6.81	11.6	611
11:40 am	14	6.80	11.5	636
Sample @ 11:50 am				

ENVIRONMENTAL ENGINEERING, INC

Well No.:	SOMA 2	**Project No.:**	2831
Casing Diameter:	2 inches	**Address:**	5725 Thornhill Drive
Depth of Well:	[illegible] feet		Oakland, CA
Top of Casing Elevation:	575.50 feet	**Date:**	February 1, 2006
Depth to Groundwater:	[illegible] feet	**Sampler:**	Mehran Nowroozi
Groundwater Elevation:	568.79 feet		
Water Column Height:	[illegible] feet		
Purged Volume:	16 gallons		

Purging Method:	**Bailer** ☐	**Pump** ☑		
Sampling Method:	**Bailer** ☐	**Pump** ☐		
Color:	**No** ☐	**Yes** ☐	**Describe:**	________
Sheen:	**No** ☐	**Yes** ☐	**Describe:**	________
Odor:	**No** ☑	**Yes** ☐	**Describe:**	________

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
11 25 AM	Start	[illegible]		
11:28	4	6.16	17.[illegible]	[illegible]
11:31	8	6.[illegible]	17.[illegible]	615
11:35	12	[illegible]	[illegible]	640
11:39	16	6.29	17.1[illegible]	[illegible]
11.45 Sampled				

ENVIRONMENTAL ENGINEERING, INC

Well No.:	SoMA3	**Project No.:**	2831
Casing Diameter:	2 inches	**Address:**	5725 Thornhill Drive
Depth of Well:	27.82 feet		Oakland, CA
Top of Casing Elevation:	572.92 feet	**Date:**	February 1, 2006
Depth to Groundwater:	7.22 feet	**Sampler:**	Mehran Nowroozi
Groundwater Elevation:	565.72 feet		
Water Column Height:	20.60 feet		
Purged Volume:	16 gallons		

Purging Method:	**Bailer** ☐	**Pump** ☑		
Sampling Method:	**Bailer** ☑	**Pump** ☐		
Color:	**No** ☑	**Yes** ☐	**Describe:**	
Sheen:	**No** ☑	**Yes** ☐	**Describe:**	
Odor:	**No** ☑	**Yes** ☐	**Describe:**	

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
12:15	Start Purge			
12:18 PM	4	7.60	16.50	690
12:21 PM	8	7.30	16.30	745
12:24 PM	12	7.10	16.20	755
12:28 PM	16			
12:35 PM	Sampled			

ENVIRONMENTAL ENGINEERING, INC

Well No.:	Soma 4	**Project No.:**	2831
Casing Diameter:	2 inches	**Address:**	5725 Thornhill Drive
Depth of Well:	19.70 feet		Oakland, CA
Top of Casing Elevation:	572.55 feet	**Date:**	February 1, 2006
Depth to Groundwater:	7.68 feet	**Sampler:**	Mehran Nowroozi
Groundwater Elevation:	564.97 feet		
Water Column Height:	12.02 feet		
Purged Volume:	12 gallons		

Purging Method:	**Bailer** ☐		**Pump** ☑		
Sampling Method:	**Bailer** ☑		**Pump** ☐		
Color:	**No** ☑		**Yes** ☐	**Describe:**	
Sheen:	**No** ☑		**Yes** ☐	**Describe:**	
Odor:	**No** ☑		**Yes** ☐	**Describe:**	

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (us/cm)
1:00 pm	Start Purging			
1:03 PM	4	6.70	15.60	475
1:06 PM	8	6.65	15.75	485
1:10 PM	12	6.60	15.70	495
Sample @ 1:15 PM				