



Response to 9/14/99

June 22, 1999  
Project 20805-127.007

Reverend Sura D. Phoenix  
First Christian Church  
1190 Davis Street  
San Leandro, CA 94577

Re: Quarterly Groundwater Monitoring Report, First Quarter 1999,  
First Christian Church, 1190 Davis Street, San Leandro, CA

Dear Reverend Phoenix:

Pinnacle Environmental Solutions, a division of EMCON (Pinnacle), is submitting the attached copy of the laboratory analytical results for the groundwater sample collected from well MW-5 during the first quarter of 1999. This well is located at the First Christian Church, 1190 Davis Street, San Leandro, California. The groundwater sample was collected during quarterly sampling of the ARCO Products Company (ARCO) Service Station No. 2111, located at 1156 Davis Street, San Leandro, California.

Please call if you have questions.

Sincerely,

Pinnacle

*Ute R. Thain*

for

Glen VanderVeen  
Project Manager

Attachments: Figure 1 - Generalized Site Plan  
Appendix A - Copy of Certified Analytical Report and Chain-of-Custody  
Documentation

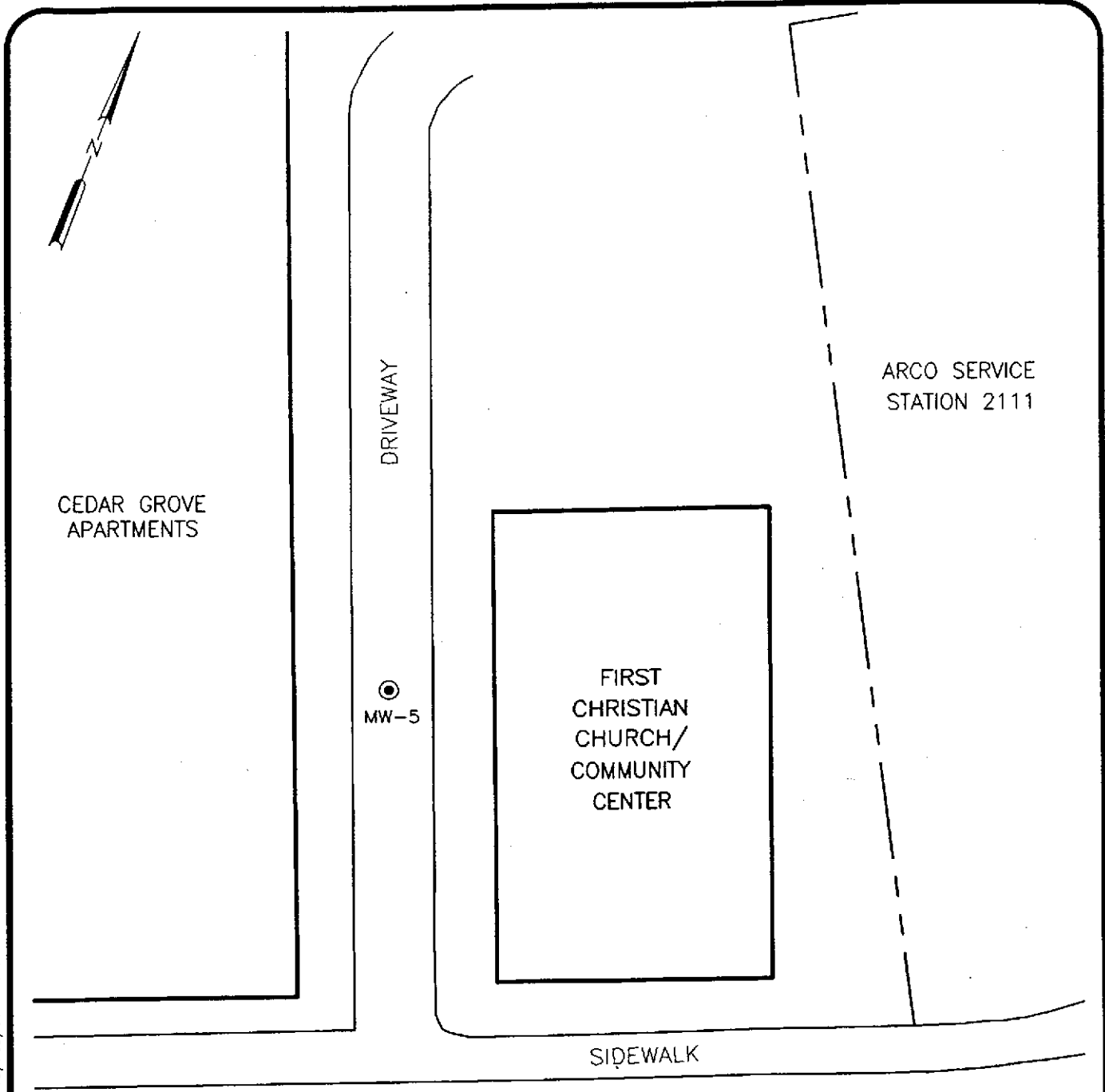
cc: Kevin Tinsley, ACHCSA  
Paul Supple, ARCO Products Company  
File

99 JUN 23 PM 3:01

ENVIRONMENTAL  
PROTECTION

OAKS:\ARCO\2111\QTRLY\FCCQ199.DOC\ut:l





CEDAR GROVE  
APARTMENTS

DRIVEWAY

MW-5

FIRST  
CHRISTIAN  
CHURCH/  
COMMUNITY  
CENTER

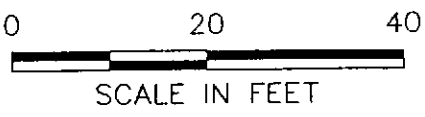
ARCO SERVICE  
STATION 2111

SIDEWALK

DAVIS STREET

EXPLANATION

⊙ Groundwater monitoring well



1" 1/2" 0" 1"  
 IMAGE Files: <No Images>  
 XREF Files: <No Xrefs>  
 Dimscale: 20 Ltscale: 20 Psttscale: 0  
 SANJOSE/CADD: N:\DWG\PINACL\2111\SJCHURCH.DWG Fri, 19/Feb/99 10:22am kblack

**Pinnacle**  
 ENVIRONMENTAL SOLUTIONS  
 A DIVISION OF EMCON

DATE FEB. 1999  
 DWN KAB  
 APP \_\_\_\_\_  
 REV \_\_\_\_\_  
 PROJECT NO.  
 20805-127.006

**FIGURE 1**  
 FIRST CHRISTIAN CHURCH  
 1190 DAVIS STREET  
 SAN LEANDRO, CALIFORNIA  
**SITE PLAN**

**APPENDIX A**

**COPY OF CERTIFIED ANALYTICAL REPORT,  
AND CHAIN-OF-CUSTODY DOCUMENTATION**



February 16, 1999

Service Request No.: S9900316

Mr. Glen Vanderveen  
PINNACLE  
144 A Mayhew Wy.  
Walnut Creek, CA 94596

**RE: 20805-127.006/TO#221312.00/2111 SAN LEANDRO**

Dear Mr. Vanderveen:

The following pages contain analytical results for sample(s) received by the laboratory on January 29, 1999. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above. To help expedite our service, please refer to this number when contacting the laboratory.

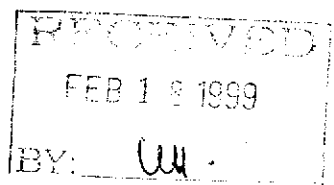
Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 9, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely,

Bernadette T. Cox  
Project Chemist

*Supt Kaur for*  
Regional QA Coordinator



**COLUMBIA ANALYTICAL SERVICES, Inc.**

**Acronyms**

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** ARCO Products Company  
**Project:** 20805-127.006/TO#221312.00/2111 SAN LEANDRO  
**Sample Matrix:** Water

**Service Request:** S9900316  
**Date Collected:** 1/28/99  
**Date Received:** 1/29/99

BTEX, MTBE and TPH as Gasoline

**Sample Name:** MW-5(16)  
**Lab Code:** S9900316-001  
**Test Notes:**

**Units:** ug/L (ppb)  
**Basis:** NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	10	NA	1/30/99	<500	C1
Benzene	EPA 5030	8020	0.5	10	NA	1/30/99	8	
Toluene	EPA 5030	8020	0.5	10	NA	1/30/99	<5	C1
Ethylbenzene	EPA 5030	8020	0.5	10	NA	1/30/99	<5	C1
Xylenes, Total	EPA 5030	8020	0.5	10	NA	1/30/99	<5	C1
Methyl <i>tert</i> -Butyl Ether	EPA 5030	8020	3	10	NA	1/30/99	290	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

**Client:** ARCO Products Company  
**Project:** 20805-127.006/TO#221312.00/2111 SAN LEANDRO  
**Sample Matrix:** Water

**Service Request:** S9900316  
**Date Collected:** NA  
**Date Received:** NA

BTEX, MTBE and TPH as Gasoline

**Sample Name:** Method Blank  
**Lab Code:** S990129-WB1  
**Test Notes:**

**Units:** ug/L (ppb)  
**Basis:** NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	1/29/99	ND	
Benzene	EPA 5030	8020	0.5	1	NA	1/29/99	ND	
Toluene	EPA 5030	8020	0.5	1	NA	1/29/99	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	1/29/99	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	1/29/99	ND	
Methyl tert -Butyl Ether	EPA 5030	8020	3	1	NA	1/29/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company  
Project: 20805-127.006/TO#221312.00/2111 SAN LEANDRO  
Sample Matrix: Water

Service Request: S9900316  
Date Collected: NA  
Date Received: NA

BTEX, MTBE and TPH as Gasoline

Sample Name: Method Blank  
Lab Code: S990128-WB1  
Test Notes:

Units: ug/L (ppb)  
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	1/28/99	ND	
Benzene	EPA 5030	8020	0.5	1	NA	1/28/99	ND	
Toluene	EPA 5030	8020	0.5	1	NA	1/28/99	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	1/28/99	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	1/28/99	ND	
Methyl <i>tert</i> -Butyl Ether	EPA 5030	8020	3	1	NA	1/28/99	ND	



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** ARCO Products Company  
**Project:** 20805-127.006/TO#221312.00/2111 SAN LEANDRO  
**Sample Matrix:** Water

**Service Request:** S9900316  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** NA  
**Date Analyzed:** NA

Surrogate Recovery Summary  
BTEX, MTBE and TPH as Gasoline

**Prep Method:** EPA 5030  
**Analysis Method:** 8020 CA/LUFT

**Units:** PERCENT  
**Basis:** NA

Sample Name	Lab Code	Test Notes	Percent Recovery	
			4-Bromofluorobenzene	a,a,a-Trifluorotoluene
MW-5(16)	S9900316-001		98	81
BATCH QC	S9900234-0015MS		97	95
BATCH QC	S9900234-0015DMS		99	97
Method Blank	S990129-WB1		102	89
Method Blank	S990128-WB1		101	91

CAS Acceptance Limits: 69-116 69-116

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** ARCO Products Company  
**Project:** 20805-127.006/TO#221312.00/2111 SAN LEANDRO  
**Sample Matrix:** Water

**Service Request:** S9900316  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** NA  
**Date Analyzed:** 1/29/99

Matrix Spike/Duplicate Matrix Spike Summary  
 TPH as Gasoline

**Sample Name:** BATCH QC Units: ug/L (ppb)  
**Lab Code:** S9900234-0015MS, S9900234-0015DMS Basis: NA  
**Test Notes:**

Analyte	Prep Method	Analysis Method	Percent Recovery								CAS Acceptance Limits	Relative Percent Difference	Result Notes
			Spike Level			Sample Result		Spike Result					
			MRL	MS	DMS	Result	MS	DMS	MS	DMS			
Gasoline	EPA 5030	CA/LUFT	50	250	250	ND	280	250	112	100	75-135	11	

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** ARCO Products Company  
**Project:** 20805-127.006/TO#221312.00/2111 SAN LEANDRO

**Service Request:** S9900316  
**Date Analyzed:** 1/29/99

Initial Calibration Verification (ICV) Summary  
 BTEX, MTBE and TPH as Gasoline

Sample Name: ICV Units: ug/L (ppb)  
 Lab Code: ICV1 Basis: NA  
 Test Notes:

ICV Source:

Analyte	Prep Method	Analysis Method	True Value	Result	CAS Percent Recovery		Result Notes
					Acceptance Limits	Percent Recovery	
TPH as Gasoline	EPA 5030	CA/LUFT	250	240	90-110	96	
Benzene	EPA 5030	8020	25	25	85-115	100	
Toluene	EPA 5030	8020	25	25	85-115	100	
Ethylbenzene	EPA 5030	8020	25	26	85-115	104	
Xylenes, Total	EPA 5030	8020	75	76	85-115	101	
Methyl <i>tert</i> -Butyl Ether	EPA 5030	8020	25	24	85-115	96	

# ARCO Products Company

Division of Atlantic/Richfield Company

Task Order No. 22312.00 S9900316

## Chain of Custody:

ARCO Facility no. <u>2111</u>	City (Facility) <u>San Leandro</u>	Project manager (Consultant) <u>Glen VanderVeen</u>	Laboratory Name <u>CAS</u>
ARCO engineer <u>Paul Supple</u>	Telephone no. (ARCO)	Telephone no. (Consultant) <u>(408)453-7300</u>	Contract Number
Consultant name <u>EMCON</u>	Address (Consultant) <u>144-A Mayhew Way Walnut Creek, CA 94596</u>		

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH inc. 14, #17/E EPA 1632/8020/8015	TPH Modified 8015 Gas <input type="checkbox"/> Diesel <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/>	TPH EPA 418.1/SM 503E	EPA 601/8010	EPA 824/8240	EPA 625/8270	TCLP Metals <input type="checkbox"/> VOAD <input type="checkbox"/>	Semi Metals <input type="checkbox"/> VOAD <input type="checkbox"/>	CAM Metals EPA 601/07000	TLCOD <input type="checkbox"/> STLCOD <input type="checkbox"/>	Lead Org/DHSD <input type="checkbox"/>	Lead EPA 7420/7421 <input type="checkbox"/>	Method of shipment	
			Soil	Water	Other	Ice	Acid																		
<u>MW-5(6) ①</u>	<u>Z</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<u>HCL</u>	<u>1-28-99</u>	<u>1435</u>		<input checked="" type="checkbox"/>														<u>Sampler will deliver</u>	
																									Special Detection Limit/reporting <u>Lowest Possible</u>
																									Special QA/QC <u>As Normal</u>
																									Remarks <u>RAT 8</u> <u>2-40ml HCL</u> <u>VOAs</u>
																									<u>#20805-127.006</u>
																									Lab Number
																									Turnaround Time: Priority Rush 1 Business Day <input type="checkbox"/>
																									Rush 2 Business Days <input type="checkbox"/>
																									Expedited 5 Business Days <input type="checkbox"/>
																									Standard 10 Business Days <input checked="" type="checkbox"/>

Condition of sample:				Temperature received: <u>DUE: 2-12-99 R1103</u>			
Relinquished by sampler <u>[Signature]</u>	Date <u>1-29-99</u>	Time <u>0800</u>	Received by <u>[Signature]</u>	Date <u>1/29/99</u>	Time <u>10:40</u>		
Relinquished by	Date	Time	Received by	Date	Time		
Relinquished by	Date	Time	Received by laboratory	Date	Time		