

Western Operations

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92 APR 11 1992

Clayton
ENVIRONMENTAL
CONSULTANTS

April 2, 1992

Clayton Project 39824.00

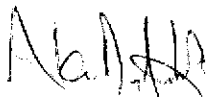
Dr. Ravi Arulanantham
Hazardous Materials Specialist
ALAMEDA COUNTY HEALTH CARE SERVICES
80 Swan Way, Suite 200
Oakland, California 94303

Dear Mr. Arulanantham:

Clayton Environmental Consultants, Inc. is pleased to present this copy of our quarterly monitoring report for Busick Air Conditioning located at 6341 Scarlett Court in Dublin, California.

If you have any questions or require any additional information, please call me at (510) 426-2676 or Richard Silva at (510) 426-2670.

Sincerely,



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

ADG/rjs
Enclosures

39824-00.02

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
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Clayton
ENVIRONMENTAL
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Additional Subsurface Investigation
at
Busick Air Conditioning
6341 Scarlett Court
Dublin, California

Clayton Project No. 31820.03

September 18, 1991

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Executive Summary

Clayton Environmental Consultants, Inc., was retained by Busick Air Conditioning to perform an additional subsurface investigation at 6341 Scarlett Court in Dublin, California (Figure 1). Ms. Doreen Green of Busick Air authorized the project on July 10, 1991, by accepting Clayton's Proposal No. 91-B-139 and its accompanying terms and conditions.

This work was based on Clayton's work plan, dated June 5, 1991, which was approved by Mr. Ravi Arulanantham of the Alameda County Health Agency (ACHA). It included the drilling of and sampling of groundwater from boreholes BH-4, BH-5, BH-6, and BH-7; the installation, development, and sampling of monitoring wells MW-2 and MW-3; and laboratory analysis of water samples for purgeable halocarbons and purgeable aromatics, by EPA Method 601/602.

Our findings and recommendations, based on this investigation, follow:

- Of the chemicals detected in the groundwater, the following concentrations exceeded regulatory guidelines:
 1. 46 ppb of TCE, found in BH-4
 2. 15 ppb of cis-1,2-DCE, and 93 ppb of TCE, found in BH-6
 3. 1,400 ppb of cis-1,2-DCE, 27,000 ppb of TCE, and 500 ppb of PCE, found in MW-2
 4. 9.4 ppb of 1,1-DCE, found in MW-3
- We calculated the groundwater flow direction to be south 30° east (S30°E) and the groundwater gradient to be 0.0028 (0.28 feet of vertical drop per 100 feet of horizontal distance).
- Clayton recommends that two permanent monitoring wells be installed along a line between former temporary wells BH-4 and BH-6. A geotechnical study of the soils could be conducted at the same time to assess the site's aquifer characteristics which will facilitate preparing a remediation work plan.
- Mr. Arulanantham has requested that we recommend a preferred remediation plan for the site. The extent of the contamination must be further defined before we can make a responsible recommendation. Therefore, Clayton recommends that a feasibility study be conducted concurrently with the proposed additional investigation.

Once the extent of contamination is further defined, a proper, well-designed feasibility study will include the evaluation of the following remediation technologies:

1. Groundwater pumping via extraction wells, interceptor trenches, or a grid of well points
2. Biodegradation, enhanced or insitu

3. Treatment technologies to include: air stripping, activated carbon, and biodegradation
4. Evaluation of discharge options to include: storm sewer, sanitary sewer, or reinjection of treated groundwater

The feasibility study will assess capital and operating costs, permitting, effectiveness to mitigate environmental impact, and implementability of selected plan, and liability.

1.0 INTRODUCTION

Clayton Environmental Consultants, Inc., was retained by Busick Air Conditioning to perform an additional subsurface investigation at 6341 Scarlett Court in Dublin, California (Figure 1). Ms. Doreen Green of Busick Air authorized the project on July 10, 1991, by accepting Clayton's Proposal No. 91-B-139 and its accompanying terms and conditions.

1.1 SCOPE OF WORK

This work was based on Clayton's work plan, dated June 5, 1991, which was approved by Mr. Ravi Arulanantham of the Alameda County Health Agency (ACHA). It includes the following activities:

- Drilling of boreholes BH-4, BH-5, BH-6, and BH-7
- Installation, development, and sampling of monitoring wells MW-2 and MW-3
- Laboratory analysis of groundwater samples from the four boreholes (samples were collected on July 16, 1991)
- Laboratory analysis of groundwater samples from monitoring wells MW-2 and MW-3 (samples were collected on July 24, 1991)

Soil samples were not collected from the boreholes.

1.2 BACKGROUND

Mr. Bruce Jacobson of Decon Environmental Services contacted Mr. Alan Gibbs, Clayton Supervisor of Geology, after Decon had excavated a sump at the site. The sump had been located at the southeast corner of the warehouse that is directly behind the Busick Air office building (Figure 2). After the sump was removed, the excavation was enlarged to a depth of approximately 6 feet where groundwater was encountered. The sump had evidently been used by the previous tenant.

Decon collected water samples from the excavation on July 18, 1990, and then pumped and treated the water several times. Water samples were taken again on September 14, 1990. Laboratory analytical results for the before and after water samples indicated that pumping had reduced the chlorinated solvent concentrations. However, chlorinated solvent concentrations in the groundwater samples collected in September 1990 did not meet California Regional Water Quality Control Board (RWQCB) Drinking Water Standards.

Clayton conducted a subsurface investigation at the site (Clayton Project Report No. 31820.00, dated December 12, 1990). We installed three boreholes and a monitoring well in the direction that we anticipated would be downgradient from the former sump location based on a review of topographic maps. Groundwater samples were collected from all three boreholes and the monitoring well. The samples were analyzed for purgeable halocarbons and purgeable aromatics by Environmental Protection Agency

(EPA) Method 8010. Table 1 summarizes the results of the laboratory analyses of the water samples and compares them to regulatory guidelines.

Groundwater was found to be impacted by the chlorinated solvents dichloroethene (DCE), dichloroethane (DCA), trichloroethene (TCE), and tetrachloroethene (PCE). Concentrations of these constituents decreased with increasing distance from the former sump location.

Mr. Arulanantham recommended the installation of four more boreholes and two monitoring wells (described in this report) to define the lateral extent of the chemical constituents recognized in the groundwater beneath the site.

1.3 HYDROGEOLOGY

The site is located within the San Ramon subbasin of the Livermore Valley groundwater basin. Soil survey maps by the U.S. Department of Agriculture show that the surface soil in the site area is Clear Lake clay. This thick clay has a low permeability and high capacity for holding available water.

During drilling, groundwater was encountered between 12.5 and 15.5 feet below the ground surface (bgs). After we hit groundwater, the water level in the boreholes and monitoring well rose to approximately 4 or 5 feet bgs.

The site was surveyed to mean sea level by Bruce T. Tronoff, a licensed land surveyor (Appendix A). Clayton measured the depths to groundwater in the monitoring wells onsite on September 5, 1991. The depths to groundwater and groundwater elevations are presented in Table 2. From these elevations we calculated the groundwater flow direction to be S30°E. We calculated the groundwater gradient to be 0.0028 (0.28 feet of vertical drop per 100 feet of horizontal distance).

2.0 FIELD INVESTIGATION

The following subsections present the methodology used to complete the field investigation.

2.1 SOIL BOREHOLE INSTALLATION AND SAMPLING

Before any drilling was performed, well construction applications were filed with the Alameda County Flood Control and Water Conservation District (ACFC&WCD). These are contained in Appendix B.

Aqua Science Engineers was contracted to perform the drilling activities under the direct supervision of Clayton personnel. All work was performed in accordance with Clayton's "Drilling, Well Construction, and Sampling Protocols" (Appendix C), which follow the Alameda County Water District guidelines.

On July 16, 1991, four boreholes were installed to a depth of approximately 15 feet bgs with an 8-inch hollow-stem auger from a truck-mounted drilling rig. On July 17, 1991, two boreholes were installed to a depth of approximately 15 feet bgs with a

10.5-inch hollow-stem auger from a truck-mounted drilling rig. These boreholes were converted into monitoring wells.

Lithologic logs recording the soil types underlying the site were maintained by Clayton's geologist. Soil was screened for hydrocarbon contamination with an organic vapor meter (OVM). Soil samples were not collected from any of the boreholes. The borehole logs are presented in Appendix D.

Waste drill cuttings and purge water from well development and sampling were placed into Department of Transportation (DOT)-approved drums for proper disposal at a later date. These drums were labeled with the name of the site, address, well number, and the drum contents and left at the site pending analysis.

2.2 MONITORING WELL CONSTRUCTION AND SAMPLING

Temporary monitoring wells were installed into boreholes BH-4, BH-5, BH-6, and BH-7 on July 16, 1991, by placing 2-inch PVC schedule 40 well casing and screen (0.010-inch) in the boreholes. The wells were allowed to stabilize for at least 1 hour, and were then purged of two to three well volumes prior to sampling in accordance with ACHA guidelines. After collection of samples, the PVC was removed from the boreholes and the holes were backfilled with a cement slurry to 1 foot below the surface. The top 1 foot was completed with asphalt patch to match the surrounding surface.

Monitoring wells MW-2 and MW-3 were constructed of 4-inch diameter schedule 40 PVC flush-threaded casing. The open portions of the wells were constructed using 0.010 inch slotted screen. Table 3 is a summary of the well construction details. The schematic for the wells is included as Appendix B.

Clayton developed the newly installed monitoring wells by pumping them with a 4-inch submersible pump. This was done to stabilize the filter material and remove turbid water caused by drilling operations.

We sampled the wells after purging five well volumes to obtain representative samples of the aquifer. Field sampling data sheets are included as Appendix E.

3.0 GROUNDWATER ANALYTICAL RESULTS

Analyses were selected to assess groundwater for possible contamination from the former sump on the subject site. The groundwater was analyzed for purgeable halocarbons and purgeable aromatics by EPA Method 601/602. Table 4 is a summary of the results of the analysis of groundwater samples. Regulatory guidelines are included in the table for comparison. The complete laboratory report is presented as Appendix F.

All samples were transported to Clayton's laboratory under chain-of-custody. These chain-of-custody forms are included in Appendix F with the analytical results.

Of the chemicals detected in the groundwater, the following concentrations exceed regulatory guidelines:

- 46 parts per billion (ppb) of TCE, found in BH-4
- 15 ppb of cis-1,2-DCE and 93 ppb of TCE, found in BH-6
- 1,400 ppb of cis-1,2-DCE, 27,000 ppb of TCE, and 500 ppb of PCE, found in MW-2
- 9.4 ppb of 1,1-DCE, found in MW-3

Because of the high levels of chemicals in MW-2, detection limits in this well were raised above the regulatory guidelines for 1,1-DCE, trans-1,2-DCE, and 1,1-DCA. Therefore, we do not know if concentrations of these chemicals exceeded regulatory guidelines.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Clayton recommends that two permanent monitoring wells be installed along a line between former temporary wells BH-4 and BH-6. A geotechnical study of the soils could be conducted at the same time to assess the site's aquifer characteristics which will facilitate preparing a remediation work plan.

Mr. Arulanantham has requested that we recommend a preferred remediation plan for the site. The extent of the contamination must be further defined before we can make a responsible recommendation. Therefore, Clayton recommends that a feasibility study be conducted concurrently with the proposed additional investigation.

Once the extent of contamination is further defined, a proper, well-designed feasibility study will include the evaluation of the following remediation technologies:

1. Groundwater pumping via extraction wells, interceptor trenches, or a grid of well points
2. Biodegradation, enhanced or insitu
3. Treatment technologies to include: air stripping, activated carbon, and biodegradation
4. Evaluation of discharge options to include: storm sewer, sanitary sewer, or reinjection of treated groundwater

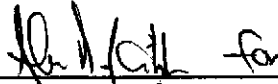
The feasibility study will assess capital and operating costs, permitting, effectiveness to mitigate environmental impact, and implementability of selected plan, and liability.

Limitations


The information and opinions rendered in this report are exclusively for use by Client. Clayton Environmental Consultants, Inc. will not distribute this report without your consent except as may be required by law or court order. The information and opinions expressed in this report are given in response to our limited assignment and

should be evaluated and implemented only in light of that assignment. We accept responsibility for the competent performance of our duties in executing the assignment and preparing this report in accordance with the normal standards of our profession but disclaim any responsibility for consequential damages.

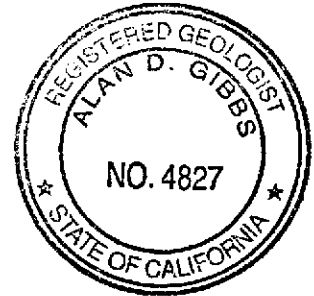
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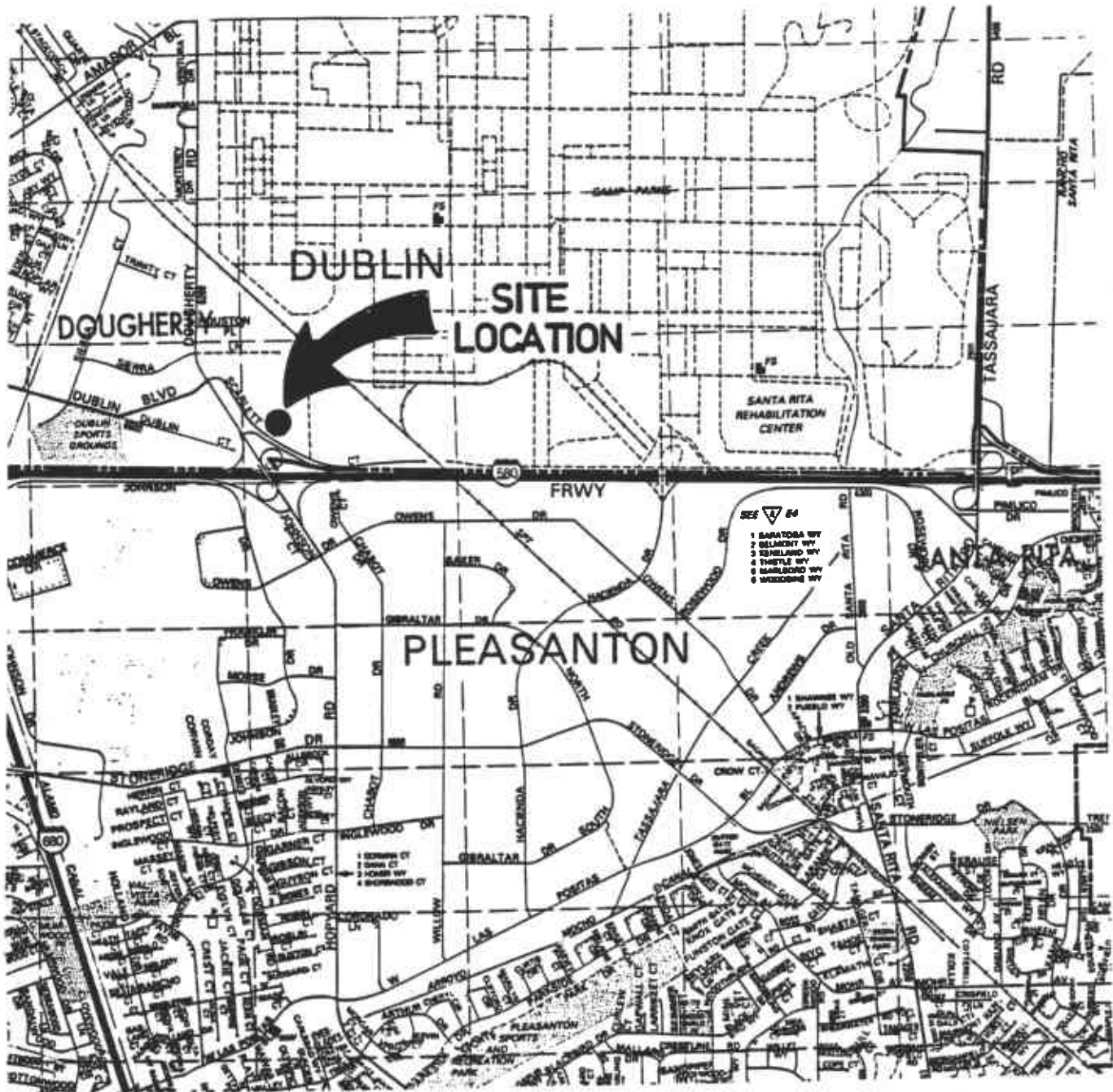

Richard J. Silva
Geologist

This report reviewed by:


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

September 18, 1991

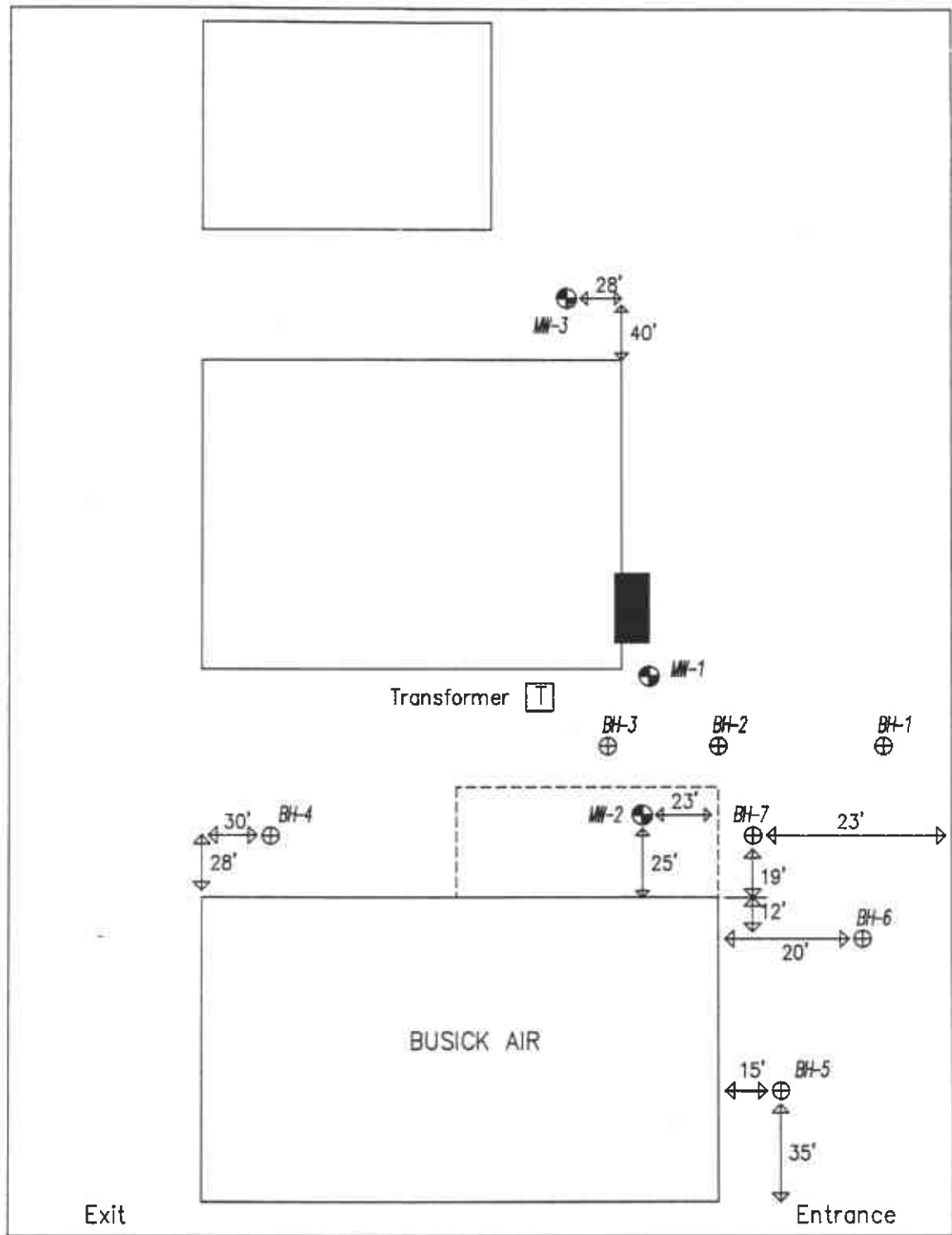




Site Location Map
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California
 Clayton Project No. 31820.03

Figure
 1

Clayton
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● Monitoring Wells
 ⊕ Borehole Locations

(not to scale)



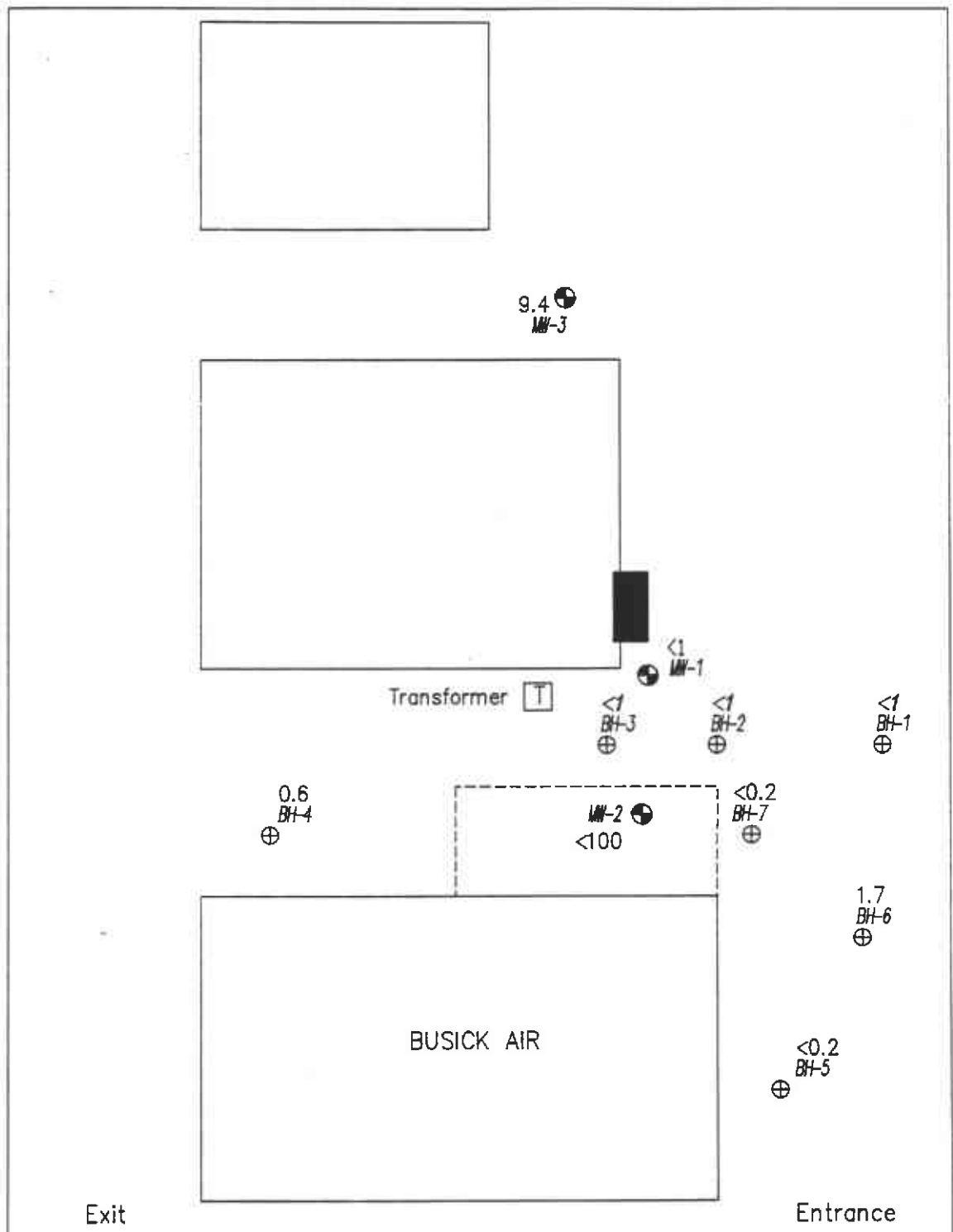
Borehole/Monitoring Well Locations
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California

Clayton Project No. 31820.03

Figure

2

Clayton
 ENVIRONMENTAL
 CONSULTANTS



(not to scale)

 ● Monitoring Wells <1 Sampled 11/12/90
 ⊕ Borehole Locations <1 Sampled 11/19/90

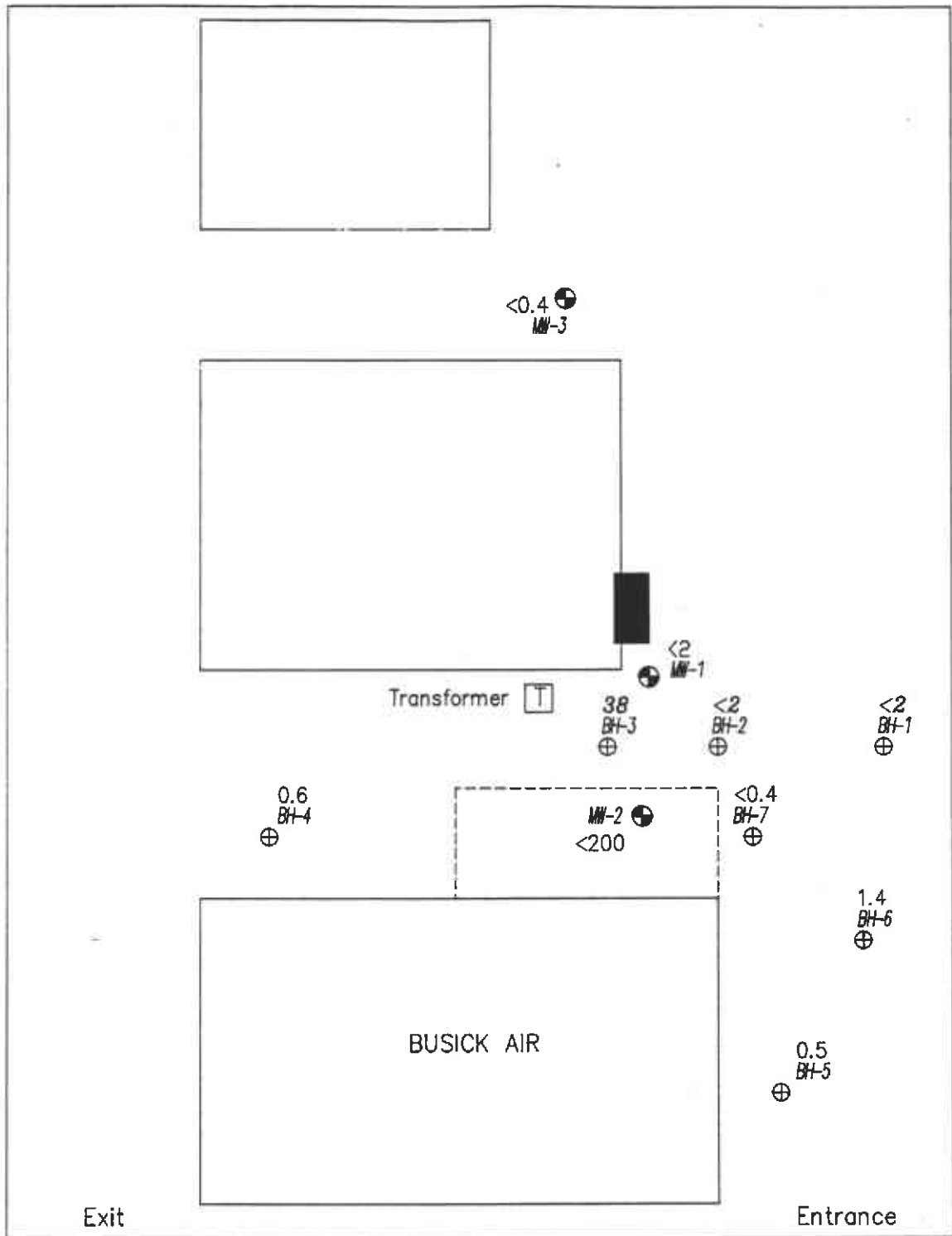
Values in ug/L



1,1-dichloroethene Levels in Groundwater
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California
 Clayton Project No. 31820.03

Figure
3

Clayton
 ENVIRONMENTAL
 CONSULTANTS



⊕ Monitoring Wells <1 Sampled 11/12/90
 ⊕ Borehole Locations <1 Sampled 11/19/90

(not to scale)

Values in ug/L



Trans-1,2-dichloroethene Levels in Groundwater
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California

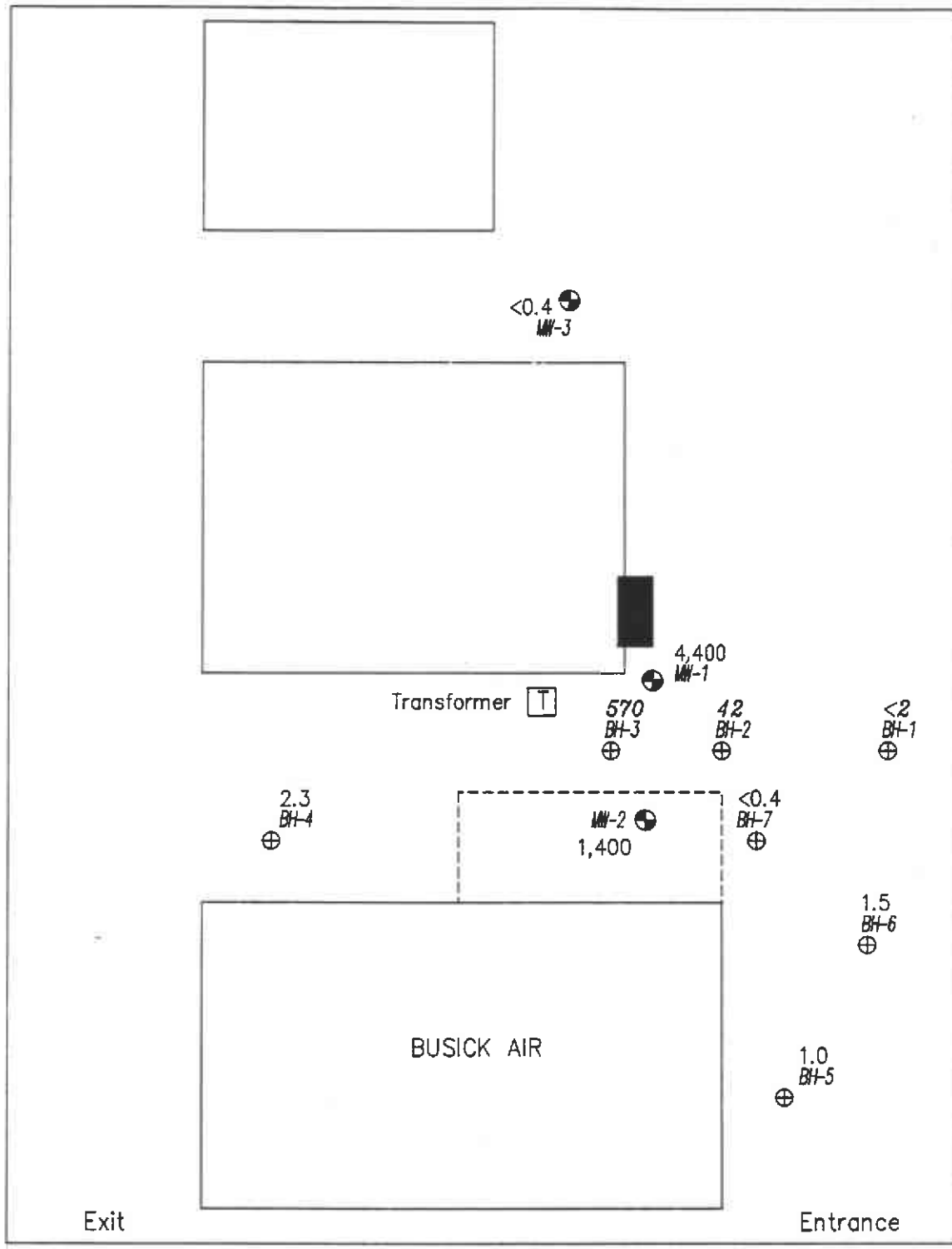
Clayton Project No. 31820.03

Figure

4

Clayton
 ENVIRONMENTAL
 CONSULTANTS

31820-03-3/19



(not to scale) ⊕ Monitoring Wells <1 Sampled 11/12/90
 ⊕ Borehole Locations <1 Sampled 11/19/90 Values in ug/L

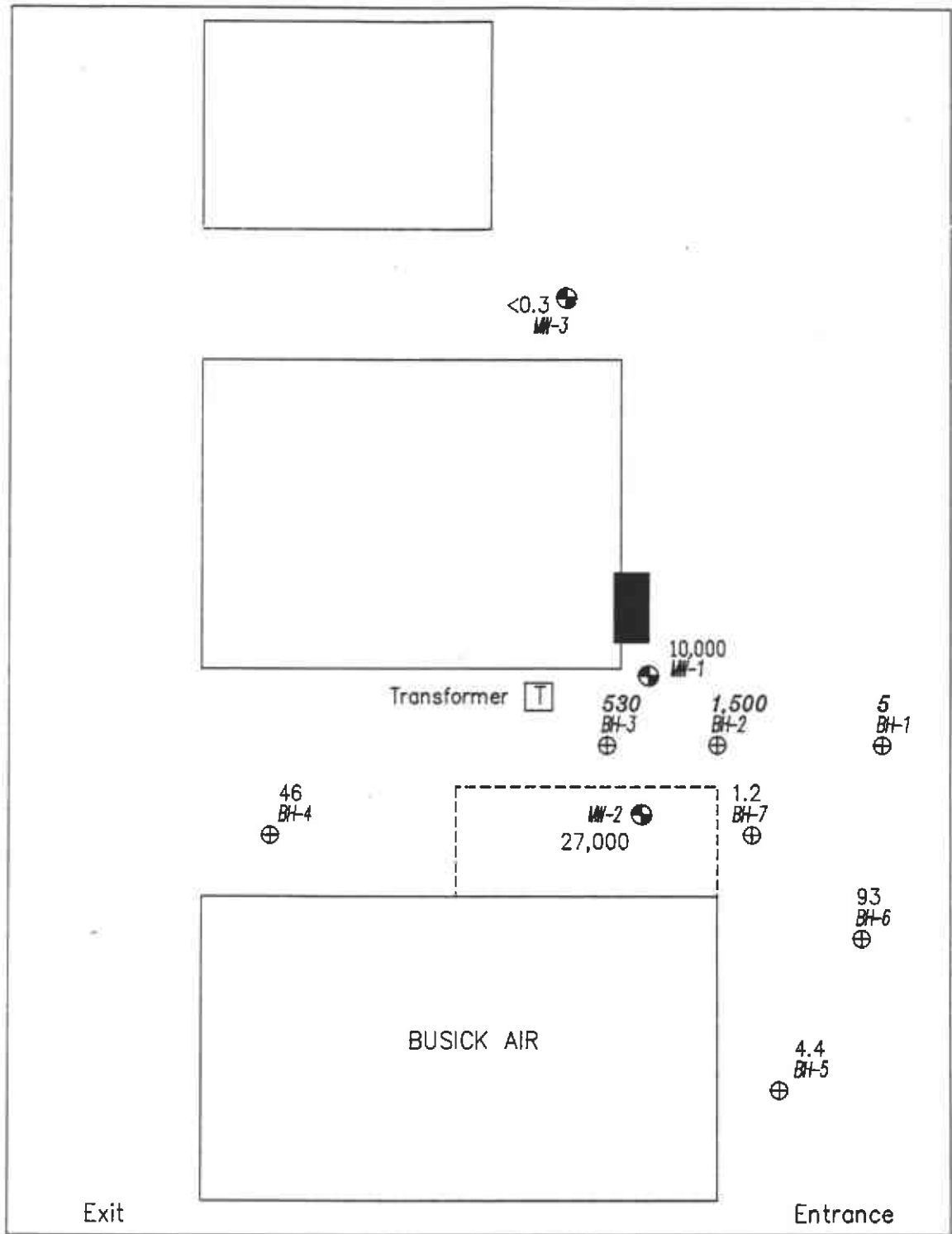


Cis-1,2-dichloroethene Levels in Groundwater
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California

Clayton Project No. 31820.03

Figure
 5

Clayton
 ENVIRONMENTAL
 CONSULTANTS



(not to scale) ⊕ Monitoring Wells <1 Sampled 11/12/90
 ⊕ Borehole Locations <1 Sampled 11/19/90 Values in ug/L



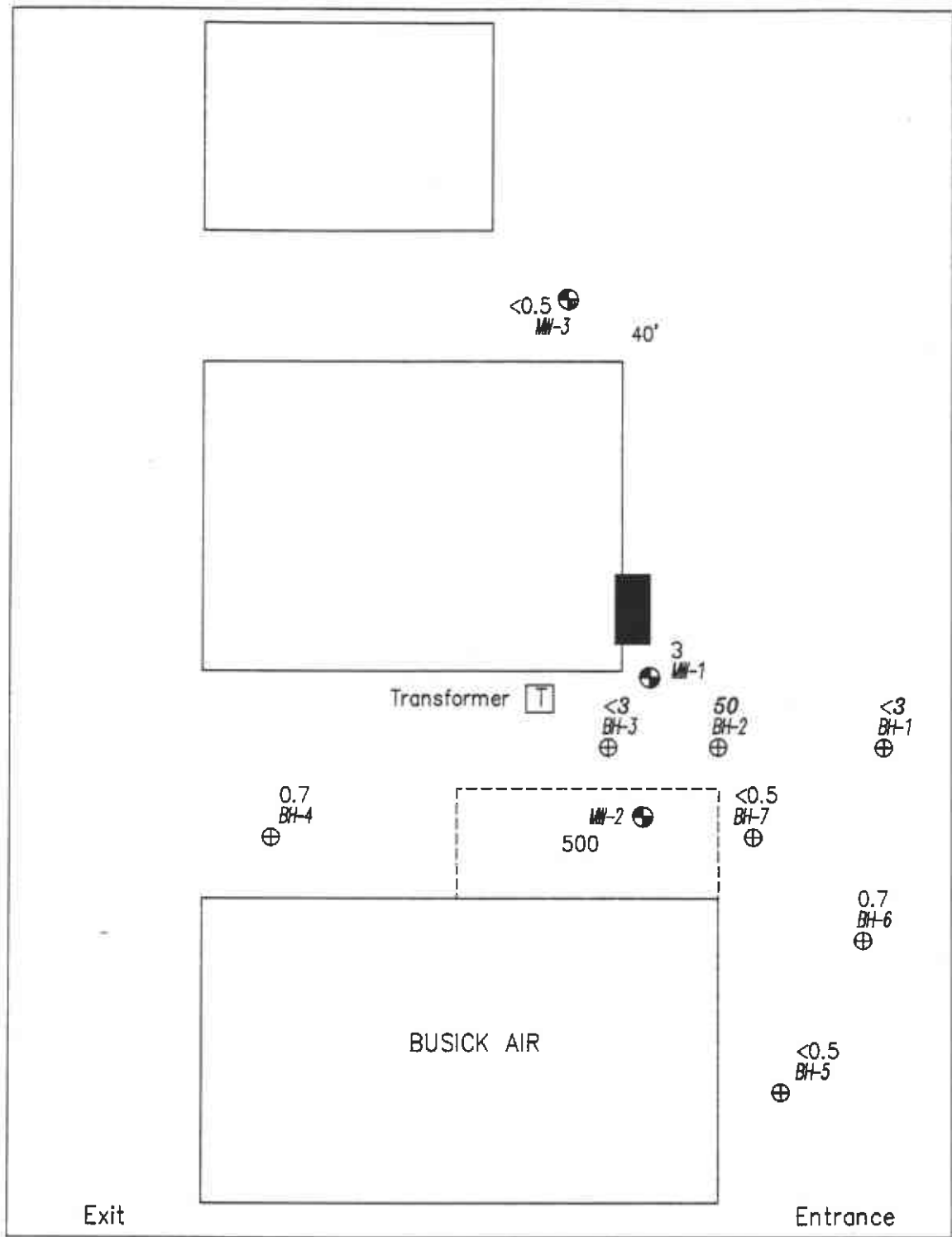
Trichloroethene Levels in Groundwater
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California

Clayton Project No. 31820.03

Figure

6

Clayton
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⊕ Monitoring Wells <math><1</math> Sampled 11/12/90

(not to scale)

⊕ Borehole Locations <math><1</math> Sampled 11/19/90

Values in ug/L



Tetrachloroethene (Perchloroethene) Levels in Groundwater
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California

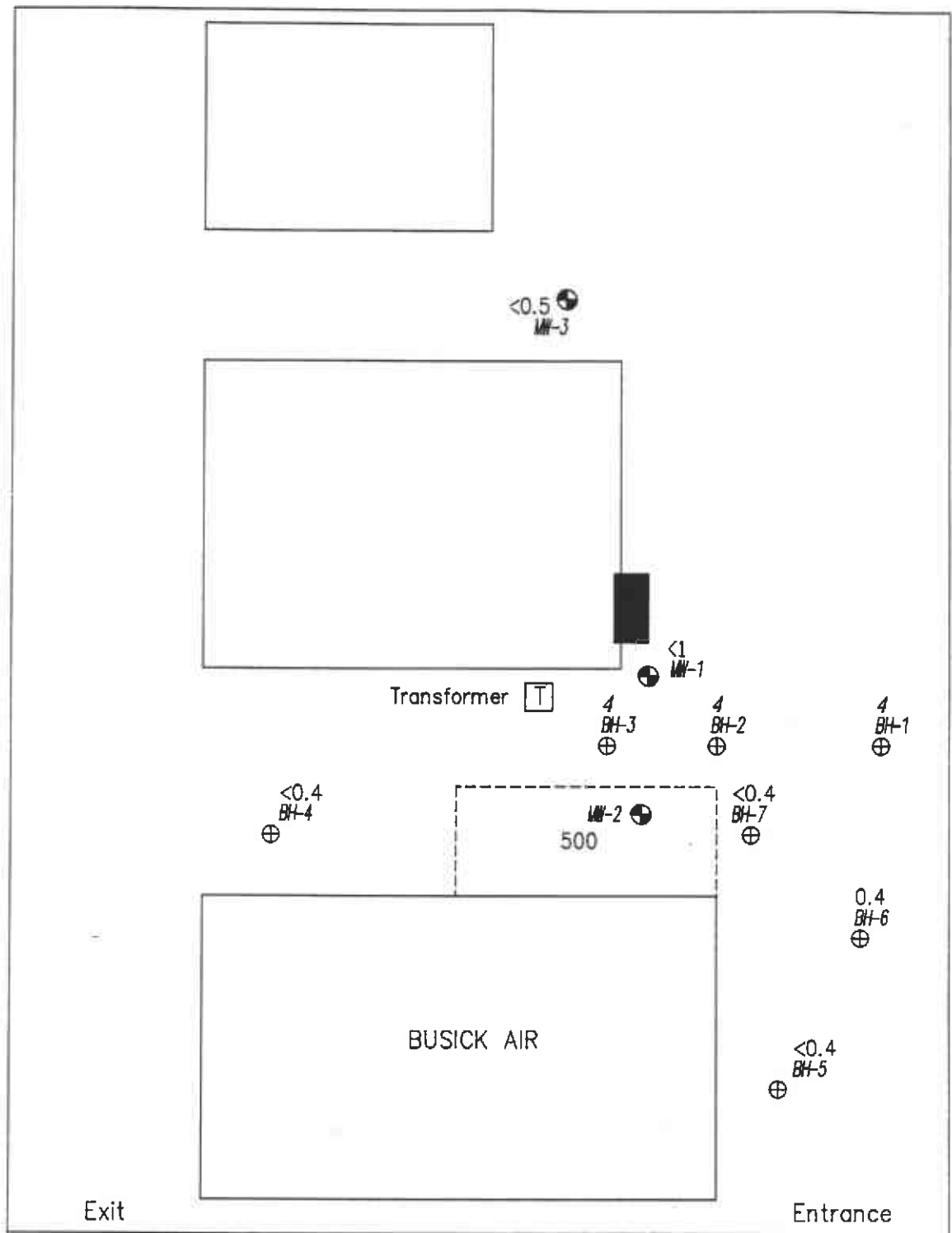
Figure

7

Clayton
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Clayton Project No. 31820.03

31820-03-3/72



⊕ Monitoring Wells <1 Sampled 11/12/90
 ⊕ Borehole Locations <1 Sampled 11/19/90

(not to scale)

Values in ug/L



1,1-dichloroethane Levels in Groundwater
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California

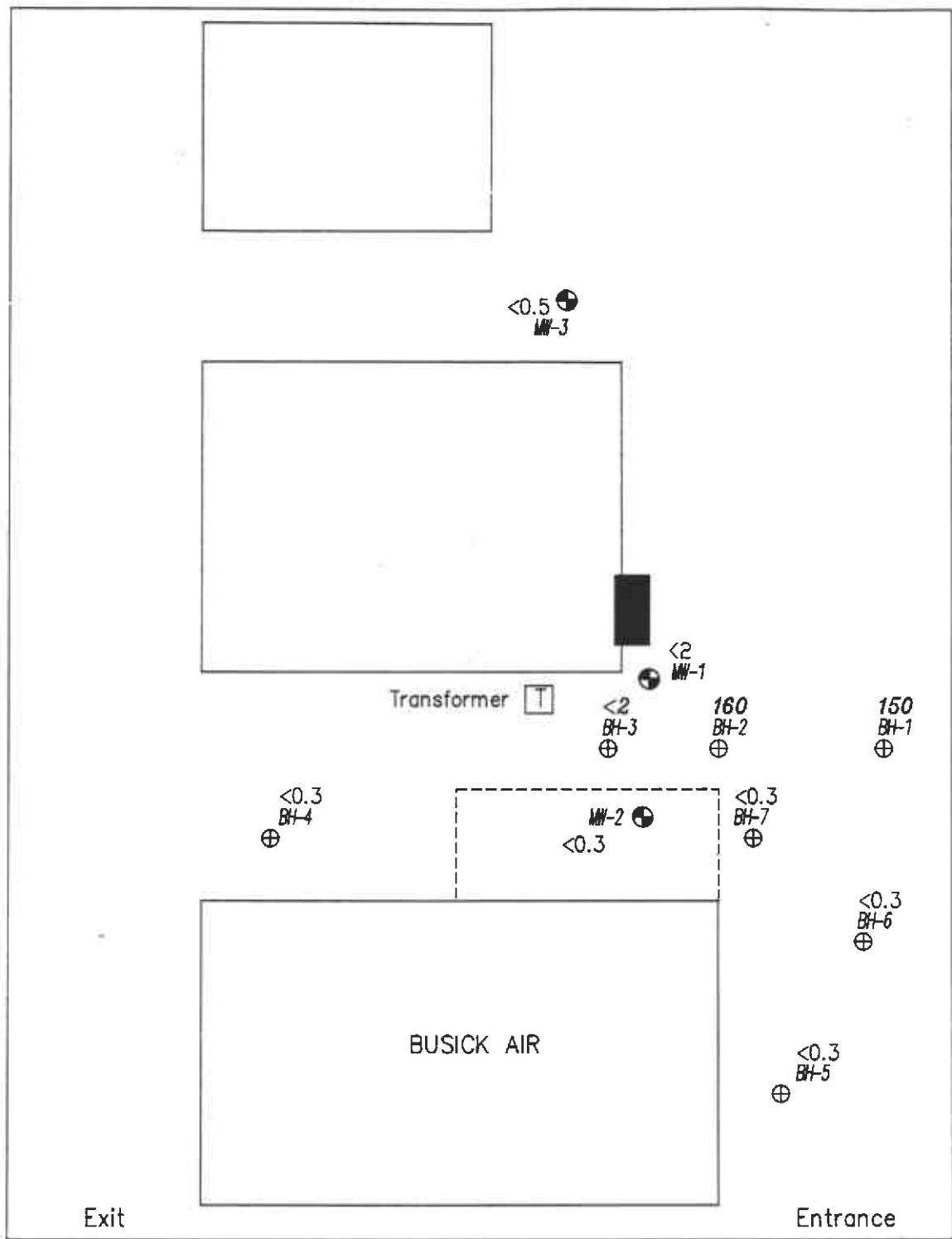
Clayton Project No. 31820.03

Figure

8

Clayton
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 CONSULTANTS

31820-03-3/23



(not to scale)

 ● Monitoring Wells <1 Sampled 11/12/90
 ⊕ Borehole Locations <1 Sampled 11/19/90

Values in ug/L



1,2-dichloroethane Levels in Groundwater
 BUSICK AIR
 6341 Scarlett Court
 Dublin, California
 Clayton Project No. 31820.03

Figure
 9

Clayton
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Table 1

Summary of Groundwater Analytical Results
for Samples Collected November 12 and 19, 1990
at
Busick Air Conditioning
6341 Scarlett Court
Dublin, California

Compound	BH-1 (ppb)	BH-2 (ppb)	BH-3 (ppb)	MW-1 (ppb)	Regulatory Guidelines
Trans-1,2-Dichloroethene	<2	<20	38	<200	10 ⁽²⁾
Cis-1,2-Dichloroethene	<2	42	570	4,400	6 ⁽²⁾
1,2-Dichloroethene (total)	<2	40	610	4,400	6 ⁽²⁾
1,2-Dichloroethane	150	160	<6	<200	0.5 ⁽³⁾
Trichloroethene	5	1,500	530	10,000	5 ⁽³⁾
Tetrachloroethene	<3	50	ND	<300	5 ⁽¹⁾

Table Notes

<0.2 = detection limit
ppb = parts per billion, approximately equal to micrograms per liter (µg/L)
ND = not detected

- ⁽¹⁾ Maximum Contaminant Level for Drinking Water Standards (EPA & DHS)
- ⁽²⁾ California State Action Levels (DHS)
- ⁽³⁾ MCL for Drinking Water Standards (DHS)

Regulatory Guidelines are taken from Jon B. Marshack's, *A Compilation of Water Quality Goals, October 1990*.

Table 2
Depth to Groundwater and Groundwater Elevations
on
September 4, 1991

Busick Air Conditioning
6341 Scarlett Court
Dublin, California

Monitoring Well	Surface Elevation of Well Casing (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1	325.29	5.30	319.99
MW-2	324.35	4.43	319.92
MW-3	325.57	5.16	320.41

Well elevations are surveyed on the north sides of the PVC casing

Surveyed to mean sea level by licensed land surveyor, Bruce T. Tronoff

Table 3
Well Construction Details
for
Monitoring Wells Located at
Busick Air Conditioning
6341 Scarlett Court
Dublin, California

July 1991

Well Number	Total Depth (feet bgs)	Top of Screened Interval (feet bgs)	Diameter (inches)
MW-1	14.5	4.5	4
MW-2	14.5	4.5	4
MW-3	14.0	4.0	4

bgs = below ground surface

Table 4

Summary of Groundwater Analytical Results
for Samples Collected July 16 and 24, 1991
at
Busick Air Conditioning
6341 Scarlett Court
Dublin, California

Compound	BH-4 (ppb)	BH-5 (ppb)	BH-6 (ppb)	MW-7 (ppb)	MW-2 (ppb)	MW-3 (ppb)	Regulatory Guidelines
1,1-Dichloroethene	0.6	<0.2	1.7	<0.2	<100	9.4	6 ⁽¹⁾
1,1-Dichloroethane	<0.4	<0.4	<0.4	<0.4	<200	1.0	5 ⁽²⁾
Trans-1,2-Dichloroethene	0.6	0.5	1.4	<0.4	<200	<0.4	10 ⁽²⁾
Cis-1,2-Dichloroethene	2.3	1.0	15	<0.4	1,400	<0.4	6 ⁽²⁾
1,2-Dichloroethane	<0.3	<0.3	0.5	<0.3	<200	<0.3	0.5 ⁽³⁾
Trichloroethene	46	4.4	93	1.2	27,000	<0.3	5 ⁽³⁾
Tetrachloroethene	0.7	<0.5	0.7	<0.5	500	<0.5	5 ⁽¹⁾

Table Notes

<0.2 = detection limit

ppb = parts per billion which is approximately equal to micrograms per liter ($\mu\text{g/L}$)

⁽¹⁾ Maximum Contaminant Level for Drinking Water Standards (EPA & DHS)

⁽²⁾ California State Action Levels (DHS)

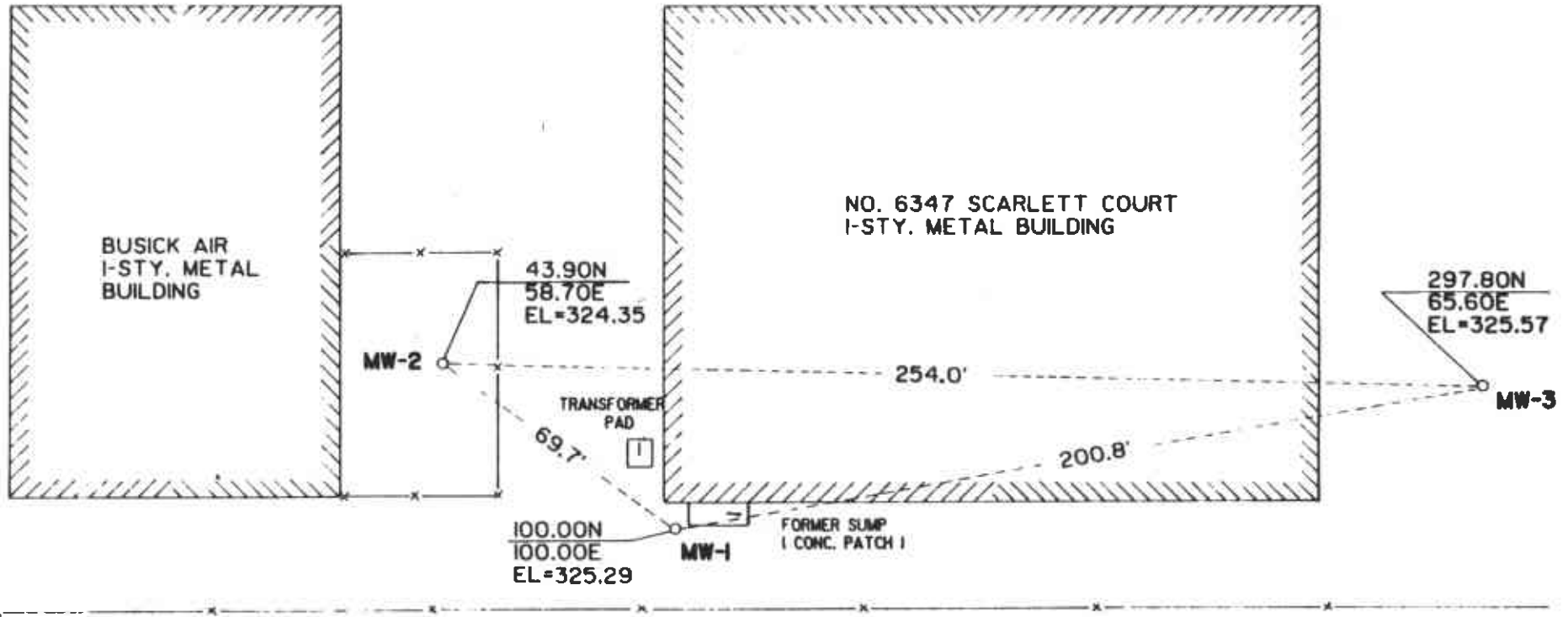
⁽³⁾ MCL for Drinking Water Standards (DHS)

Regulatory Guidelines are taken from Jon B. Marshack's, *A Compilation of Water Quality Goals, October 1990*.

APPENDIX A
SURVEYED SITE MAP

PROJECT NORTH

SCARLETT COURT



LEW DOTY CADILLAC

NOTES :

1. VERTICAL DATUM - MEAN SEA LEVEL.
2. ELEVATIONS ARE ON NORTH SIDE PVC CASING.



MONITORING WELL LOCATION
BUSICK AIR
6341 SCARLETT COURT
DUBLIN , CALIFORNIA

FOR

CLAYTON ENVIRONMENTAL CONSULTANTS

BY

BRUCE T. TRONOFF - LAND SURVEYOR

516 HUBBLE STREET

DAVIS, CA. 95616

(916) 758-4599

SCALE 1"=40'

AUGUST 28, 1991

APPENDIX B

**MONITORING WELL CONSTRUCTION PERMIT AND
SCHEMATIC FOR MW-2 AND MW-3**



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (415) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 6341 Scarlett Court Dublin, California

PERMIT NUMBER 91387

LOCATION NUMBER

CLIENT

Name Busick Air Conditioning Address 6341 Scarlett Ct Phone (415) 828-1780 City Dublin Zip 94568

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT

Name Clayton Environmental Consultants Address P.O. Box 9019 Phone (415) 426-2676 City Pleasanton Zip 94566

TYPE OF PROJECT

Well Construction Geotechnical Investigation Cathodic Protection General Water Supply Contamination X Monitoring X Well Destruction

PROPOSED WATER SUPPLY WELL USE

Domestic Industrial Other Municipal Irrigation

DRILLING METHOD:

Mud Rotary Air Rotary Auger X Cable Other

DRILLER'S LICENSE NO. C57-487000

WELL PROJECTS

Drill Hole Diameter 10 in. Maximum Casing Diameter 4 in. Depth 15 ft. Surface Seal Depth 4 ft. Number 2

GEOTECHNICAL PROJECTS

Number of Borings 4 Maximum Hole Diameter 8 in. Depth 15 ft.

ESTIMATED STARTING DATE July 16, 1991 ESTIMATED COMPLETION DATE July 17, 1991

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE

Alan D. Gibbs, R.G. Supervisor, Geology Date 7-11-91

A. GENERAL

- 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS

- 1. Minimum surface seal thickness is two inches of cement grout placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

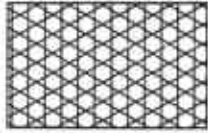
C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 12 Jul 91

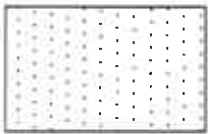
EXPLANATION



Concrete



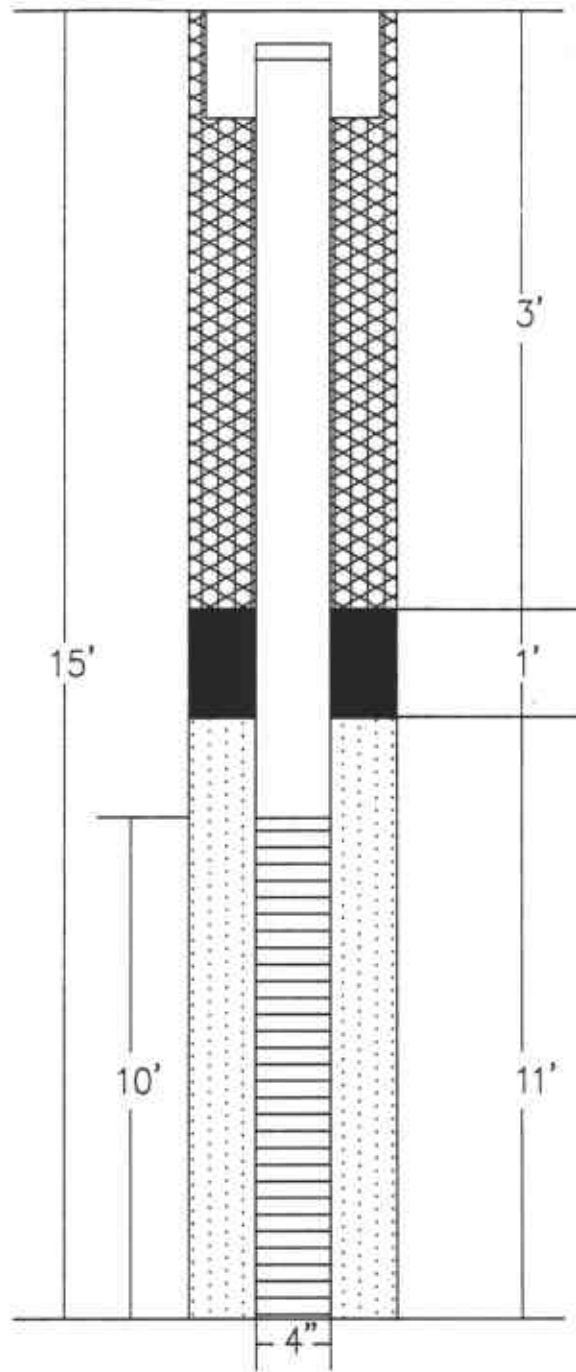
Bentonite



Sand #2/12



0.01" Slotted
Screen



(not to scale)

Monitoring Well Diagram (MW-2 and MW-3)
BUSICK AIR
6341 Scarlett Court
Dublin, California

Clayton Project No. 31820.03

Clayton
ENVIRONMENTAL
CONSULTANTS

APPENDIX C

CLAYTON'S DRILLING, WELL CONSTRUCTION,
AND SAMPLING PROTOCOLS

DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS FOR BOREHOLE/MONITORING WELL INSTALLATION

BOREHOLE INSTALLATION

Clayton Environmental Consultants, Inc. acquires the proper governmental agency permits to bore, drill, or destroy all proposed boreholes and monitoring wells that intersect with groundwater aquifers and writes a health and safety plan.

Clayton subcontracts only with drillers who possess a current C-57 water well contractor's license issued by the State of California and whose personnel have attended the OSHA 40-hour Hazardous Materials Safety Training. Prior to starting work, a "tailgate" safety meeting including discussion of the safety hazards and precautions relevant to the particular job will be held with all personnel working on the job. Well drillers are identified on permit applications.

Borings are drilled dry by hollow- or solid-stem, continuous flight augers. Augers, drill rods, and other working components of the drilling rig are steam-cleaned before arriving onsite to prevent the introduction of contaminants. These components are also steam-cleaned between borings away from boring locations. Cleaned augers, rods, and other components are stored, and/or covered when not in use.

Our bore logs include a detailed description of subsurface stratigraphy. Clayton examines the soil brought to the surface by drilling operations, and samples undisturbed soil every 5 feet or as otherwise specified. Soil cuttings are screened for hydrocarbon contamination using a photoionization detector. Boring logs are filled out in the field by a professional geologist, civil engineer, engineering geologist who is registered by the State of California, or a technician who is trained and working under the supervision of one of the previously mentioned persons, using the Unified Soil Classification System.

SOIL SAMPLING

Soil samples are taken every 5 feet, at areas of obvious contamination, or as otherwise specified, with a California modified split-spoon sampler that is lined with three six-inch brass tubes. The sampler and rod are inserted into the borehole to the current depth and a hammer of known weight and height above the sampler are allowed to free-fall onto the rod, advancing the assembly 18 inches into undisturbed soil. Clayton uses the number of blows necessary to drive the sampler into the ground to help evaluate the consistency of materials encountered. The sampler is then pulled from the borehole and disassembled, and the three brass tubes are separated for inspection and labeling.

Clayton uses new brass liners or liners cleaned with a trisodium phosphate (TSP) solution, double rinsed with clean tap water, and air dried prior to each sampling. The sampler is also cleaned with TSP and rinsed with tap water between sampling events.

Soil samples selected for laboratory analysis are left in the brass liners, sealed with aluminum foil and plastic caps, taped for air tightness, labeled, and immediately placed into a pre-cooled ice chest chilled to less than 4°C. Labels contain the following information: site name, date and time sampled, borehole number and depth, and the sampler's initials. The samples are transported under chain-of-custody to a state-certified laboratory. The laboratory analyzes soil samples within the prescribed holding time, storing them at temperatures below 4°C at all times.

Pending results of laboratory analysis, excess drilling and sampling cuttings are placed into Department of Transportation (DOT)-approved drums, labeled with the name of the site, address, and well number, and left at the site. Uncontaminated soil may be disposed of by the client. Soil found to contain levels of contaminants above local or state action levels will require that the client dispose of it in accordance with hazardous waste regulations. At the client's request, we will assist with the disposal of contaminated soil.

WELL CONSTRUCTION

Boreholes are converted to monitoring wells by placing 2-inch or 4-inch diameter well casing with flush-threaded joints and slotted screen into the borehole. Construction materials include polyvinyl chloride (PVC), stainless steel, or low carbon steel. The most suitable material for a particular installation will depend on the parameters to be monitored. All screens and casings used are in a contaminant-free condition when placed in the ground. No thread lubrication is used, other than teflon tape, for connecting the casing segments.

Wells extend at least 10 feet into the upper saturated zone, but do not extend through any clay layers greater than 5 feet that are below the shallow water table. Factory-slotted casing is used throughout and extends at least 2 feet above the permeable water-bearing zone. The top of the well is solid casing. The annular space of the borehole is backfilled with washed, kiln-dried sand to a point at least 1 foot above the slotted screen. A seal above the filter pack is formed by placing a 1- to 2-foot layer of bentonite pellets on top of the sand. The bentonite pellets are moistened by pouring clean tap water down the hole so that they can expand and seal the annulus. A neat cement grout is placed above the bentonite seal and brought to the ground surface.

Well casings are protected from surface contamination, accidental damage, and unauthorized entry or tampering with water-tight locking caps on the well casings. The caps are usually surrounded by a concrete vault. Wells are clearly identified with a metal tag or other device where the following information is recorded: well number, depth to water, depth of well, casing data including location of screened interval.

WELL DEVELOPMENT

The well seal in newly developed wells must set up for 48 to 72 hours prior to development. Since development of the well can volatilize contaminants present, the well must also settle for at least 48 to 72 hours between development and the first purging/sampling incident.

All monitoring wells are initially developed to clean the well and stabilize sand, gravel, and disturbed aquifer materials around the screened internal perforations. Wells are developed

by pumping (or bailing) and surging until water turbidity and specific conductance stabilize. In some cases, where wells are installed in low permeability formations and the wells purge dry, the well is allowed to recover and is purged dry three times. Clean tap water is introduced into the well if it does not recover rapidly enough.

Pending results by laboratory analysis, purge water from well development and sampling is placed into DOT-approved drums, labeled with the name of the site, address, well number, and left at the site. Uncontaminated water may be disposed of by the client. Water found to contain levels of contaminants above local or state action levels requires that the client dispose of it in accordance with hazardous waste requirements. At the client's request, we can assist with the disposal of contaminated purge water.

GROUNDWATER SAMPLING

To collect a representative sample of the groundwater, stagnant water within the well casing and filter material must be purged and fresh aquifer water allowed to replace it. The water is purged from the well by pumping or bailing at least three well volumes. Well volumes are calculated by measuring depth to groundwater to the nearest 0.01 foot upon arrival at the well before any purging has begun. Groundwater samples are collected only after purging has been of sufficient duration for pH, temperature, and electrical conductivity to stabilize. When purging low-yield wells, the wells are purged to dryness. When the well recovers to 80% of the depth measured upon arrival, samples are collected.

Field sampling logs maintained for each well include:

- Monitoring well identification
- Static water level, before and after pumping
- Well depth
- Condition of water prior to purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

Water samples are collected using clean teflon bailers. All equipment that contacts samples is thoroughly cleaned before arrival at the site and between sampling events.

Water is collected in clean laboratory-supplied containers, labeled, placed immediately into an ice chest pre-cooled to 4°C, and transported to Clayton's laboratory for analysis. One trip blank will be furnished in accordance with our quality assurance/quality control (QA/QC) program.

All samples are collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container. Samples are collected so that contaminants most sensitive to volatilization are sampled first.

Preservatives are not added to any sample, unless instructed. If requested, they are supplied by Clayton's laboratory.

All sample containers are labeled in the field. Labels contain the following information: project name, sample identification number, project number, date and time of collection, and sampler's initials.

Under no circumstances are sealed sample containers opened by anyone other than the laboratory personnel who perform the requested analyses. If it is necessary for samples or sample chests to leave the immediate control of the sampler prior to delivery to the laboratory, for example during shipment by Federal Express, a custody seal is placed on each sample container and/or sample chest to ensure that the samples have not been tampered with during transportation. The custody seal is signed by the sampler, and the date and time that the seal was placed is recorded. The elapsed time between sample collection and delivery to the laboratory never exceeds 48 hours. Water samples are not held for more than 14 days prior to analysis and are kept at 4°C at all times.

To document and trace samples from time of collection, a signed chain-of-custody record is filled out by the sampler and accompanies the samples through the laboratory analyses. The completed chain-of-custody is included with the analytical report from the laboratory.

REFERENCES

Groundwater Monitoring Guidelines, Revised February 1990. Alameda County District Groundwater Protection Program.

Leaking Underground Fuel Tank (LUFT) Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Tank Closure, May 1988. State of California LUFT Task Force.

Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, Revised November 1989. North Coast, San Francisco Bay, and Central Valley regions of the California State Water Quality Control Board.

Standards for the Construction and Destruction of Wells and Other Deep Excavations in Santa Clara County, Revised June 1989. Santa Clara Valley Water District.

APPENDIX D
BOREHOLE LOGS

LOG OF EXPLORATORY BORING						Project No.: 31820.03 Date: 7/17/91		BORING NO. MW-2	
Field Location of Boring: Southwest of monitoring well MW-1 (see Figure 2)						Drilling Method: Continuous flight, hollow stem auger			
Ground Elevation: Datum:						Hole Diameter: 10.5 inches			
						Casing Installation Data: Screen 15'-5"; solid 5'-0"; sand 14'-4"; bentonite 4'-3"; grout 3'-surface			
Drilling Rate (ft/min)	PID - OVA (ppm)	DEPTH (ft)	SAMPLE	Soil Group Symbol (uscs)	Lithographic Symbol	Water Level ▼	4.07'		
						Time	1010		
						Date	7/24/91		
DESCRIPTION									
		1		GM		Gravel fill, brownish, moist, poorly graded			
		2		CL		Silty clay, very dark gray (7.5YR 3/0), moist, low plasticity, no odor			
		3							
		4							
		5		▼					
		6				Silty clay, very dark grayish brown (10YR 3/2), very moist, low plasticity, no odor			
		7							
		8							
		9							
		10							
		11		CL		Silty clay, grayish brown (10YR 5/2), very moist, low plasticity, no odor			
		12							
		13							
		14							
		15				Terminate borehole and set well at 15'			
		16							
		17							
		18							

**LOG OF
EXPLORATORY BORING**

Project No.: 31820.03 **Date:** 7/17/91
Client: Busick Air
Location: 6341 Scarlett Court, Dublin
Logged By: R. Silva **Driller:** Aqua Science

BORING NO.
MW-3
Sheet 1 of 1

Field Location of Boring:
Northwest of monitoring well MW-1 (see Figure 2)

Drilling Method: Continuous flight, hollow stem auger
Hole Diameter: 10.5 inches
Casing Installation Data: Screen 15'-5"; solid 5'-0"; sand 14'-4"; bentonite 4'-3"; grout 3'-surface

Ground Elevation: **Datum:**

Drilling Rate (ft/min)	PID - OVA (ppm)	DEPTH (ft)	SAMPLE	Soil Group Symbol (uses)	Lithographic Symbol	DESCRIPTION				
						Water Level ▼	4.81'	Time	1120	Date
		1		GM		Gravel fill, brownish, moist, poorly graded				
		2		CL		Silty clay, very dark gray (7.5YR 3/0), moist, low plasticity, no odor				
		3								
		4								
		5		▼						
		6				Silty clay, very dark grayish brown (10YR 3/2), moist, low plasticity, no odor				
		7								
		8								
		9								
		10								
		11		CL		Silty clay, grayish brown (10YR 5/2), very moist, low plasticity, no odor				
		12								
		13								
		14								
		15				Terminate borehole and set well at 15'				
		16								
		17								
		18								

LOG OF EXPLORATORY BORING						Project No.: 31820.03 Client: Busick Air Location: 6341 Scarlett Court, Dublin Logged By: R. Silva		Date: 7/17/91 Driller: Aqua Science		BORING NO. BH-4 Sheet 1 of 1	
Field Location of Boring: West of monitoring well MW-1 (see Figure 2)						Drilling Method: Continuous flight, hollow stem auger Hole Diameter: 8" Casing Installation Data: Grout - 15' to surface 1 - temporary well					
Ground Elevation:						Datum:					
Drilling Rate (ft/min)	PID OVA (ppm)	D E P T H	S A M P L E	Soil Group Symbol (uses)	Litho-graphic Symbol	Water Level ▼	7.94'				
						Time	1230				
						Date	7/16/91				
DESCRIPTION											
		1		GM		Gravel fill, brownish, moist, poorly graded					
		2		CL		Silty clay, very dark gray (7.5YR 3/0), moist, low plasticity, no odor					
		3									
		4									
		5									
		6				Silty clay, very dark grayish-brown (10YR 3/2), very moist, low plasticity, no odor					
		7									
		8		▼							
		9		CL							
		10									
		11				Silty clay, light brownish gray (10YR 6/2), very moist, low plasticity, no odor					
		12									
		13									
		14									
		15				Terminate borehole at 15', grout well from 15' to surface					
		16									
		17									
		18									

LOG OF EXPLORATORY BORING						Project No.: 31820.03	Date: 7/17/91	BORING NO.	
						Client: Busick Air		BH-5	
						Location: 6341 Scarlett Court, Dublin			
						Logged By: R. Silva	Driller: Aqua Science	Sheet 1 of 1	
Field Location of Boring: South of monitoring well MW-1 (see Figure 2)						Drilling Method: Continuous flight, hollow stem auger			
Ground Elevation:						Datum:			
						Hole Diameter: 8"			
						Casing Installation Data: Grout - 15' to surface			
						1 - temporary well			
Drilling Rate (ft/min)	PID - OVA (ppm)	DEPTH (ft)	SAMPLING POINTS (ft)	Soil Group Symbol (uses)	Lithographic Symbol	Water Level ▼	5.46'		
						Time	1300		
						Date	7/16/91		
DESCRIPTION									
		1		GM		Gravel fill, brownish, moist, poorly graded			
		2		CL		Silty clay, very dark gray (7.5YR 3/0), moist, low plasticity, no odor			
		3							
		4				Silty clay, very dark grayish brown (10YR 3/2), moist, low plasticity, no odor			
		5							
		6		▼		Silty clay, very dark grayish brown (10YR 3/2), very moist, low plasticity, no odor			
		7		CL		Silty clay, grayish brown (10YR 5/2), very moist, low plasticity, no odor			
		8							
		9							
		10							
		11							
		12				Silty clay, light brownish gray (10YR 6/2), very moist, low plasticity, no odor			
		13							
		14							
		15				Terminate borehole at 15', grout well from 15' to surface			
		16							
		17							
		18							

LOG OF EXPLORATORY BORING						Project No.: 31820.03 Client: Busick Air Location: 6341 Scarlett Court, Dublin Logged By: R. Silva	Date: 7/17/91 Driller: Aqua Science	BORING NO. BH-6 Sheet 1 of 1	
Field Location of Boring: Southeast of monitoring well MW-1 (see Figure 2)						Drilling Method: Continuous flight, hollow stem auger Hole Diameter: 8"			
Ground Elevation: _____ Datum: _____						Casing Installation Data: Grout - 15' to surface 1 - temporary well			
Drilling Rate (ft/min)	PID --- OVA (ppm)	D E P T H	S A M P L E	Soil Group Symbol (uses)	Lithographic Symbol	Water Level ▼	6.20'		
						Time	1400		
						Date	7/16/91		
DESCRIPTION									
		1		GM		Gravel fill, brownish, moist, poorly graded			
		2		CL		Silty clay, very dark gray (7 SYR 3/0), moist, low plasticity, no odor			
		3							
		4							
		5							
		6							
		7		▼		Silty clay, very dark grayish (10YR 3/2), very moist, low plasticity, no odor			
		8							
		9							
		10							
		11		CL		Silty clay, grayish brown (10YR 5/2), very moist, low plasticity, no odor			
		12							
		13							
		14							
		15				Terminate borehole at 15', grout well from 15' to surface			
		16							
		17							
		18							

LOG OF EXPLORATORY BORING						Project No.: 31820.03 Client: Busick Air Location: 6341 Scarlett Court, Dublin Logged By: R. Silva	Date: 7/17/91 Driller: Aqua Science	BORING NO. BH-7 Sheet 1 of 1
Field Location of Boring: South of monitoring well MW-1 (see Figure 2)						Drilling Method: Continuous flight, hollow stem auger Hole Diameter: 8" Casing Installation Data: Grout - 3' to surface 1 - temporary well		
Ground Elevation: _____ Datum: _____								
Drilling Rate (ft/min)	PID - OVA (ppm)	D E P T H	S A M P L E	Soil Group Symbol (USCS)	Litho-graphic Symbol	Water Level ▼	Time	Date
						6.31'	1430	7/16/91
						DESCRIPTION		
		1		GM		Gravel fill, brownish, moist, poorly graded		
		2		CL		Silty clay, very dark gray (7.5YR 3/1), moist, low plasticity, no odor		
		3						
		4						
		5						
		6						
		7		▼		Silty clay, very dark grayish brown (10YR 3/2), very moist, low plasticity, no odor		
		8						
		9						
		10		CL		Silty clay, grayish brown (10YR 5/2), very moist, low plasticity, no odor		
		11						
		12						
		13						
		14						
		15				Terminate borehole at 15'; grout well from 15' to surface		
		16						
		17						
		18						

APPENDIX E

WATER SAMPLING FIELD DATA SHEETS

**CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM**

Job No: 31820.03

Site: Busick Air, Dublin

Date: 7/24/91

Well No: MW-2

Sampling Team: G. Williams

Sampling Method: Electric submersible pump for purging; disposable bailer for sampling

Field Conditions: Cloudy, cool ~ 65°F

Describe Equipment Decontamination Before Sampling This Well:

Washed with concentrated cleaning solution; steam cleaned then rinsed with deionized water

Total Depth of Well:

14.52 ft.

Time:

1010

Depth to Water Before Purging:

4.07 ft.

Volume Height of Water Column:

10.45 ft.

2-inch

* .16

4-inch

.65

=

Volume

6.79 gals

*

Purge Factor

5

=

To Purge

33.9 gals.

Depth Purging From: 13 ft.

Time Purging Begins: 1025

Notes on Initial Discharge: Turbid/clearing at ~ 10 gallons, no odor

Time	Volume Purged	pH	Conductivity	T	Comments
1030	5	7.0	3500	20.7°C	Turbid, no odor
1035	10	7.1	3650	20.7°C	Turbid, no odor
1038	15	7.1	3700	20.7°C	Clearing, no odor
1043	20	7.1	3775	20.7°C	Clearing, no odor
1047	25	7.1	3750	20.7°C	Clearing, no odor
1053	30	7.1	3750	20.7°C	Clearing, no odor

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: 1055

	Rep #1	Rep #2	Rep #3	Rep #4
pH	7.1	7.1	7.1	7.1
Conductivity	3800	3800	3775	3775
T°C	20.7	20.7	20.7	20.7

Pre-Sample Collection Gallons Purged: 33
Time Sample Collection Begins: 1100
Time Sample Collection Ends: 1102
Total Gallons Purged: 34

Comments:

**CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM**

Job No: 31820.03

Site: Busick Air, Dublin

Date: 7/24/91

Well No: MW-3

Sampling Team: G. Williams

Sampling Method: Electric submersible pump for purging; disposable bailer for sampling

Field Conditions: Cloudy, cool ~ 60°F

Describe Equipment Decontamination Before Sampling This Well:

Washed with concentrated cleaning solution, steam cleaned, then rinsed with deionized water

Total Depth of Well:

14.5 ft.

Time:

1120

Depth to Water Before Purging:

4.81 ft.

Volume Height of Water Column:

9.69 ft.

2-inch

* .16

4-inch

.65

=

Volume

6.30 gals

*

Purge Factor

5

=

To Purge

31.5 gals.

Depth Purging From: 13 ft.

Time Purging Begins: 1125

Notes on Initial Discharge: Clear discharge, no odor

Time	Volume Purged	pH	Conductivity	T	Comments
1127	5	7.15	4100	20.7°C	Clear, no odor
1129	10	7.2	3700	20.7°C	Clear, no odor
1133	15	7.2	3700	20.7°C	Clear, no odor
1138	20	7.2	3700	20.7°C	Clear, no odor
1141	25	7.1	3700	20.7°C	Clear, no odor
1144	30	7.1	3700	20.7°C	Clear, no odor

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: 1230

	Rep #1	Rep #2	Rep #3	Rep #4
pH	7.1	7.1	7.1	7.1
Conductivity	3700	3700	3700	3700
T°C	20.7	20.7	20.7	20.7

Pre-Sample Collection Gallons Purged: 31
Time Sample Collection Begins: 1207
Time Sample Collection Ends: 1209
Total Gallons Purged: 31.5

Comments:

APPENDIX F

LABORATORY ANALYTICAL REPORT FOR
GROUNDWATER SAMPLES COLLECTED
JULY 16 AND 24, 1991

Western Operations

1252 Quarry Lane
Pleasanton, CA 94566
(415) 426-2600
Fax (415) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

August 5, 1991

Mr. Richard Silva
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 31820.03
Clayton Project No. 91072.31

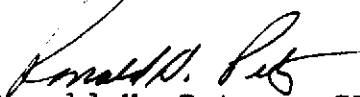
Dear Mr. Silva:

Attached is our analytical laboratory report for the samples received on July 24, 1991. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Maryann Gambino, Client Services Supervisor, at (415) 426-2657.

Sincerely,


Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91072.31

Sample Identification: MW-2
Lab Number: 9107231-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 07/24/91
Date Received: 07/24/91
Date Analyzed: 08/01/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	300
Bromomethane	74-83-9	ND	400
Vinyl chloride	75-01-4	ND	300
Chloroethane	75-00-3	ND	300
Methylene chloride	75-09-2	ND	1,000
1,1-Dichloroethene	75-35-4	ND	100
1,1-Dichloroethane	75-35-3	ND	200
Trans-1,2-Dichloroethene	156-60-5	ND	200
Cis-1,2-Dichloroethene	156-59-2	1,400	200
Chloroform	67-66-3	ND	300
1,2-Dichloroethane	107-06-2	ND	200
1,1,1-Trichloroethane	71-55-6	ND	300
Carbon tetrachloride	56-23-5	ND	300
Bromodichloromethane	75-27-4	ND	400
1,2-Dichloropropane	78-87-5	ND	300
Cis-1,3-Dichloropropene	10061-01-5	ND	300
Trichloroethene	79-01-6	27,000	200
Dibromochloromethane	124-48-1	ND	300
1,1,2-Trichloroethane	79-00-5	ND	300
Trans-1,3-Dichloropropene	10061-02-6	ND	300
2-Chloroethylvinylether	100-75-8	ND	500
Bromoform	75-25-2	ND	400
Tetrachloroethene	127-18-4	500	300
1,1,2,2-Tetrachloroethane	79-34-5	ND	300
Chlorobenzene	108-90-7	ND	400
1,3-Dichlorobenzene	541-73-7	ND	1,000
1,2-Dichlorobenzene	95-50-1	ND	2,000
1,4-Dichlorobenzene	106-46-7	ND	2,000
Dichlorodifluoromethane	75-71-8	ND	500
Trichlorofluoromethane	75-69-4	ND	200
Freon 113	76-13-1	ND	300

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91072.31

Sample Identification: MW-2	Date Sampled: 07/24/91
Lab Number: 9107231-01A	Date Received: 07/24/91
Sample Matrix/Media: WATER	Date Analyzed: 08/01/91
Analytical Method: EPA 602	

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	200
Chlorobenzene	108-90-7	ND	200
1,2-Dichlorobenzene	95-50-1	ND	300
1,3-Dichlorobenzene	541-73-7	ND	200
1,4-Dichlorobenzene	106-46-7	ND	300
Ethylbenzene	100-41-4	ND	200
Toluene	108-88-3	ND	200
Xylenes	1330-20-7	ND	200
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u> LCL UCL
Bromofluorobenzene	460-00-4	75	50 - 150
Bromofluorobenzene		129	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91072.31

Sample Identification: MW-3 Date Sampled: 07/24/91
Lab Number: 9107231-02A Date Received: 07/24/91
Sample Matrix/Media: WATER Date Analyzed: 07/31/91
Analytical Method: EPA 601

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	9.4	0.2
1,1-Dichloroethane	75-35-3	1.0	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection

-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91072.31

Sample Identification: MW-3
Lab Number: 9107231-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: 07/24/91
Date Received: 07/24/91
Date Analyzed: 07/31/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u> LCL UCL
Bromofluorobenzene	460-00-4	78	50 - 150
Bromofluorobenzene		134	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
 for
 Busick Air

Client Reference: 31820.03
 Clayton Project No. 91072.31

Sample Identification: METHOD BLANK Date Sampled: --
 Lab Number: 9107231-04A Date Received: --
 Sample Matrix/Media: WATER Date Analyzed: 07/31/91
 Analytical Method: EPA 601

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
 -- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91072.31

Sample Identification: METHOD BLANK Date Sampled: --
Lab Number: 9107231-04A Date Received: --
Sample Matrix/Media: WATER Date Analyzed: 07/31/91
Analytical Method: EPA 602

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u> LCL UCL
Bromofluorobenzene	460-00-4	67	50 - 150
Bromofluorobenzene		129	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only Page _____ of _____
 Project No. 31820.0B
 Batch No. 9107231
 Client No. _____
 Date Logged In 7/24/91 By TS

REPORT RESULTS TO	Name <u>R. SILVA</u>	Title _____		Purchase Order No. _____		Client Job No. _____				
	Company <u>(FOR) BUSICK AIR LAND</u>	Dept. _____		SEND INVOICE TO	Name <u>R. SILVA</u>					
	Mailing Address _____				Company _____ Dept. _____					
	City, State, Zip _____				Address _____					
Telephone No. _____	Telefax No. _____		City, State, Zip _____							
Date Results Required: <u>STANDARD</u>	Rush Charges Authorized? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Phone Results <input type="checkbox"/>	Samples are: (check if applicable) <input type="checkbox"/> Drinking Water <input type="checkbox"/> Collected in the State of New York		ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added.)					
Special Instructions: (method, limit of detection, etc.)			Explanation of Preservative:		Number of Containers	<div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;"> 421,002 CONTAINER ANALYSIS HOLD </div>				
CLIENT SAMPLE IDENTIFICATION		DATE SAMPLED	MATRIX/MEDIA	AIR VOLUME (specify units)				FOR LAB USE ONLY		
<u>MW-2</u>	<u>7-24-91</u>	<u>H₂O</u>	<u>2x40ml</u>	<u>2</u>				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>MW-3</u>		<u>↓</u>	<u>↓</u>	<u>2</u>				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>TRIP BLANK (0070391) HCL</u>		<u>↓</u>	<u>1x40ml</u>	<u>1</u>				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CHAIN OF CUSTODY	Relinquished by: <u>[Signature]</u>	Date/Time: <u>7-24-91 1540</u>	Received by: _____		Date/Time: _____					
	Relinquished by: _____	Date/Time: _____	Received at Lab by: <u>Rebecca Turner-Chan</u>		Date/Time: <u>7/24/91 3:40</u>					
	Method of Shipment: _____		Sample Condition Upon Receipt: <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Other (explain)							
Authorized by: _____ Date: _____ (Client Signature <u>Must</u> Accompany Request)										

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive
 Novi, MI 48375
 (313) 344-1770

Raritan Center
 160 Fieldcrest Ave.
 Edison, NJ 08837
 (201) 225-6040

400 Chastain Center Blvd., N.W.
 Suite 490
 Kennesaw, GA 30144
 (404) 499-7500

1252 Quarry Lane
 Pleasanton, CA 94566
 (415) 426-2600

DISTRIBUTION:
 WHITE - Clayton Laboratory
 YELLOW - Clayton Accounting
 PINK - Client Copy

Western Operations

1252 Quarry Lane
Pleasanton, CA 94566
415/426-2600
Fax: 415/426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

July 25, 1991

Mr. Richard Silva
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 31820.03
Clayton Project No. 91071.39

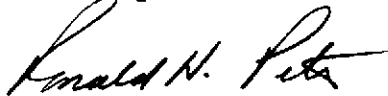
Dear Mr. Silva:

Attached is our analytical laboratory report for the samples received on July 16, 1991. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Maryann Gambino, Client Services Supervisor, at (415) 426-2657.

Sincerely,



Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification: BH-4 Date Sampled: 07/16/91
Lab Number: 9107139-01A Date Received: 07/16/91
Sample Matrix/Media: WATER Date Analyzed: 07/19/91
Analytical Method: EPA 601

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	0.6	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	0.6	0.4
Cis-1,2-Dichloroethene	156-59-2	2.3	0.4
1,2-Dichloroethene (total)	540-59-0	2.9	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	46	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	0.7	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification: BH-4	Date Sampled: 07/16/91
Lab Number: 9107139-01A	Date Received: 07/16/91
Sample Matrix/Media: WATER	Date Analyzed: 07/19/91
Analytical Method: EPA 602	

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4
<u>Surrogates</u>			
		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
			LCL UCL
Bromofluorobenzene	460-00-4	96	50 - 150
Bromofluorobenzene		102	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification: BH-5 Date Sampled: 07/16/91
Lab Number: 9107139-02A Date Received: 07/16/91
Sample Matrix/Media: WATER Date Analyzed: 07/19/91
Analytical Method: EPA 601

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	0.5	0.4
Cis-1,2-Dichloroethene	156-59-2	1.0	0.4
1,2-Dichloroethene (total)	540-59-0	1.5	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	4.4	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
 for
 Busick Air

Client Reference: 31820.03
 Clayton Project No. 91071.39

Sample Identification: BH-5
 Lab Number: 9107139-02A
 Sample Matrix/Media: WATER
 Analytical Method: EPA 602

Date Sampled: 07/16/91
 Date Received: 07/16/91
 Date Analyzed: 07/19/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u> LCL UCL
Bromofluorobenzene	460-00-4	91	50 - 150
Bromofluorobenzene		100	50 - 150

ND Not detected at or above limit of detection
 -- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification: BH6	Date Sampled: 07/16/91
Lab Number: 9107139-03A	Date Received: 07/16/91
Sample Matrix/Media: WATER	Date Analyzed: 07/19/91
Analytical Method: EPA 601	

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	1.7	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	1.4	0.4
Cis-1,2-Dichloroethene	156-59-2	15	0.4
1,2-Dichloroethene (total)	540-59-0	16	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	0.5	0.3
1,1,1-Trichloroethane	71-55-6	0.6	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	93	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	0.7	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification: BH6
Lab Number: 9107139-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 602
Date Sampled: 07/16/91
Date Received: 07/16/91
Date Analyzed: 07/19/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u> LCL UCL
Bromofluorobenzene	460-00-4	95	50 - 150
Bromofluorobenzene		102	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification: BH-7
Lab Number: 9107139-04A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 07/16/91
Date Received: 07/16/91
Date Analyzed: 07/19/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
1,2-Dichloroethene (total)	540-59-0	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	1.2	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification:	BH-7	Date Sampled:	07/16/91
Lab Number:	9107139-04A	Date Received:	07/16/91
Sample Matrix/Media:	WATER	Date Analyzed:	07/19/91
Analytical Method:	EPA 602		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u> LCL UCL
Bromofluorobenzene	460-00-4	94	50 - 150
Bromofluorobenzene		101	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification: METHOD BLANK	Date Sampled: --
Lab Number: 9107139-06A	Date Received: --
Sample Matrix/Media: WATER	Date Analyzed: 07/19/91
Analytical Method: EPA 601	

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
1,2-Dichloroethene (total)	540-59-0	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
 for
 Busick Air

Client Reference: 31820.03
 Clayton Project No. 91071.39

Sample Identification: METHOD BLANK Date Sampled: --
 Lab Number: 9107139-06A Date Received: --
 Sample Matrix/Media: WATER Date Analyzed: 07/19/91
 Analytical Method: EPA 602

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Aromatics</u>			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4
<u>Surrogates</u>			
		<u>Recovery (%)</u>	<u>QC Limits (%)</u> LCL UCL
Bromofluorobenzene	460-00-4	85	50 - 150
Bromofluorobenzene		96	50 - 150

ND Not detected at or above limit of detection
 -- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 31820.03
Clayton Project No. 91071.39

Sample Identification:	BH-4	Date Sampled:	07/16/91
Lab Number:	9107139-01A	Date Received:	07/16/91
Sample Matrix/Media:	WATER	Date Analyzed:	07/19/91
Analytical Method:	EPA 601		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
<u>Purgeable Halocarbons</u>			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	0.6	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	0.6	0.4
Cis-1,2-Dichloroethene	156-59-2	2.3	0.4
1,2-Dichloroethene (total)	540-59-0	2.9	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	46	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	0.7	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only | Page _____ of _____

Project No. _____

Batch No. **9107139**

Client No. _____

Date Logged In **7/16/91** By **RSL**

REPORT RESULTS TO	Name RICHARD SILVA	Title _____	Purchase Order No. _____	Client Job No. 31820.03
	Company BUSICK AIR	Dept. _____	Name RICHARD SILVA	
	Mailing Address _____		Company CLAYTON	Dept. _____
	City, State, Zip _____		Address _____	
	Telephone No. _____	Telefax No. _____	City, State, Zip _____	

Date Results Required: **Normal T.A.T.** Rush Charges Authorized? Yes No Phone Results

Special Instructions: (method, limit of detection, etc.) _____

* Explanation of Preservative: _____

Samples are: (check if applicable)
 Drinking Water
 Collected in the State of New York

SEND INVOICE TO

ANALYSIS REQUESTED
 (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

Number of Containers

EPA 601/602 FOR COMBINED PLEASANTON HOLD

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/MEDIA	AIR VOLUME (specify units)	Number of Containers	Analysis Requested	FOR LAB USE ONLY
BH-4	7-16-91	H ₂ O	40 ALS	2	XP	-01A, B
BH-5	↓	↓	↓	2	XP	-02
BH-6	↓	↓	↓	2	XP	-03
BH-7	↓	↓	↓	2	XP	-04
TRIP BLANKS #0062591	↓	↓	↓	2	XP	-05 ✓

CHAIN OF CUSTODY	Relinquished by: Richard Silva	Date/Time: 7-16-91/1655	Received by: _____	Date/Time: _____
	Relinquished by: _____	Date/Time: _____	Received at Lab by: Shirley A. Turner	Date/Time: 7/16/91 4:55
	Method of Shipment: _____		Sample Condition Upon Receipt: <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Other (explain)	
	Authorized by: Richard Silva	Date: 7-16-91	(Client Signature Must Accompany Request)	

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

- 22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
- Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (201) 225-6040
- 400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
- 1252 Quarry Lane, Pleasanton, CA 94566, (415) 426-2600

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 PINK - Client Copy