Western Operations

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90 OCT 32 PM 12:48

Clayton
ENVIRONMENTAL
CONSULTANTS

October 31, 1990

Clayton Project No. 31820.00

Dr. Ravi Arulanantham
Hazardous Materials Specialist
ALAMEDA COUNTY HEALTH CARE SERVICES
80 Swan Way, Suite 200
Oakland, California 94303

Subject: Workplan for Groundwater Monitoring
Busick Air
6341 Scarlett Court
Dublin, California

Dear Dr. Arulanantham:

Clayton is pleased to submit this workplan for Busick Air. It provides your required plan of action, as discussed in our phone conversation on Tuesday, October 30, 1990, and our site walk on October 12, 1990.

If you have any questions or require any further information, please call me at (415) 426-2676.

Sincerely,

Alan D. Gibbs, R.G.
Supervisor, Geology

ADG/jm
Enclosure

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Approved over the phone on 11/1/90 to Alan Gibbs

Work Plan for Groundwater Monitoring at BUSICK AIR 6341 Scarlett Court Dublin, California

Clayton Project No. 31820.00
October 30, 1990

CONTENTS

1.0 INTRODUCTION

Clayton Environmental Consultants, Inc. was retained by Busick Air to develop and implement a work plan for groundwater monitoring at its property at 6341 Scarlett Court (site) in Dublin, California (Figure 1). This work plan was prepared based on the recommendations provided by Mr. Ravi Arulanantham, of the Alameda County Department of Environmental Health (ACDEH), and Regional Water Quality Control Board (RWQCB) guidelines for investigation of fuel leak sites.

Clayton conducted a site walk with Mr. Arulanantham on October 12, 1990. During this visit Mr. Arulanantham requested that three boreholes be installed in locations which he designated, for collection of water samples. Mr. Arulanantham also requested that one monitoring well be installed within 10 feet (downgradient) of the former sump location (Figure 2).

2.0 BACKGROUND

Mr. Bruce Jacobson of Decon Environmental Services contacted Mr. Alan Gibbs, Clayton supervisor of Geology, concerning recent excavation of a sump at the site. Overexcavation was performed to a depth of approximately 6 feet until groundwater was encountered. The sump had evidently been used by a previous tenant. Chlorinated solvents were reportedly used by the tenant. Decon collected water samples from the excavation and proceeded to pump and treat the water several times. Laboratory analytical results for water samples indicated a reduction of chlorinated solvent concentrations after pumping (Appendix A). Final results from groundwater sampling indicated that chlorinated solvent concentrations in groundwater do not meet California Regional Water Quality Control Board Drinking Water Standards.

3.0 OBJECTIVE

The objective of this monitoring program is to monitor and define the lateral and vertical extent of the chlorinated hydrocarbon contamination recognized in the soil and groundwater near the former sump excavation pit. To achieve this, Clayton proposes completion of the following tasks.

3.1 TASK 1: HEALTH AND SAFETY PLAN PREPARATION

A health and safety plan will be prepared based on the work plan activities and environmental investigations proposed at the site, as per the requirements of Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120).

3.2 TASK 2: BOREHOLE INSTALLATION AND GROUNDWATER SAMPLING

Clayton will supervise the drilling of four boreholes, one of which will be converted into a monitoring well (MW-1). Figure 2 shows the location of the boreholes and the monitoring well.

The boreholes will be drilled with a hollow-stem auger attached to a Mobile drilling rig. Before work begins on each borehole, the augers and soil sampler will be steam cleaned. The boreholes will be drilled to an approximate depth of 15 feet below ground surface (bgs).

During the drilling, the soil characteristics will be logged in the field by a Clayton geologist. Distinguishing features such as color, odor, and relative soil moisture content will be noted. Drilling activities will be conducted in accordance with RWQCB and ACDEH guidelines, under the supervision of a civil engineer or a geologist registered in the State of California.

A soil sample will be collected at the 5-foot interval in the monitoring well borehole only, so that lithological characteristics may be described and the sample can be analyzed. The sample will be collected in a 2.5-inch diameter brass tube that is 6 inches long. The tube ends will be covered with aluminum foil, capped with plastic caps, sealed with electrical tape, labeled, and placed into a pre-cooled ice chest chilled to 4°C prior to shipment to Clayton's state certified environmental laboratory in Pleasanton, California. Upon delivery to the laboratory, a chain-of-custody form will be completed listing analyses required. No soil sample will be collected for laboratory analysis below the saturated zone in monitoring well MW-1. Soil samples will not be collected from boreholes BH-1, BH-2, and BH-3.

To collect an undisturbed soil sample, three brass tubes will be placed in an 18-inch, split-barrel Sprague and Hennwood sampler, which will be attached to the drilling rod. Once the sampler and rod are in position, a 140-pound hammer positioned 30 inches above the sampling equipment will be allowed to free-fall onto the rod, advancing the sampling assembly to obtain an undisturbed sample. This technique will be used to drive the sampler 18 inches into undisturbed soil. The sampler will then be pulled from the borehole and disassembled, and the three brass tubes will be separated for visual inspection and labeling.

Waste drill cuttings will be placed into Department of Transportation (DOT)-approved drums for proper disposal at a later date. These drums will be labeled with the name of the site, address, well number, and the drum contents, and will be left at the site.

3.3 TASK 3: MONITORING WELL CONSTRUCTION AND SAMPLING

When we reach the desired depth in monitoring well MW-1, a 4-inch diameter PVC schedule 40 well casing and screen (0.010-inch) will be installed into the borehole. All well casings, screens, and bottom plugs will be precleaned prior to installation into the borehole. Sand will be added into the annular space to 1 foot above the screened section of the casing. A 1-foot bentonite seal will be placed above the sand pack by hydrating bentonite pellets. A neat cement seal will then be placed over the bentonite plug to ground surface. A watertight locking box will be installed over the well head to prevent tampering or surface runoff from entering the well. The monitoring well will be developed 72 hours after installation with an electrical submersible pump, to remove silt from the sand pack. The purged water will be stored onsite in a DOT-approved drum pending analytical results to determine proper disposal methods.

Temporary monitoring wells will be installed into boreholes BH-1, BH-2, and BH-3. The wells will be purged of 2 to 3 volumes prior to sampling as per the ACDEH guidelines. The PVC will then be removed from the boreholes and the holes will be backfilled with grout to the surface.

Seventy-two hours after developing the monitoring well MW-1, groundwater will be sampled from monitoring well MW-1, using Alameda County Water District guidelines for groundwater sampling and testing. Water samples will be placed in appropriate containers provided by Clayton's state-certified laboratory, labeled, and placed into an ice chest pre-cooled to 4°C for shipment to Clayton's laboratory. One trip blank will be provided in accordance with Clayton's quality assurance/quality control (QA/QC). Upon delivery to the laboratory, a chain-of-custody form will be completed listing analyses required.

3.4 TASK 4: LABORATORY ANALYSIS

Soil and groundwater samples will be analyzed for suspect chemical constituents by the following methods to detect volatile organics:

- EPA Method 8010, for combined purgeables (soil)
- EPA Method 601/602, for combined purgeables (water)

3.5 TASK 5: REPORT PREPARATION AND RECOMMENDATIONS

Upon completion of the laboratory analysis, Clayton will prepare a report summarizing the findings of the investigation. The report will include a discussion of the site investigation technique, soil and groundwater sampling, analytical results, a surveyed local groundwater flow directions and gradients from nearby monitoring wells, conclusions, and recommendations.

4.0 SCHEDULE

Work on this project can start immediately upon receiving authorization to proceed from ACDEH. All field equipment can be mobilized to the site within 3 weeks of receipt of authorization to proceed. Permitting and other regulatory liaison is anticipated to be completed within the same time period.
We anticipate that the project can be completed within 4 to 6 weeks of receipt of authorization from ACDEH.

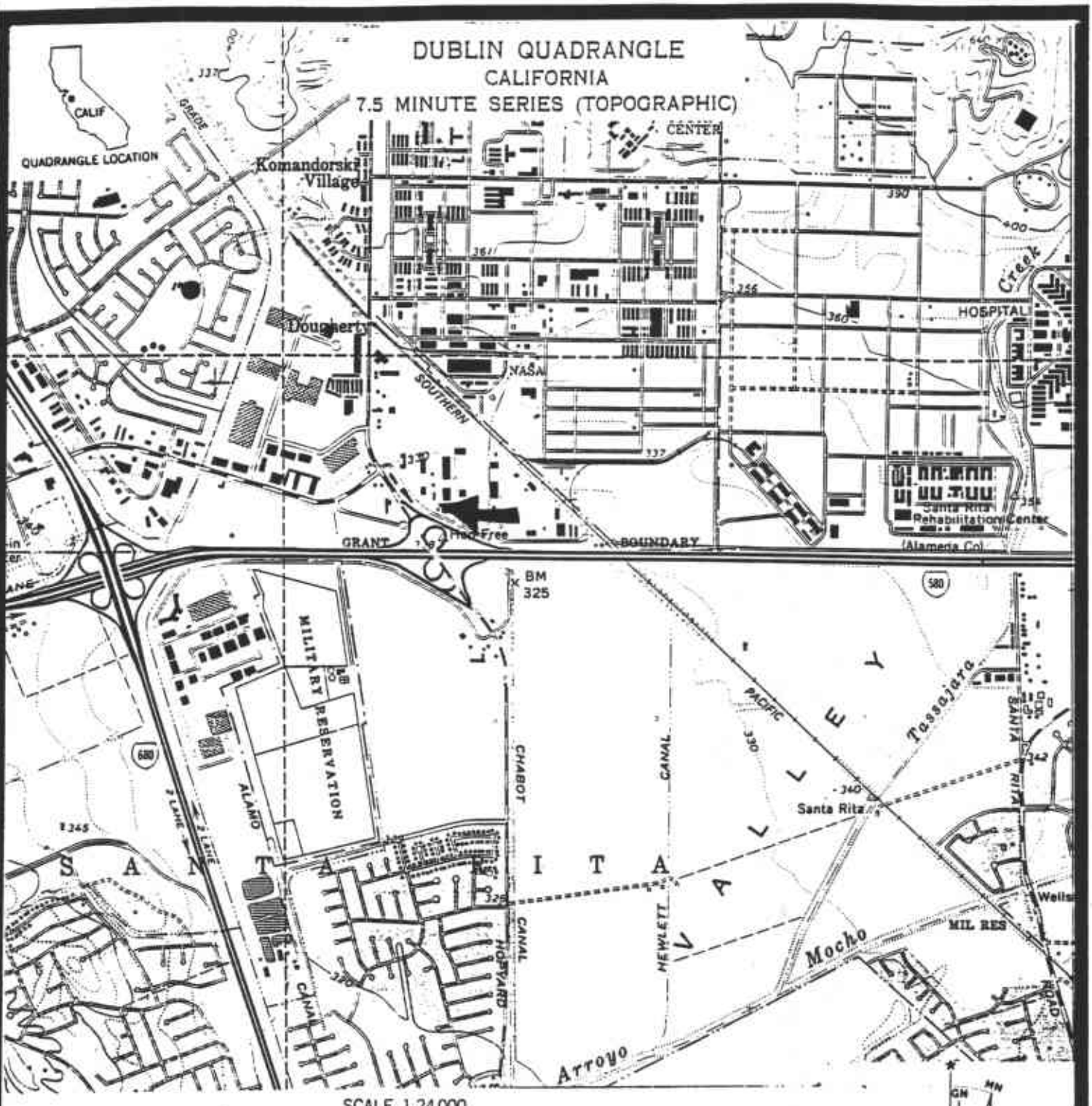
This work plan prepared by: _____ for Dariush

Dariush Dastmalchi
Geologist

This work plan reviewed by: _____

Alan D. Gibbs
Supervisor, Geology Group
Western Operations

October 30, 1990



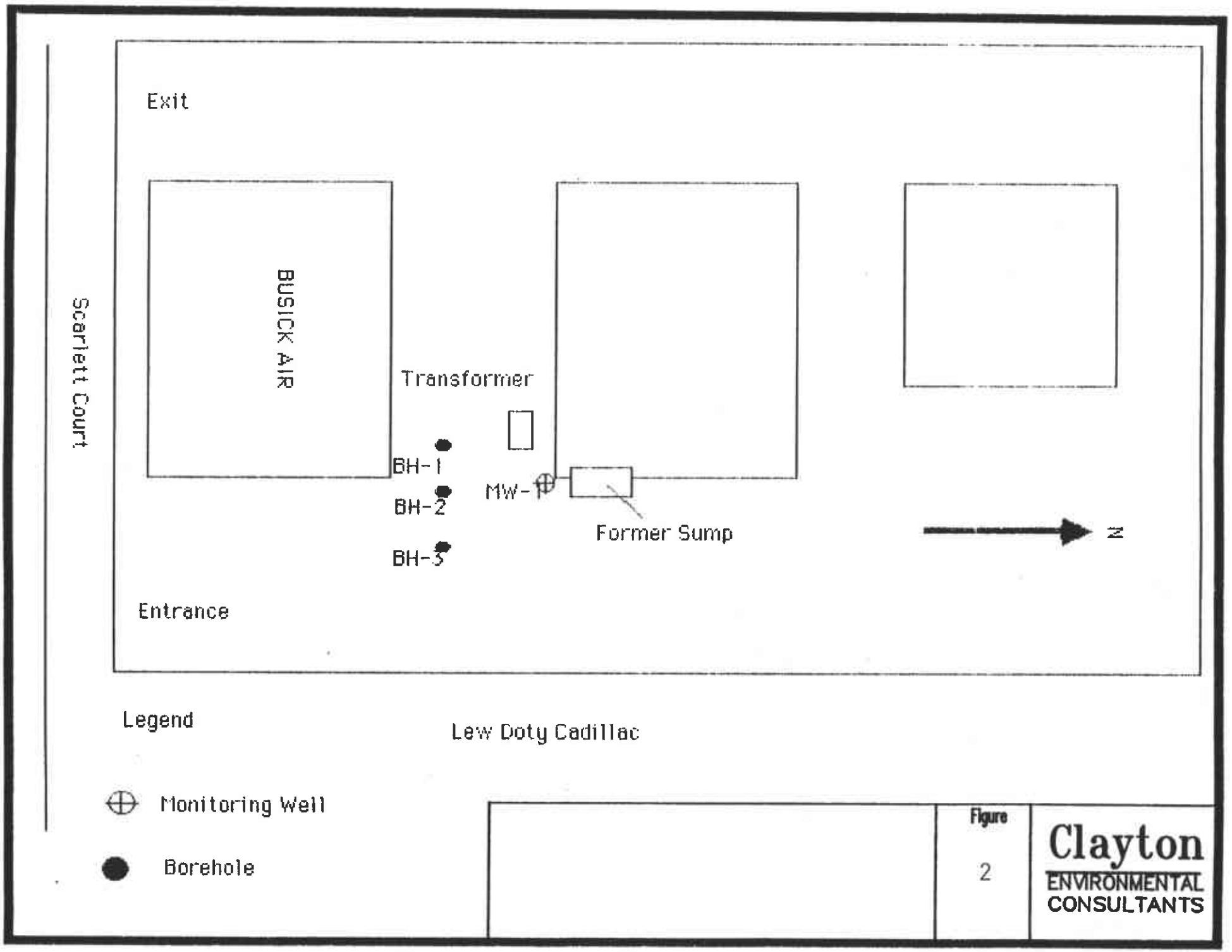
CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1980 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Clayton Environmental Consultants, Inc.

Figure 1

Site Location Map
Busick Air
6341 Scarlett Court
Dublin, California


Exit
BUSICK AIR
Scarlett Court
Transformer
BH-1
BH-2
BH-3
MW-
Former Sump
N
Entrance
Legend
Lew Doty Cadillac
Monitoring Well
Borehole
Figure
2
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APPENDIX A

LABORATORY REPORTS

RECEIVED SEP 2 1 1990

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52494-1
CLIENT: Decon Environmental
JOB NO.: 309

DATE SAMPLED: 09/14/90
DATE RECEIVED: 09/14/90
DATE ANALYZED: 09/18/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:309-0911-01

ppb

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	3 DCA
Methylene Chloride	4.0	12
trans-1,2-Dichloroethene	0.5	37 DCA
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	2
1,1,1-Trichloroethane	0.5	7 TCA
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	3
Trichloroethylene	0.5	3000 TCE
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	9
1,1,2-Trichloroethane	0.5	5
Tetrachloroethene	0.5	22
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15
MS/MSD average recovery = 87 % :MS/MSD RPD =< 1 %

Richard Srna, Ph.D.

Laboratory Director

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

DECON Environmental Services	Client Project ID:	309, Busik Air	Sampled: Jul 18, 1990
26102 Eden Landing Road, Suite 4	Sample Descript:	Water, #1	Received: Jul 18, 1990
Hayward, CA 94545	Analysis Method:	EPA 5030/8010	Analyzed: Jul 26, 1990
Attention: Chris Kwoka	Lab Number:	007-3857	Reported: Jul 31, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	20	N.D.
Bromoform	20	N.D.
Bromomethane	20	N.D.
Carbon tetrachloride	20	N.D.
Chlorobenzene	20	N.D.
Chloroethane	100	N.D.
2-Chloroethylvinyl ether	20	N.D.
Chloroform	10	N.D.
Chloromethane	10	N.D.
Dibromochloromethane	10	N.D.
1,2-Dichlorobenzene	40	N.D.
1,3-Dichlorobenzene	40	N.D.
1,4-Dichlorobenzene	40	N.D.
1,1-Dichloroethane	10	16
1,2-Dichloroethane	10	N.D.
1,1-Dichloroethene	20	72
Total 1,2-Dichloroethene	20	11,000
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	100	N.D.
trans-1,3-Dichloropropene	100	N.D.
Methylene chloride	40	170
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	10	240
1,1,1-Trichloroethane	10	200
1,1,2-Trichloroethane	10	14
Trichloroethene	10	10,000
Trichlorofluoromethane	20	N.D.
Vinyl chloride	40	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Cynthia H. Camba
Project Manager