Site Investigation Workplan

Toyon Meadow, Mills College
Oakland, California

March 27, 1996

Prepared By:

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K275GREP.020
3-27-96

HARZA

March 27, 1996

Ms. Madhulla Logan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: Site Investigation Workplan
Mills College - Toyon Meadow, Oakland, California
Project No.: K275-G

Dear Ms. Logan:

Harza is pleased to present this workplan for additional ground water sampling at the above referenced site. Should you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Harza Consulting Engineers and Scientists

Derek Armentrout
Project Chemist

DA:vc\encl.
Copies: Addressee
Mr. David Johnson (Mills College)

K275GREP.020
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Site Investigation Workplan

Toyon Meadow, Mills College, Oakland, California

1.0 INTRODUCTION

This workplan outlines a scope of work for collecting and analyzing additional ground water samples at the Mills Hall/Toyon Meadow site at Mills College, 5000 MacArthur Boulevard, Oakland, California (Figure 1). Alameda County Health Care Services Agency (ACHCSA) requested the work to evaluate closure of the site. Harza has been conducting ground water monitoring at Toyon Meadow since June 1991 in response to a leaking fuel-oil underground storage tank (UST) removed from the facility.

1.1 Site History

In June 1989, a small-capacity, fuel-oil UST was removed from the parking lot of the former Mills Kitchen building. This area is now developed as an open lawn and landscape area referred to as Toyon Meadow. Elevated levels of total petroleum hydrocarbons as diesel (TPHd), up to 6,300 parts per million (ppm), were detected in soil samples collected from the excavation at the time of removal, and approximately 250 cubic yards of soil were excavated from the vicinity of the former tank and disposed of off-site. Closure samples collected 12 to 13 feet below ground surface (bgs) contained from 260 ppm to 5,000 ppm TPHd.

Harza (formerly Kaldveer Associates) performed a soil and ground water quality investigation at the site in 1989 following tank removal to determine the areal extent of impact. TPHd was detected at concentrations up to 11,000 ppm in soil samples at depths of 12 to 15 feet bgs for a distance of at least 60 feet downgradient of the former tank location.

Ground water at the site occurs at approximately 12 feet bgs. In July 1989, monitoring well MHW-1 was installed approximately 50 feet downgradient from the former tank location, as shown in Figure 2. Two additional wells (MHW-2 and MHW-3) were installed in June 1991. Well MHW-2 was installed in the approximate location of the former UST, and well MHW-3 monitors downgradient water quality. During landscape renovation activities in May 1994, monitoring well MHW-1 was destroyed under permit by a licensed drilling contractor. A new well, MHW-1A, was installed in the approximate location of the destroyed well. Ground water monitoring is currently performed on a semiannual schedule.

1.2 Ground Water Quality

TPHd has been detected in ground water samples collected from well MHW-1/1A during three of the seven sampling events performed over the past four years. Concentrations have ranged from 0.06 to 0.09 ppm. Except for the initial sampling following well installation in 1991, TPHd concentrations detected in well MHW-2 have been below 0.61 ppm. TPHd has never been detected in downgradient well MHW-3. Benzene, toluene, ethylbenzene, and xylenes (BTEX) have not been detected in any of the three wells with the exception of a detection in April 1995, that is believed to have resulted from laboratory or field cross-contamination. Analytical results from ground water sampling are presented in Table 1.

The measured ground water flow direction has consistently been toward the southwest. Ground water contours from October 1995 are shown on Figure 2.

Harza requested case closure for the site on behalf of Mills College in a letter to ACHCSA dated December 11, 1995. On February 21, 1996, Ms. Madhulla Logan of ACHCSA indicated in a telephone conversation with Mr. Derek Armentrout of Harza that collection and analysis of additional ground water samples would be required to provide a final evaluation of the potential extent of ground water impact at the site. The scope of work outlined in this workplan is designed to address that request.

2.0 SCOPE OF WORK

Our proposed scope of work will include the following:

2.1 Sample Collection

Ground water samples will be collected from four locations (GP-1 through GP-4) as shown on Figure 2. The locations were selected to provide additional downgradient evaluation based on the observed ground water gradient at the site.

Prior to collecting samples, Harza will contact Underground Service Alert (USA) and obtain drilling permits from the Alameda County Flood Control and Water Conservation District. Harza will measure ground water levels in the three existing wells to confirm the ground water gradient.

Ground water samples will be collected using a GeoProbe system, which does not generate soil cuttings. Samples will be collected through a hollow-stem rod using a Teflon or stainless-steel

bailer, or a peristaltic pump equipped with Teflon tubing. Ground water pH and electrical conductivity (EC) will be measured in the field.

Samples will be collected in appropriate containers, labeled, and transported to the analytical laboratory in cooled containers under chain-of-custody control. The boreholes will be backfilled with neat cement in accordance with local requirements. Sampling equipment will be cleaned before use and between sampling locations to minimize the potential for cross-contamination.

2.2 Sample Analysis

Samples will be submitted to American Environmental Network (AEN) of Pleasant Hill, California for analysis for total petroleum hydrocarbons as diesel (TPHd) using EPA Method 3550/8015M, and for benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020. AEN is certified by the State of California for the analyses to be performed.

2.3 Reporting

Harza will prepare a report which will include a description of the investigation, the ground water gradient and flow direction, results of laboratory analyses, and our conclusions concerning the extent of contamination in ground water at the site.

3.0 SCHEDULE

Harza anticipates completing field activities during the week of April 1 through April 5, 1996. The report will be completed three weeks after samples are collected.

TABLE

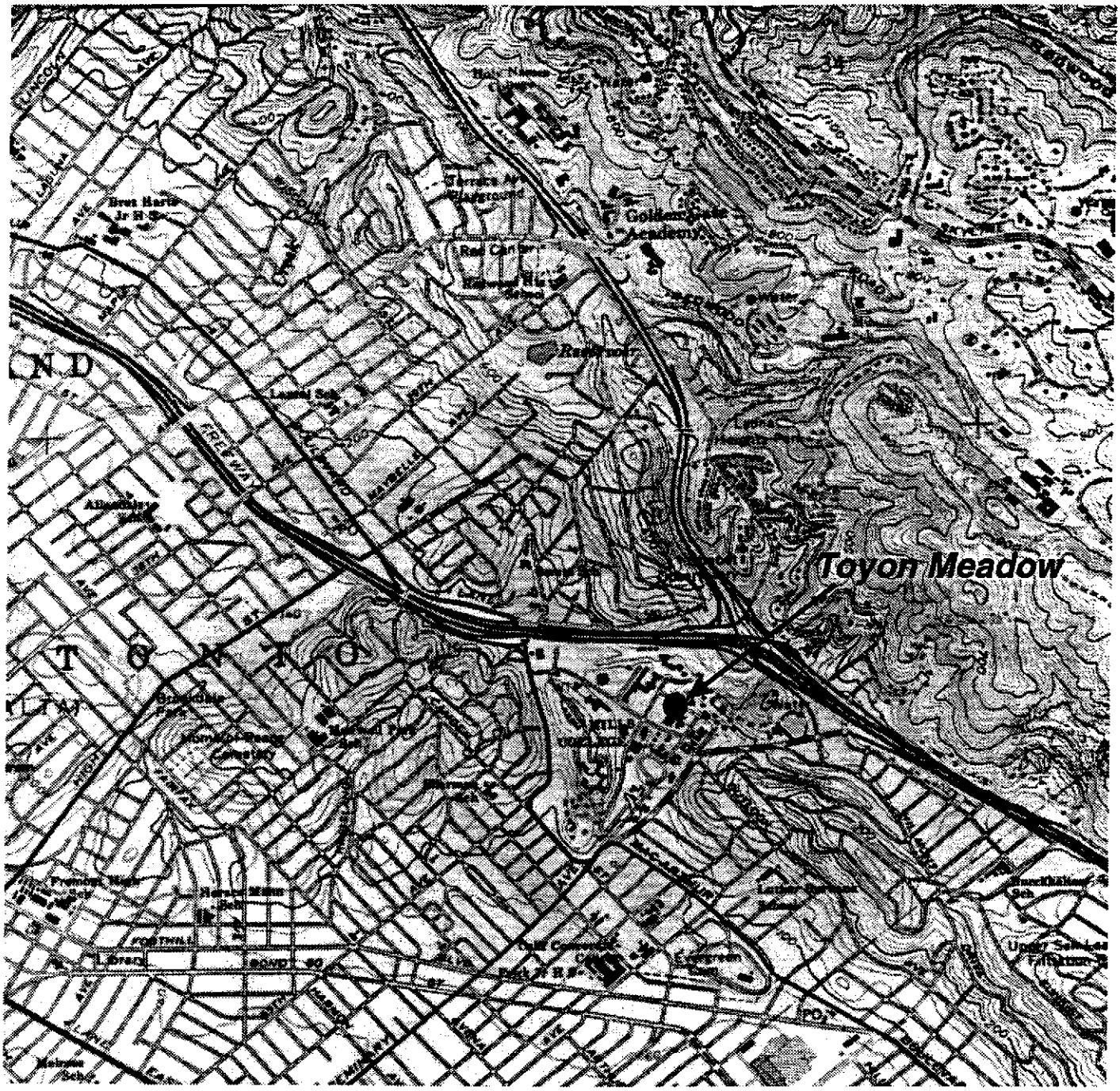
TABLE 1
Summary of Ground Water Sample Analyses
October 1995 Semiannual Ground Water Sampling Report
Mills Hall/Toyon Meadow, Oakland, California

Well	Date	TPHd ppm	TPH Oil ppm	Benzene ppm	Toluene ppm	Ethylbenzene ppm	Xylenes ppm
MHW-1/1A	06/91	**0.06**	ND	ND	ND	ND	ND
	03/92	ND	--	ND	ND	ND	ND
	10/92	**0.09**	ND	ND	ND	ND	ND
	05/94	ND	--	ND	ND	ND	ND
	10/94	ND	--	ND	ND	ND	ND
	04/95	**0.06**	--	**0.002**	**0.0006**	ND	ND
	10/95	ND	--	ND	ND	ND	ND
MHW-2	06/91	**3.2**	ND	ND	ND	ND	ND
	03/92	**0.1**	--	ND	ND	ND	ND
	10/92	**0.61**	ND	ND	ND	ND	ND
	05/94	**0.2**	--	ND	ND	ND	ND
	10/94	**0.4**	--	ND	ND	ND	ND
	04/95	**0.52**	--	ND	ND	ND	ND
	10/95	**0.4**	--	ND	ND	ND	ND
MHW-3	06/91	ND	ND	ND	ND	ND	ND
	03/92	ND	--	ND	ND	ND	ND
	10/92	ND	ND	ND	ND	ND	ND
	05/94	ND	--	ND	ND	ND	ND
	10/94	ND	--	ND	ND	ND	ND
	04/95	ND	--	**0.0009**	ND	ND	ND
	10/95	ND	--	ND	ND	ND	ND

NOTES

TPHd: Total petroleum hydrocarbons as diesel
TPH Oil: Total petroleum hydrocarbons as oil
ppm: Parts per million or milligrams per liter
ND: Not detected at or above the laboratory method reporting limits
--: Not tested
Well MHW-1 was replaced by MHW-1A on May 2, 1994 prior to the monitoring event

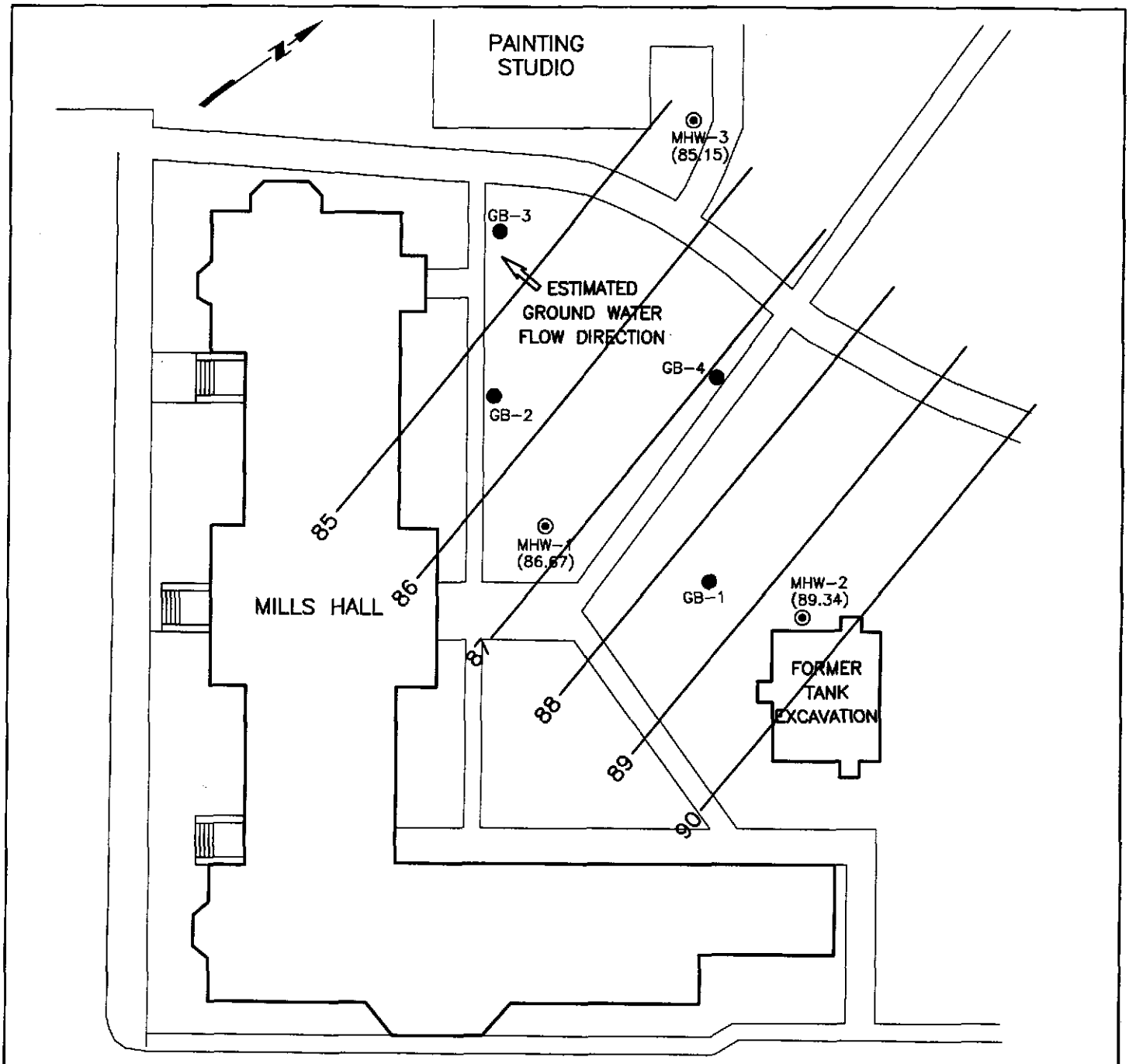
FIGURES



BASE: By U.S.G.S. Oakland East, California, 7.5 Min. Quadrangle Topography.

E275G1

Date		SITE VICINITY MAP	Figure
11/95	HARZA	MILLS HALL / TOYON MEADOW Oakland, California	1
Project No. K275-G			



LEGEND

MHW-3 ◉ APPROXIMATE LOCATION OF MONITORING WELL WITH RELATIVE GROUND WATER ELEVATION

GB-4 ● APPROXIMATE LOCATION OF PROPOSED GROUND WATER SAMPLE

90 —— GROUND WATER CONTOUR 10/19/95

BASE PROVIDED BY MILLS COLLEGE, DATED 3/88

APPROXIMATE SCALE IN FEET

0 40 80

3-96-2

Rev.	Drawn By	Chk'd By	Date
0	D.F.	M.A.	3/13/96

HARZA

SITE PLAN

MILLS HALL / TOYON MEADOW
Oakland, California

Figure 2

Project No. K275-G