2201 Broadway, Suite 101
Oakland, CA 94612-3023
Tel. 510.740.5800
Fax. 510.663.3315

the IT group

March 14, 2000
Project 791655

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

Re: Quarterly Groundwater Monitoring Results, Fourth Quarter 1999, for
First Christian Church, Located at 1190 Davis Street, San Leandro, California

Dear Reverend Phoenix:

On behalf of ARCO Products Company (ARCO), Pinnacle Environmental Solutions, a member of The IT Group (Pinnacle), is submitting the attached laboratory analytical results for the groundwater sample collected from well MW-5 during the fourth 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 Service Station No. 2111, located at 1156 Davis Street, San Leandro, California.

Please call if you have questions.

Sincerely,

Pinnacle

Ute R. Maiwald
for Glen VanderVeen
Project Manager

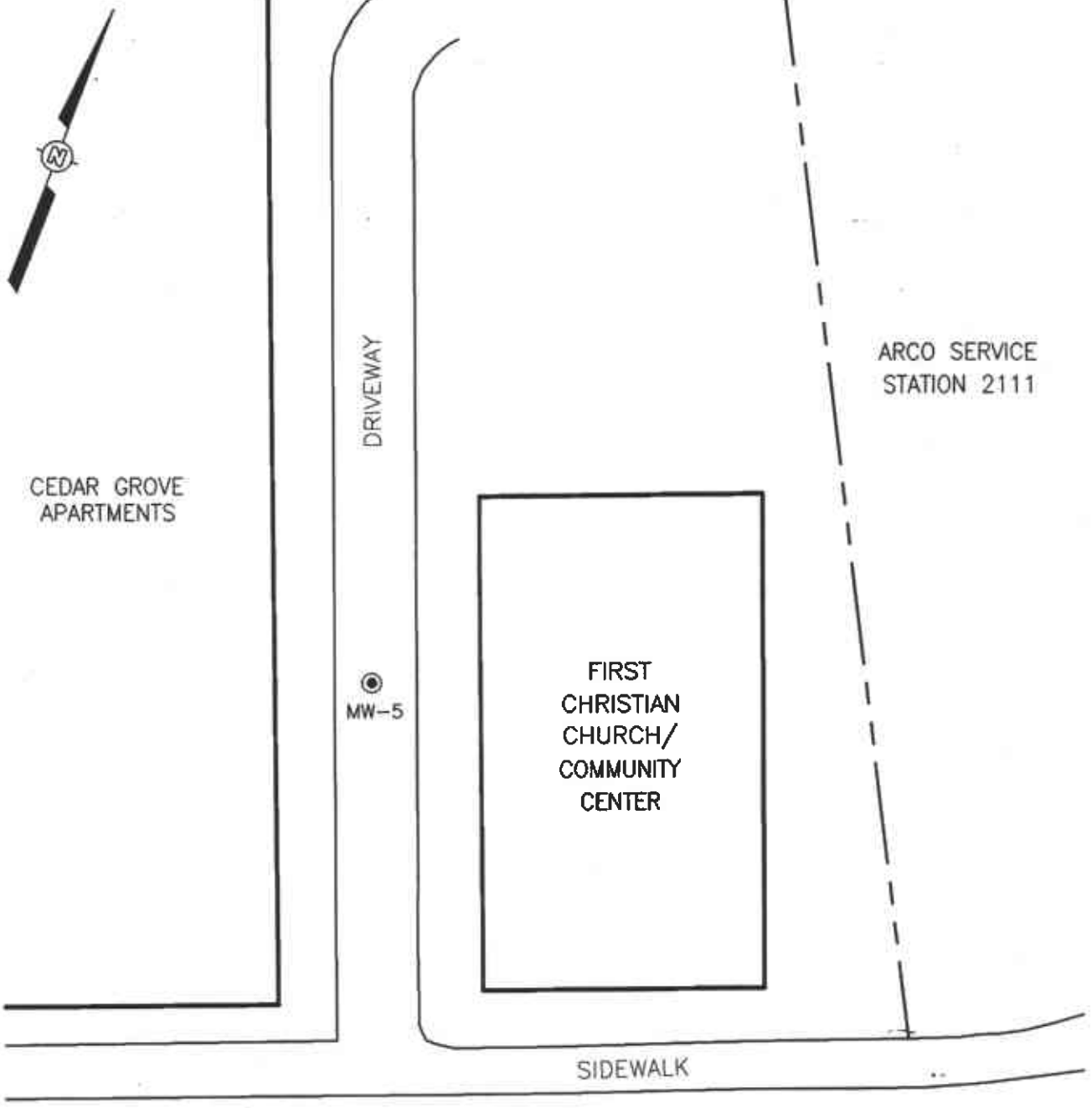
Attachments: Figure 1 - Generalized Site Plan
Appendix A - Copy of Certified Analytical Report and Chain-of-Custody Documentation

cc: Amir Gholami, ACHCSA
Paul Supple, ARCO Products Company
File

00 MAR 16 PM 4:05
ENVIRONMENTAL PROTECTION

OAK\S:\ARCO\2111\QTRLY\FCCQ499.DOC\uh:1

| DRAWN BY | | PROJECT NUMBER |
|---|---|---|
| K. Black | 10-26-99 | 791655 |




SCALE

0 20 40 FEET

EXPLANATION

◉ Groundwater monitoring well

IT CORPORATION

FIRST CHRISTIAN CHURCH

FIGURE 1
SITE PLAN

1190 DAVIS STREET
SAN LEANDRO, CALIFORNIA

SANJOSE/CADD: N:\cad\DWG\PINACL\2111\SJchurch.dwg Tue, 26/Oct/99 01:29pm kblack

# APPENDIX A

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

Columbia Analytical Services INC.
An Employee-Owned Company

November 23, 1999

Service Request No.: S9903532

Mr. Glen Vanderveen
IT/EMCON
2201 Broadway, Suite 101
Oakland, CA 94612

RECEIVED
NOV 29 1999
BY:

**RE: TO#24118.00 RAT#8/2111 SAN LEANDRO**

Dear Mr. Vanderveen:

Enclosed are the results of the sample(s) submitted to our laboratory on November 11, 1999. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 8, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Bernadette Troncales
Project Chemist

Greg Jordan
Laboratory Director

**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 | **Service Request:** | S9903532 |
| **Project:** | TO#24118.00 RAT#8/2111 SAN LEANDRO | **Date Collected:** | 11/10/99 |
| **Sample Matrix:** | Water | **Date Received:** | 11/11/99 |

BTEX, MTBE and TPH as Gasoline

| | | | |
|---|---|---|---|
| Sample Name: | MW-5(16) | Units: | ug/L (ppb) |
| Lab Code: | S9903532-001 | Basis: | NA |
| Test Notes: | | | |

| 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 | 11/19/99 | 130 | |
| Benzene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | 2.0 | |
| Toluene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | 7.0 | |
| Ethylbenzene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | 1.3 | |
| Xylenes, Total | EPA 5030 | 8021B | 1 | 1 | NA | 11/19/99 | 21 | |
| Methyl *tert*-Butyl Ether | EPA 5030 | 8021B | 3 | 20 | NA | 11/19/99 | 5000 | |

Approved By: _____ Date: 11/23/99

IS22/020597p

## COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ARCO Products Company | **Service Request:** | S9903532 |
| **Project:** | TO#24118.00 RAT#8/2111 SAN LEANDRO | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

BTEX, MTBE and TPH as Gasoline

| | | | |
|---|---|---|---|
| Sample Name: | Method Blank | Units: | ug/L (ppb) |
| Lab Code: | S991119-WB1 GC 6 | Basis: | NA |
| Test Notes: | | | |

| 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 | 11/19/99 | ND | |
| Benzene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | ND | |
| Toluene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | ND | |
| Ethylbenzene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | ND | |
| Xylenes, Total | EPA 5030 | 8021B | 1 | 1 | NA | 11/19/99 | ND | |
| Methyl *tert*-Butyl Ether | EPA 5030 | 8021B | 3 | 1 | NA | 11/19/99 | ND | |

Approved By: _____ Date: 11/23/99

1S22/020597p

## COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ARCO Products Company | **Service Request:** | S9903532 |
| **Project:** | TO#24118.00 RAT#8/2111 SAN LEANDRO | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

### BTEX, MTBE and TPH as Gasoline

| | | | |
|---|---|---|---|
| Sample Name: | Method Blank | Units: | ug/L (ppb) |
| Lab Code: | S991119-WB1 GC3 | Basis: | NA |
| Test Notes: | | | |

| 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 | 11/19/99 | ND | |
| Benzene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | ND | |
| Toluene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | ND | |
| Ethylbenzene | EPA 5030 | 8021B | 0.5 | 1 | NA | 11/19/99 | ND | |
| Xylenes, Total | EPA 5030 | 8021B | 1 | 1 | NA | 11/19/99 | ND | |
| Methyl *tert*-Butyl Ether | EPA 5030 | 8021B | 3 | 1 | NA | 11/19/99 | ND | |

Approved By: _____ Date: 11/23/99

1S22/020597p

## COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** ARCO Products Company
**Project:** TO#24118.00 RAT#8/2111 SAN LEANDRO
**Sample Matrix:** Water

**Service Request:** S9903532
**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: 8021B CA/LUFT

Units: PERCENT
Basis: NA

| Sample Name | Lab Code | Test Notes | Percent Recovery 4-Bromofluorobenzene | Percent Recovery a,a,a-Trifluorotoluene |
|---|---|---|---|---|
| MW-5(16) | S9903532-001 | | 107 | 96 |
| Lab Control Sample | S991119-LCS GC 6 | | 95 | 101 |
| Dup Lab Control Sample | S991119-DLCS GC 6 | | 83 | 120 |
| Method Blank | S991119-WB1 GC 6 | | 93 | 93 |
| Method Blank | S991119-WB1 GC3 | | 98 | 96 |
| CAS Acceptance Limits: | | | 69-116 | 72-139 |

Approved By: _____ Date: 11/23/99

SUR2/020397p

## COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** ARCO Products Company
**Project:** TO#24118.00 RAT#8/2111 SAN LEANDRO
**LCS Matrix:** Water

**Service Request:** S9903532
**Date Collected:** NA
**Date Received:** NA
**Date Extracted:** NA
**Date Analyzed:** 11/19/99

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
BTEX and TPH as Gasoline

Sample Name: Dup Lab Control Sample
Lab Code: S991119-LCS GC ( S991119-DLCS GC 6
Test Notes:

Units: ug/L (ppb)
Basis: NA

| Analyte | Prep Method | Analysis Method | True Value LCS | True Value DLCS | Result LCS | Result DLCS | Percent Recovery LCS | Percent Recovery DLCS | CAS Acceptance Limits | Relative Percent Difference | Result Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | EPA 5030 | 8021B | 25 | 25 | 27 | 24 | 108 | 96 | 75-135 | 12 | |
| Toluene | EPA 5030 | 8021B | 25 | 25 | 24 | 24 | 96 | 96 | 73-136 | <1 | |
| Ethylbenzene | EPA 5030 | 8021B | 25 | 25 | 24 | 24 | 96 | 96 | 69-142 | <1 | |
| Gasoline | EPA 5030 | CA/LUFT | 250 | 250 | 240 | 250 | 96 | 100 | 75-135 | 4 | |

Approved By: _____ Date: 11/23/99

DLCS/020597p

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** ARCO Products Company
**Project:** TO#24118.00 RAT#8/2111 SAN LEANDRO

**Service Request:** S9903532
**Date Analyzed:** 11/19/99

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

Sample Name: ICV
Lab Code: ICV1
Test Notes:

Units: ug/L (ppb)
Basis: NA

ICV Source:

| Analyte | Prep Method | Analysis Method | True Value | Result | CAS Percent Recovery Acceptance Limits | Percent Recovery | Result Notes |
|---|---|---|---|---|---|---|---|
| TPH as Gasoline | EPA 5030 | CA/LUFT | 250 | 250 | 85-115 | 100 | |
| Benzene | EPA 5030 | 8021B | 25 | 28 | 85-115 | 112 | |
| Toluene | EPA 5030 | 8021B | 25 | 27 | 85-115 | 108 | |
| Ethylbenzene | EPA 5030 | 8021B | 25 | 28 | 85-115 | 112 | |
| Xylenes, Total | EPA 5030 | 8021B | 75 | 85 | 85-115 | 113 | |
| Methyl *tert*-Butyl Ether | EPA 5030 | 8021B | 25 | 27 | 85-115 | 108 | |

Approved By: _____ Date: 11/23/99

ICV032196

**ARCO Products Company**
Division of AtlanticRichfieldCompany

**Task Order No.** 24118.00 S990 3532

**Chain of Custody**

| | | | |
|---|---|---|---|
| ARCO Facility no. 2111 | City (Facility) San Leandro | Project manager (Consultant) Glen Vonderveen | Laboratory name CAS |
| ARCO engineer Dave Supple | Telephone no. (ARCO) | Telephone no. (Consultant) (408)453-7300 | Fax no. (Consultant) (408)437-9526 |
| Consultant name EMCON | | Address (Consultant) 2201 Broadway #101 Oakland, CA 94612 | Contract number |

| Sample I.D. | Lab no. | Container no. | Matrix: Soil | Matrix: Water | Matrix: Other | Preservation: Ice | Preservation: Acid | Sampling date | Sampling time | BTEX 602/EPA 8020 | BTEX/TPH/MTBE EPA M602/8020/8015 | TPH Modified 8015 Gas ☐ Diesel ☐ | Oil and Grease 413.1 ☐ 413.2 ☐ | TPH EPA 418.1/SM503E | EPA 601/8010 | EPA 624/8240 | EPA 625/8270 | TCLP Metals ☐ Semi VOA ☐ VOA ☐ | CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐ | Lead Org./DHS ☐ Lead EPA 7420/7421 ☐ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-5(16) | | 2 | (1) | X | | X | HCl | 11/10/99 | 1240 | | X | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: RAT 8
2-40ml HCl
VOAs
#79655

Lab number

Method of shipment: Sampler will deliver

Condition of sample:

Temperature received: DUE: 11/22/99 R11 D3-H

| | | | |
|---|---|---|---|
| Relinquished by sampler | Date 11/11/99 | Time 0830 | Received by Bruce Pulk 11/11/99 10:35 |
| Relinquished by | Date | Time | Received by |
| Relinquished by | Date | Time | Received by laboratory / Date / Time |

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☒

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APC-3292 (2-91)